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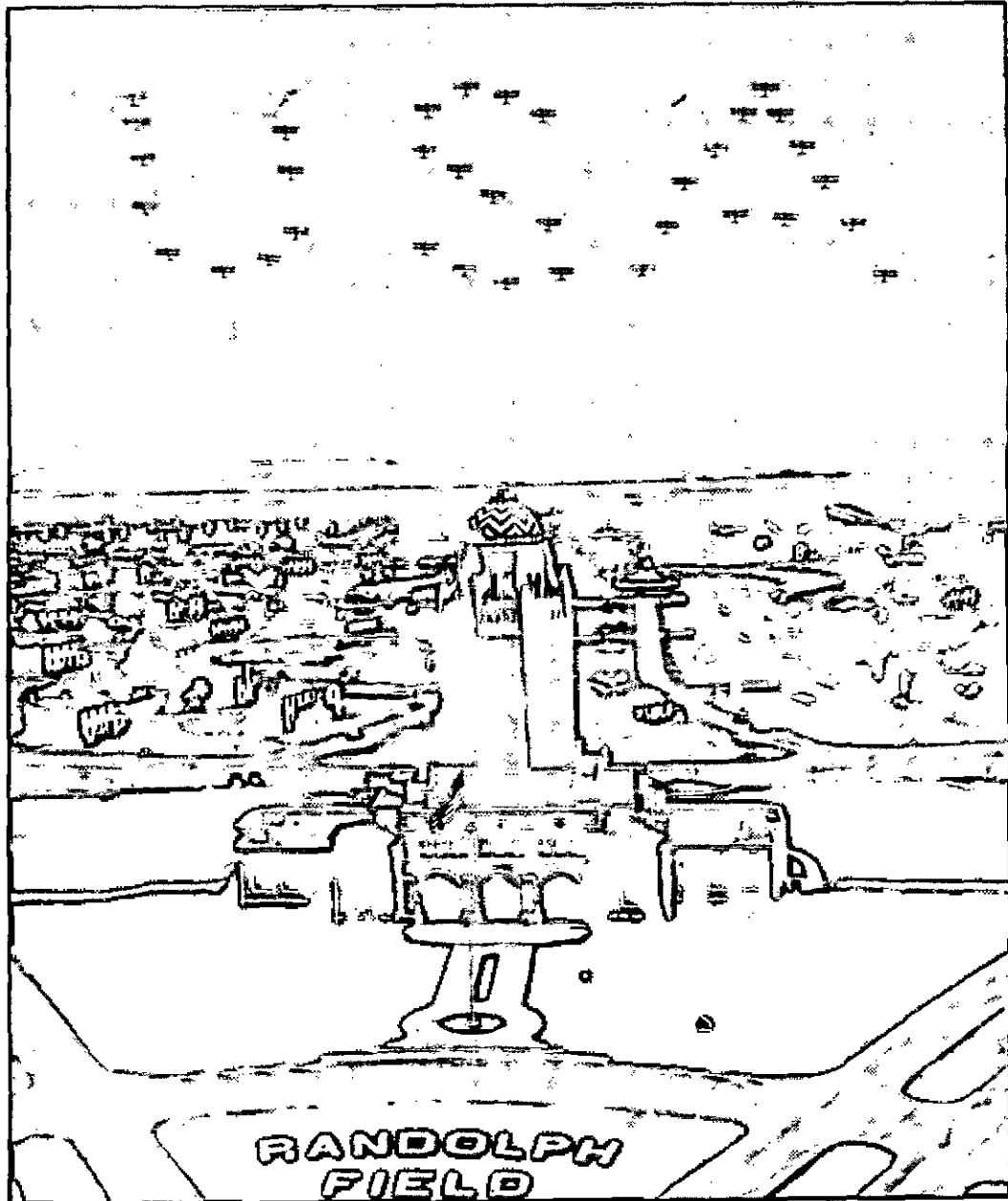
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NEWS LETTER



.. AIR CORPS TRAINING CENTER NUMBER ..

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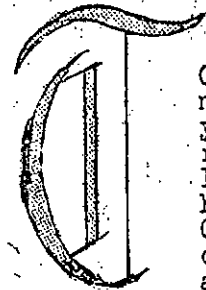
ADP. 104

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE AIR CORPS TRAINING CENTER

By Brigadier General James E. Chaney, Air Corps



To be effective, an Air Corps must have a large number of young combat pilots. The relative proportion of lieutenants to officers of higher grade in the Air Corps is approximately double that of any other arm. Therefore, to maintain the youth of the fighting squadrons, it is necessary to rotate young graduates of the Training Center through the combat squadrons and then return the bulk of them to civil life. This secures at the same time a pool of young trained military pilots in the Air Corps Reserve for immediate replacements in a major emergency.

The mission of the Air Corps Training Center is to turn out young military pilots competent to undertake the duties of a second lieutenant in a tactical squadron. It consists of the Primary Flying School located at Randolph Field, the Advanced Flying School located at Kelly Field, and the School of Aviation Medicine at Randolph Field. The course of instruction is one year, with eight months spent at the Primary School and four months at the Advanced School.

There are always three classes in the Training Center, two at the Primary School and one at the Advanced School, a new class entering every four months. At the Primary School the student spends four months on the Primary Stage and four months on the Basic Stage. The instruction on the Primary Stage is given on a training type airplane, known as the PT, and consists of dual instruction, the fundamental flying maneuvers, accuracy work and acrobatics.

On the Basic Stage, the student advances to a larger, more powerful and speedier type of airplane known as the BT type. In this plane, and with expert instructors, he now reviews all of the work done on the Primary Stage, but in a ship with different flying qualities and which more nearly approach those of tactical squadrons. At this stage, he also gets formation flying, strange field

landings, instrument flying under the hood, and day and night navigation flights. The objects sought so far have been perfection in flying technique and the development of headwork.

The third quarter of the student's scholastic year is spent at the Advanced Flying School where he specializes in either Pursuit, Bombardment, Attack or Observation aviation, using service type equipment. In addition to intensive flying training in his own specialty, he is given also considerable experience in day and night navigation, instrument flying, and transition to all types of military airplanes available at the Advanced Flying School.

A student can absorb only a limited amount of flying instruction each day, especially during the first few months of the course. Therefore, from the very beginning of the course, ground instruction goes hand in hand with flying instruction. The main subjects taught are Airplane Engines, Theory of Flight, Radio Code, Ground Gunnery, Air Navigation, Meteorology, Airplane Maintenance, Military Law, Maps, Customs of the Service, and Military Drills, with a continued indoctrination of the fundamentals of military service and discipline. At the Advanced Flying School, while each student specializes in flying the tactical formations and in carrying out the tactical missions of one specialty only, all are given theoretical instruction in Pursuit, Bombardment, Attack and Observation aviation.

The student body is made up of Flying Cadets and student officers. Each new class consists of approximately one hundred and fifty men. The class beginning in October of each year usually is composed of from fifty to eighty second lieutenants from the graduating class at West Point. The Flying Cadets in this class therefore are reduced to such number as to make a total for the class of approximately one hundred and fifty. The Flying Cadets, with the exception of a few ex-enlisted men from the Army, are drawn entirely from civil

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life. They are selected from candidates between the ages of twenty-one and twenty-seven years who have successfully completed at least two years in a college or university and who are in excellent physical condition. College graduates, however, receive priority in the selection of students.

Upon graduation from the Training Center the Flying Cadet is assigned to a tactical squadron at one of the Air Corps stations in the United States for an additional year, upon completion of which he is commissioned a second lieutenant in the Air Corps Reserve and serves an additional year with a tactical unit as a second lieutenant. The young officer graduate from the Training Center is also assigned immediately to a tactical unit in the Air Corps. Upon completion of his active duty as a second lieutenant, the young Reserve officer returns to civil life, retaining his status as an Air Corps Reserve officer. He is eligible to take examinations for a commission in the Regular Army when and if vacancies exist, and can affiliate himself with local Reserve or National Guard units, thus maintaining his flying experience, and his military contacts and associations.

In the period of one year at the Training Center the young student receives a total of 323 hours flying instruction. As a result of this intensive instruction carried on almost continually throughout the year at the Training Center, the students and regular personnel thereat put in a tremendous number of flying hours per year. For the fiscal year 1935 this flying for the Training Center, computed in airplane flying time, amounted to 113,802.8 airplane hours. The flying time for the remainder of the Regular Army for the same period was 312,575.4 hours, that of the National Guard 40,636.7 hours and that of the Organized Reserves 23,204.8 hours.

The main object of the School of Aviation Medicine is to train medical officers of the Regular Army, National Guard and Organized Reserves in the duties of the flight surgeon. In addition, it carries out research work in aviation medicine and conducts physical examinations for flying. The basic course is of four months' duration, with two classes per year. The Training Center, with its large student body and Air Corps officer personnel, is an ideal location for the School of Aviation Medicine. The study of the pilot is still the greatest problem for flight surgeons, and conclusions about personnel, to have any degree of accuracy or value, must involve the study of large numbers. Furthermore, flight surgeons throughout the United States are largely responsible for the selection of trainees. A student flight surgeon, as a result of his intimate contact at the Training

Center with the flying training instructors, trainees, and trainees who fail, obtains a firsthand conception of the type of Flying Cadet desired by the Air Corps.

About 45% of the students entering the Primary Flying School successfully complete the course and graduate from the Training Center. Most of the failures are due to unsatisfactory progress in flying. Therefore, the fact that a candidate has passed the rigid physical and the educational requirements does not insure his graduation. This indicates that there are other factors that make up the potential military airplane pilot that are not being given consideration in the selection of students. Just what all these factors are is problematical. However, the Training Center, and especially the School of Aviation Medicine, are studying this problem and with very promising and positive results. Success in being able to determine readily those possessing sufficient aptitude or other essential qualities for rapid progress in military flying would be of the greatest value in a national emergency. Enormous savings would be made in airplanes, instructors, human lives, and time. During the last war, in the Air Services throughout the world, there were few eliminations; the student either completed the course or was killed.

The Training Center appreciates the fact that many of those who are eliminated in its course of flying instruction could be taught to fly under certain conditions, but based on experience of the past, feel that they do not possess those qualities necessary in developing a military fighting team in the air. With a limited number of military pilots authorized for the Air Corps, it is essential to retain only those students who have sufficient aptitude to progress fairly rapidly and safely to a high standard of performance in military flying and combat teamwork that are so necessary in the face of an enemy in active operations.

The problem of the Air Corps in this respect may be compared somewhat to that of developing a big league baseball team where the number of players is limited. The recruits for these teams are carefully studied and selected from those who have demonstrated that, in addition to being physically fit and able to play an excellent game, they possess certain qualities that can be developed to a much higher standard of performance in teamwork than they have so far exhibited.

The trend of military airplane development definitely points to the use of multi-engine airplanes of greater size, greater speed, and greater cruising range. The operation and maintenance of the modern military airplane with its radio equipment, blind landing equipment, supercharged engines, controllable pitch

propellers, together with other instruments and equipment, clearly indicate more air space, more ground space, more hangar space, more shop space, and the extension of all ground and air courses now being given at Randolph and Kelly Fields as soon as modern equipment becomes available.

With the War Department's approval of the 2320 airplane program as recommended by the War Department Special Committee, headed by the Hon. Newton D. Baker; with the former Chief of Staff, General MacArthur, recommending that this figure be stepped up to 2500 airplanes; with a present strength of approximately only 1300 airplanes for the entire Air Corps; with an actual shortage in flying personnel to face,

which may be critical if not foreseen and synchronized with an improvement in the airplane situation; with England, France, Japan, Italy and Germany entering upon greatly expanding programs for their air forces in recognition of the increasing importance of aviation in national defense; with our geographical isolation fast becoming a thing of the past; with the fairly safe and reasonable assumption that our military aviation will continue to expand in years to come; the Air Corps Training Center undoubtedly has before it a formidable task in maintaining the youth of the combat squadrons of our Regular Army and National Guard, and a pool of Reserves for immediate service in a national emergency.

JAPANESE GOOD-WILL FLIGHT TO MANILA

From Clark Field, P.I., comes the brief item that Major C.W. Ford and Capt. Thomas W. Steed, Air Corps, intercepted the Japanese good-will plane off the west coast of Luzon on its recent Japan-Philippine flight and escorted it to Manila.

In connection with this flight, the Manila TRIBUNE of November 17th has the following to say:

"Unannounced, unprecedented by the usual series of press agent hullabaloo, the Dai-Mai, Japanese goodwill plane representing the Osaka Mainichi and the Tokyo Nichi-Nichi, came whirring last Tuesday over Manila's airdrome at Grace Park and finally glided smoothly down the landing field. In no time at all, the crew composed of a young Japanese newspaperman, Fukuwichi Fukumoto, one pilot and one mechanic, were surrounded by a welcoming group - Japanese officials and businessmen, the city mayor and girls in Balintawak with bouquets to offer, a brass band, and children waving the Japanese, American and Filipino flags.

Unostentatiously the party took off cheered by thousands at the military airdrome at Tokyo last Monday morning, and without much ado covered 3,820 miles.

Said Mr. Fukumoto in English with hardly any accent, "There is nothing official in this flight we have just made. This much I can tell you: the rank and file of Japanese millions consider the Dai-Mai's recent transoceanic flight as the harbinger of something significant for your country and mine."

In the words of a local commentator, "The goodwill flight of the Dai-Mai is another notable instance of Japanese initiative. While ordinarily the Island-Empire would have sent a diplomat plenipotentiary, this time it has picked on a newspaperman to perform the task of a goodwill missionary. Which is a novel way of playing diplomatic overtures."

Mr. Fukumoto of the Mainichi is a typical gentleman of the Nipponese press. He could adequately gauge the pulse of national sentiment in his country. Here is a typical Japanese slant on the current Japanese-Filipino relations in the opinion of Mr. Fukumoto: "The average Japanese, picked from the ranks of the farmers, the merchants, the soldiers, and the artisans, is still vaguely conscious of cultural, geographic, and racial ties with his neighbor the Filipino. He is moved by the same motives as his neighbor oriental and is interested in what his neighbor thinks and does. Seen from the Japanese angle there is no reason why relations between the Philippines and Japan cannot be made closer than they are now."

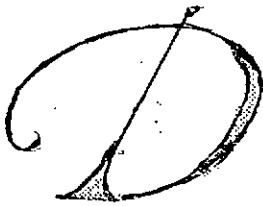
Speaking of the Dai-Mai aerial flight, Mr. Fukumoto said: "When our papers published the Japan-Manila aerial project, doubts were entertained in several quarters. Rival newspapers intimated that nothing would materialize out of the plan. So now, we have not only blazed an air trail in the Orient but also established a landmark in journalism in this part of the world." Mr. Fukumoto also hinted on the current journalistic boom in Japan. "The newspaper in my country is getting to be an institution. It motivates our very life, our ideals, our economics, even our political structure."

The Osaka Mainichi and the Tokyo Nichi-Nichi combine has a circulation of more than 3,000,000. It employs the most modern devices like airplanes and pigeons for gathering and collecting news dispatches and expediting the distribution of Japanese newspapers. Mr. Fukumoto's agency alone has nine airplanes in commission.

"I cannot assure," said Mr. Fukumoto, shifting the subject to the Philippines, "whether the Japanese people show enthusiasm over the coming commonwealth. The average Japanese citizen is vaguely con-

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KELLY FIELD DURING THE WAR



URING the World War Kelly Field was the largest aviation field in the United States and one of the greatest in the world. In a sense it was the favored child of the San Antonio Chamber of Commerce. A committee from this organization assembled the necessary land for this undertaking and presented the proposition to the Aviation Production Board in Washington in June, 1917. The contract was signed the following month, the land comprising all of what was then known as Kelly Field No. 2. The land embracing Kelly Field No. 1 was acquired a few months earlier. In addition to Kelly Field No. 2, a tract nearly as large, just across the railroad below Kelly Field No. 1, was leased, as was another tract, still larger, across the Somerset Road. The total acreage of what would have been these four Kelly Fields was over 6,000 acres. The Secretary of the Chamber of Commerce signed the contract on behalf of San Antonio and, at the request of the Aviation Department, the Chamber of Commerce leased the land from the owners individually and subleased it to the United States Government.

The haste under which the contract was worked out made it impossible to figure costs exactly, and the Chamber of Commerce offered the Government one of the most unique contracts in the history of the assembling of the aviation fields. This contract called for service by the Chamber of Commerce without profit and the guarantee that the books and accounts of the Chamber of Commerce as agent for the aviation fields should be examined periodically by U.S. Government officials, or at any time the Government officials might choose to examine the books; and that at stated intervals any excess over the actual cost of handling these aviation propositions for the Government should be returned to the Government.

The land covering what would have been Kelly Field No. 3 and Kelly Field No. 4 was released in the fall of 1917 at the suggestion of the British and French aviators on duty in this country, they being of the opinion that such large flying fields so close together would result in accidents and collisions.

The original flying in the United States Army was done at San Antonio; one lone hangar stood near what during the war was the center of Camp Travis, and Lieut. Benjamin D. Foulois, as he was then known, now Major General, was the pioneer of American Army aviators. At the time of the threatened trouble with

Mexico in 1916, the entire army air fleet was assembled at San Antonio, and consisted of eight more or less antiquated machines. Unfortunately, the record of army flying will probably never give full credit to the daring young men who risked their lives flying these old machines into Mexico.

In the development of Kelly Field an enviable record of efficiency was established, not only in the gross number, but in the relative number of flying hours per airplane. At the close of the winter of 1917-1918, the total number of flying hours at Kelly Field was greater than that of all the other aviation fields in the United States put together. There is no doubt of the fact that the men trained at this great field contributed largely to the success of the American Army in France.

This stretch of land whereon the field lies comprised only a few scraggly cotton-fields, breaking the apparently interminable stretch of mesquite and cactus prairie. With the rolling up of the war clouds along the horizon, the great value of this strip of land as an aviation field was seen, and the genius of America was called upon quickly to produce here in reality what at that time only existed in the dreams of our Army organizers. And to what extent American genius responded was evidenced by the results subsequently accomplished. Kelly Field is a glowing memorial to the pioneers who dared not only to scheme and to plan, but to put these schemes and plans into execution.

It was in April 9, 1917, that four airplanes arose from the hangars at the old Remount Station (Camp Travis) and, after flying across San Antonio, alighted on what is now Kelly Field. Their pilots were men well known in early aviation circles, namely: the late "Eddie" Stinson, civilian instructor and a brother of Katherine and Margaret Stinson, the "Early Birds" among the women fliers; Captains Davidson, McDonald, Spotts, Lt. Bagnell, and one other man whose name is not recalled. They made their landing in a cotton field, an oasis amid a boundless stretch of waste covered by the prickly-pear cactus and mesquite. Tent hangars had been hurriedly erected there previously, and in these the machines were stored for the night, while the men made their beds upon the ground by the sides of their machines. This was the initial trip of airplanes to Kelly Field, but the actual formal establishment of the Field did not occur until May 7, when 700 men arrived. One week later, however, there were 4,000 men on the field. This was just a little over a week after the declaration of war against Germany. Men came in at a rapid rate, and soon the late Major Townsend,

F. Dodd, of the Aviation Section, Signal Corps, in Washington, arrived to take charge of the definite organization of the field. The contract for its construction was let, and with lightning-like rapidity the ground was cleared, and almost as quickly as the cotton and mesquite disappeared there arose in their stead scores of buildings - hangars, barracks, mess halls, officers' quarters, warehouses, machine shops and all the necessary adjuncts of a first-class flying field.

The middle of October, 1917, saw the field crowded to its capacity, and almost before it was realized even by those who had it in charge, it had dwarfed all former expectations and become what they had hardly dared dream. Even then its expansion did not stop, for as America's eyes become more and more widely opened to the task she had before her, the great importance of aviation was recognized as never before, and the builders at Kelly Field were taxed to the utmost to provide accommodations for the rapidly increasing numbers of men. And until the signing of the Armistice this never-ending stream of men continued to pour into the field. Many passed on through the School and were transferred to still more specialized branches of training elsewhere, but many also remained at Kelly Field, and in the short space of time that had elapsed since the Air Service began its expansion, many departments, which were entirely unknown and undeveloped in the early days of flying, came to be recognized as absolutely essential.

Very little information regarding the wonderful extent of the organization at Kelly Field reached the outside world, but its high efficiency as a Flying School attested the success of the methods in operation. Every man arriving at the Field was "trade-tested" by a board of experts maintained for this sole purpose. Examinations in 53 different trades were given by this board - experts in this number of vocations being required for the operation of the Air Service at that stage of its development. Each man as he took his "trade-test" was classified regarding his degree of proficiency in any of the 53 trades with which he was familiar. Card records of each man's "trade-test" was maintained, and it was only the work of a few minutes for Headquarters to obtain a detachment of men for any particular line of work.

Since its earliest conception, Kelly Field was as a veritable "clearing house" for the other flying fields in the United States. Detachments were made up for all the other fields, and as fast as requisitions were received for men in certain lines of work they were quickly filled from the ranks of the skilled specialists awaiting assignment.

On September 15, 1917, the Flying De-

partment of Kelly Field became a reality. It was then designated as Kelly Field No. 2 to distinguish it from Kelly Field proper, which then assumed the title of Kelly Field No. 1. Later, the name Kelly Field No. 2 was officially changed to the Flying Department. Thus came into existence the two great subdivisions of Kelly Field - the one, a concentration camp, handling the organization, instruction and supervision of the enlisted personnel for duty overseas and at the other flying fields throughout the country; the other, a flying field, training officers and cadets in their elementary instruction for flying duty overseas, and working under conditions similar to those that might be experienced on the actual field of battle. In fact, both fields united formed one of the nuclei of the American Air Service.

During the latter part of 1917, the Flying Department, although still in its infancy, started to devote its attention to the actual training of the fliers, and immediately undertook to perfect its organization to handle efficiently and expeditiously the vast amount of elementary training that was to be its share in the World War. Its administration was divided into the following principal sub-divisions: The Headquarters of the Flying Department, supervising the activities of the field; the Officer in Charge of Flying, supervising and handling the actual flying training of the officers and cadets; the Cadet Wing, directly in control of the curriculum and preliminary instruction of the cadets; and the Engineering Department, responsible for the actual upkeep and care of the planes and motors. Many other subsidiary departments were created to harmonize and assist in maintaining the field at its efficient standard.

As the year 1918 began and progressed, the Flying Department began to display its true stride of efficiency and speed, and its range of activities advanced by leaps and bounds. It was a hotbed of activity. The atmosphere was clouded with planes from daybreak to sunset; cadets and officers were completing their instruction in record-breaking time; the personnel were changing with rapid frequency; the workers in the shops and hangars were toiling night and day to keep every plane and motor in operation; and everyone was striving to the utmost to assist the country in its hour of need.

The early part of the summer of 1918, with its advent of good flying weather in the North, caused a temporary lull in the flying activities of the Flying Department. A number of northern flying fields were established, and the greater part of the cadets and student officers from various Ground Schools throughout the country migrated to the north-

ern fields. However, the Flying Department still continued to do a lion's share in the elementary training. During the summer months plans were being perfected to handle more efficiently the huge portion of the training burden that would fall upon the Flying Department again in the Fall when, with the subsequent closing of the northern fields, the influx of cadets and student officers would revert back to it.

JAPANESE GOOD-WILL FLIGHT TO MANILA

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scious of what a commonwealth means. Among our newspaper readers alone, it took our editors four entire months to enlighten the reading public on the various aspects of a commonwealth. But tell any Japanese country farmer that independence is coming to the Philippines and he will readily take what it means. We have long ceased to think in terms of our race. We are always orientals and peace for the orient is always peace for Japan.

When the Dai-Mai landed at Grace Park at about 2:30 last Tuesday afternoon, it completed its schedule to an hour. The newspaper envoy attaches much significance to this fact because aside from blazing an air trail between Japan and the Philippines, the first one on record to be accomplished by an oriental, the Dai-Mai's successful trip will give impetus to the much-needed commercial airlines between Japan and the Philippines.

NEW CONSTRUCTION AT FRANCE FIELD

Ten sets of officers' quarters, sixteen bachelor officers' apartments, twenty-two sets of noncommissioned officers quarters, and one dispensary are very near completion at France Field, Panama Canal Zone. In fact, they are promised by the first of February. They will be a welcome relief from the termit-eaten temporary wooden quarters now being occupied.

Preparations are now being made to move into the new hangars, and the new operations, parachute and Photo Section building just recently completed.

The enlisted personnel of the 25th Bombardment Squadron, and the Panama Air Depot, have found living conditions quite comfortable in their two new barracks.

Major Willis R. Taylor recently returned from a short visit in the States, the purpose of which was to obtain information relative to a proposed air expedition to South America in search of Paul Redfern, the flyer who was lost in the jungles several years ago. Major Taylor reported a pleasant trip both ways, via the Pan-American Airways. He is stationed at France Field, Panama Canal Zone.

In the Fall of 1918, the Flying Department was fully prepared and waiting for the hundreds of cadets and students officers expected to arrive for training. The Armistice, however, caused the War Department partially to suspend intensive operations, and the Flying Department was advised that henceforth it would continue only at a normal pace until the future destiny of the Air Service was established.

FELTS FIELD TO BE IMPROVED

Felts Field, Spokane, Wash., the base of the 41st Division Aviation, National Guard of Washington, received a real Christmas present from the Works Progress Administration. Presidential approval of an application for \$235,880 for general improvement of the airport was received just before Christmas.

Works Progress Administration engineers surveying the one and seven-tents mile long airport found a difference of ten feet in the contour over a distance of 3,000 feet. This is to be brought within the air commerce regulation of one-half of one percent grade by the handling of about 300,000 yards of earth.

After the field has been made level, three surfaced runways are to be constructed, varying in length from 1,700 to 3,000 to 5,000 feet long. A total of 120 flush-type marker landing lights are to be strung on 14,000 feet of conduit on all sides of the surfaced landing strips.

Six additional flood-type landing lights are to be installed at east end of the airport, as there are already landing lights on the west end of the field, where the 41st Division Aviation Headquarters building and hangar are situated. The two long surfaced runways will pass directly in front of the Army hangar.

"Work on this project will be started just as soon as the money is allocated," said Mr. Joe Ott, local WPA administrator. "We propose to make Felts Field the finest airport in the Northwest. There will be 500 employables put on the project."

The application also includes erection of a fence around certain portions of the field, and the construction of a commercial hangar, 100 x 103 feet, for use by the Northwest Airlines. A beautification program is also included in the application.

Eighty-five percent of the 140 students of the October class of the Primary Flying School, Randolph Field, Texas, were soloed. This represents the highest percentage for any class since the beginning of training at Randolph Field.

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THE FLYING TRAINEE AT THE AIR CORPS PRIMARY FLYING SCHOOL

By Captain John M. Weikert, Air Corps
Commandant of Cadets

THE magnificent flight of Lindbergh to Paris in May of 1927 really marks the beginning of the present universal interest of American youth in aviation. It was this spectacular feat of personal courage and physical stamina that captured their imagination and fired them with the fanatic zeal to emulate his achievement and create for themselves a career in this new sphere of endeavor.

This air-consciousness swept rapidly thru the nation. All were affected by it. It was noticeable in the play and dress of children. High school youths everywhere formed Model Clubs and reproduced miniature models of current aircraft types that rivaled their originals for perfection of design and scaled down performance. The catch phrase, "Today's pilot of models will be tomorrow's model pilot," soon established itself as a definite fact. College students demanded courses in aeronautical engineering. Private schools in flying and for mechanical training sprang into existence in every thickly populated district in answer to the public's desire to fly. Even commercial aviation sensed the change in popular sentiment. Passenger traffic received a marked impetus and air mail and express tonnage increased on an otherwise inexplicable scale. Public interest in the U.S. Army's Air Corps Training Center reflected this national popularity in a sudden barometer-like rise in the receipt of letters of inquiry, and subsequently, in applications for training. The attention of America's young career-men was focused on the Government's aerial training system, its efficiency having previously been accorded universal recognition and the professional opportunities it presented. Here they found an outlet for their desire to learn to fly, and at no expense to themselves, plus unlimited possibilities for commercial connections thereafter, or for service with the military establishment.

By a fortunate coincidence, the effects of this engulfing wave of interest arrived coincidental with the preliminary efforts of the Air Corps to absorb the increase in personnel included in the Five Year Program as authorized by the Act of July 2, 1926. In order to raise the standard of the graduate of the school to a type readily assimilable by the Air Corps of the Regular Army, the National Guard and the Reserve Units, it was decided to step-up the entrance requirements. This policy served the dual purpose of curtailing the number of successful applicants, a vast number of whom would have been eligible for train-

ing under the former lower requirements, and of limiting this preferred type to men of the highest possible educational and physical calibre.

October 15, 1931, marks the date of the geographical re-concentration of the Air Corps Training Center activities in San Antonio, Texas, and its environments, for it was on this date that the beautiful and permanent structures within the confines of the world's greatest flying field were first occupied. On this date the two Primary Flying Schools from Brooks Field and from March Field were consolidated and their airplanes, equipment and personnel moved to their new home at Randolph Field. From this move it is comparatively simple to obtain an accurate picture or cross section of the later day cadet student body, as all records beginning with this event are readily available. In consequence, all statistical data is commonly presented from this point.

The Flying Cadets are all young, unmarried citizens, between the ages of twenty and twenty-seven years inclusive, of good character, sound physique, and who have had at least two years of college work. If lacking the required educational credentials, they must demonstrate their proficiency by successfully passing examinations in United States History, English, General History, Geography, Higher Algebra, Geometry, Trigonometry, and Physics. The educational equation is simplified for many of these aspirants by their possession of diplomas and degrees from the country's many colleges and universities.

Professionally, these trainees - considering their youth - are from all walks of life. As a class, the civilian element is in preponderance; however, at times there is a liberal sprinkling of men with a military background. Geographically, all states in the United States are represented, with occasional applicants from the various foreign possessions. Students from foreign countries are frequently included in the student officer classification. This latter group approximates about twenty-five per cent of the entire enrollment. Their training is identical to that of the cadet, but they live and are administered separately.

During the interval embraced by the dates of October 15, 1931, and March 1, 1935, a total of 2,022 would-be pilots have reported to the Air Corps Primary Flying School. Of this number, 1,595, or approximately seventy-five per cent were Flying Cadets, and the

remaining 427 were student officers. The cadet increment was comprised of 1,355 civilians and 240 military men, while the 427 student officers were classified as 407 Regular Army officers and 20 foreign students coming from the following countries: 7 from Mexico; 2 Brazil, 2 Philippines, 3 China, 2 Turkey, and 1 each from the following countries: Germany, Guatemala, Cuba and Colombia.

Other factors relating to this group are interesting. For example: of the 2,022 entrants, 1,480, or 73 per cent were college graduates. Of this number, 1,042 were from the many colleges and universities of the country at large, while 398 were graduates from the U.S. Military Academy and 40 from the U.S. Naval Academy. Then, too, of the 2,002 who enrolled, exactly 950, or 46.9 per cent, completed the course and graduated from the Primary School at Randolph Field. The remaining 1,072 are accounted for as follows: 1,009 eliminated for flying or academic deficiencies, 58 resigned of their own volition, and 5 were killed. This final figure deserves especial consideration and is considered remarkable. It represents the infinitesimal percentage of less than one-half of one per cent of the total number graduated. When compared with similar statistics for training during the war period or with the peace time records of the schools of the armies of other nations, this small proportion is a monumental tribute to the efficiency of the Air Corps training methods.

The two classes now undergoing instruction are also very interesting. The present primary phase or entering class of October 15, 1935, is composed of 58 student officers and 92 Flying Cadets. Of the former, six are older officers of the permanent establishment, four are officers of foreign countries, and 48 are young second lieutenants who graduated from the Military Academy in June of 1935.

In the July class, or those on the Basic phase, there now remain 12 officers, all of the United States Army, and 50 Flying Cadets. The total personnel now undergoing instruction in both classes is made up of 70 officers and 142 cadets. A detailed study of the latter discloses the following facts. The 142 men from civilian pursuits attended 89 leading colleges and universities of the Nation. There are seven representatives from the University of California, four each from the institutions of Idaho, Minnesota, Tennessee, and the Idaho State College and the remainder from other leading educational centers. Seventy-three, or approximately 50% of these 142, are graduates, while the remainder, except for two who took the entrance examination, had the prescribed minimum of two years' college

work. As to geographical distribution, there are thirty-seven states represented; California leads with 24, Texas has 11, Washington 8, and Pennsylvania and Minnesota 7 each.

In reply to the question regarding the future of the trainee, this answer can be made: First, practically all who finish at the Primary Flying School graduate four months later from the Advanced Flying School. Following that, the American officers are assigned to Air Corps stations for duty with tactical troops. Their career in the service was definitely established previously; now they are but committed to the Air Corps as the branch of their choice. Second, the Flying Cadet is also assigned to a tactical unit where - still as a cadet - he obtains an additional year of seasoning and experience. This is followed by a year, or perhaps two, of active duty as a second lieutenant in the Air Corps Reserve. Upon completion of this period, he reverts to his former civilian status, but he may and can maintain active contact with the Service through membership in the National Guard or Organized Reserves. Third, as a civilian with this wealth of flying experience behind him, he is in a favorable position to seek employment with a commercial aviation company. Then, too, there is the recent possibility of securing a permanent commission in the Air Corps.

As an additional reward for the time devoted to aviation, the Flying Cadet has the consolation of knowing that he has fulfilled his youthful ambition - to fly; that he has received the best training in the world, an intensified schooling that would cost him a fortune to procure from outside sources if it could be duplicated; and, further, that he has been given other emoluments while receiving free this unusual training. He must also realize that he is one of the four hundred persons selected by his Government annually from the enormously interested collegiate group to receive this expansive military flying education.

The time spent by the flying cadet in his favored occupation is not wasted. As a preferred individual, the thrill and exhilaration of aviation as a sport is ample compensation for the two or three years devoted to the Service. Also, during this period of his life, while he is gainfully occupied preparing himself for a career, many of his associates are idle or are aimlessly busied with nondescript tasks at mediocre salaries. Then, too, while mastering the elusive and exclusive art of flying, he is molding his character and developing qualities of personality that make for better citizenship through his contact with the disciplined orderliness of military life. The statement that the time devoted by the trainee to his training as a military pilot is "spent" is a misnomer as, on the contrary, it represents an "investment" in a probable future career.

THE WEST POINTER AT THE WEST POINT OF THE AIR

By 2nd Lieut. Jack W. Hickman, Air Corps (CE)

Former Executive Staff Editor - "The Pointer" - '35

To those uninitiated we want to say right here that the A.C.T.C. is not another bureau for giving loans to farms. Rather it is the institution that makes flyers out of farmers - the Air Corps Training Center. Another common misconception is that Randolph Field and the A.C.T.C. are synonymous. Randolph is but one-half of the entire picture. It houses the Primary and Basic phases of the training. The advanced course is carried on at Kelly Field on the other side of town. Both fields are under the command of one general officer. Each in turn has its own commandant and staff of instructors. And then, of course, over all is felt the lightly benevolent influence of the Eighth Corps Area. But enough of these administrative details. Suffice it to say that there are plenty of people looking after the affairs and welfares of the student officers.

And so we pass to life at Randolph. The new class reports about the middle of September. From then until the middle of October duties consist mainly of initialing the bulletin board once each day. The remaining twenty-three hours and fifty-nine minutes are the individual's responsibility. The social whirl is terrific. It seems that the sight of fifty spanking-new, able-bodied second lieutenants makes any hostess go berserk. The latchstring at Fort Sam Houston is always out. At Randolph the usual rounds of handshakes and shindigs are in order. With a view of giving a bit of practical training, most young officers find themselves attached to a squadron for troop duty. These morning conferences with a kindly C.O. are invaluable when it comes to picking up lessons about mess, supply and paper work.

During the afternoon most men devote themselves to some form of voluntary athletics. This takes the form of a bitterly contested kitten-ball game, a set or two on the tennis courts, a battle of strikes and spares on the local bowling alleys, a red hot ping pong series, or even a rubber of raucous bridge barring no "holts." The average officer finds this month the best part of his graduation leave. The surroundings are ideal. The post is the most beautiful and well appointed in the Army. The Air Corps has a justified reputation of free-and-easy hospitality. San Antonio is a delightfully friendly

city, combining the charm of the old South with the dash of dusky Mexico and the modernism of the West.

And then came the dawn! Late in October on a clear, cheerful Texas Monday morning, the student takes his first ride in a PT-3. He climbs to a thousand feet and sees his home from the air and traces the Austin road into San Antonio. He splashes thru his first sloppy turn. From now on, it's early to bed and early to rise makes one healthy, wealthy, and solo. Along with two hours of flying there is an equal amount of ground school each day. The courses are in the main a bit of specialization on the West Point academics. While at Randolph, one studies Engines, Carter's Aerodynamics, Navigation, Gunnery, Maps, Meteorology, Buzzer, and Equipment of the Pilot. These may sound difficult, but a half-hour each day will keep the average student officer properly prepared and proficient.

Of course, from the first day everyone thinks of but a single topic - flying. During the first or second week in November the all-absorbing topic of conversation is the first solo. Some morning after a particularly rough landing, the instructor clambers out of the ship and says, "Well, you can't do any worse alone." The fledgling gulps twice and gives her the gun. At four hundred feet he wiggles the stick a couple of times, tentatively, just to see if the ship recognizes him. A few turns and he glides in to a breathlessly happy landing. The solo is successfully accomplished! That alone has been sufficient recompense for hours of study and training. If a "washing out" takes place next week, the solo has made it all worthwhile.

From the Primary Stage, the fortunate few making the grade move across the field for basic training. Here the stress is laid on more difficult phases of flying - blind flying, radio, night flying, formation, and strange field landings. A bit more of selective culling and the two hundred-hour wonders are ready for Kelly Field and the Advanced School. The student officer is given an opportunity to specialize in his favorite branch of flying - be it Pursuit, Observation, Bombing or Attack. There is no excuse for washing out of this school. The ground school is no more extensive than before. The flying can be mastered by anyone who has satisfactorily finish-

ed Randolph and continues to apply himself.

And so comes October week and graduation. There is the same old lump in the throat and throb in the handclasp that every West Pointer felt at his

last graduation. The class passes in review - formation flying. The speeches are said. The wings are pinned. It is goodbye to the West Point of the Air, San Antonio, and Texas. It is hello to the Air Corps.

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ITALIAN CONSUL ADDRESSES NATIONAL GUARD AVIATION OFFICERS

"Well, you know better than me."

Several times he repeated this remark in his broken Italian-American tongue, and each time with a characteristic wave of his hands.

Francesco Parenti, an Italian pilot in Admiral Balbo's air corps, recently gave a talk to officers of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane. Pilot Parenti is now the Italian Consul in Seattle, Wash., and was a guest speaker before the officers. The officers knew what the Consul meant by his remark because, the Consul, unlike his listeners, is not active in aviation today and, therefore, is not acquainted with the latest aeronautical developments. However, his remark "you know better than me," left the pilots thinking, after Mr. Parenti had told how there are today in Italy 15,000 trained pilots, all subject to more or less jurisdiction by the Italian high air command.

In a modest manner, and with a soft voice, Mr. Parenti, assisted in pronouncing some English words by Attorney Joe Albi, Spokane Italian Consul, told how commercial air line pilots meet weekly with the Italian air forces for discussions of military aviation problems and latest developments.

"Three months each year," said Mr. Parenti, "these pilots not in the regular air corps are called into active training. Italy is constantly training new pilots. Some are taken as young as 17 years and become pilots, although not regular commissioned officers.

All commercial aviation in Italy comes under the jurisdiction of the Italian air command. All commercial pilots are former Army Air Corps pilots."

The speaker refrained from any mention of the present conflict between his country and Ethiopia, coming nearest to this topic as he walked to a map to illustrate why Italy does not believe it necessary to build naval airplane carriers.

"The nature and amount of our coast line does not seem to make carriers necessary," he explained.

He gave credit for the strength of the Italian air force to Premier Mussolini, "who became a licensed pilot in 1922."

"All high political officials in Italy are licensed pilots," he added, leaving the very good inference as to

the reason why Italy's air force has gone ahead so rapidly. "Italy has three airplane factories which, while operated commercially, are subject to dictation by the Italian air command. These factories can turn out airplanes very rapidly."

Several times during his remarks, Mr. Parenti spoke most favorably about Bombardment airplanes, mentioning discussions he had heard about Bombardment airplanes flying from Italy to London and return.

"The American airplane, I like it very much," he said. "It seems so strong, and 'architecturally' correct. Italy has not experimented with American-made airplanes. Our motors are not like yours. Italy has made some fine aviation records. And America has made some too."

"Well, you know better than me."

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A flight of four planes represented the Primary Flying School at the Air Force maneuvers and Air Races at Miami, Fla., the week ending December 14th. Officers making the trip were: Captains Turner, Weikert, Lieuts. O'Neal, Alkire and Fulton. "These officers," says the News Letter correspondent, "reported that they enjoyed the maneuvers but were glad to be home where the weather isn't so cold and the sunshine spends the winter."

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The School of Aviation Medicine, Randolph Field, Texas, graduated a class of ten new Flight Surgeons on December 14th. This class included one medical officer from the Mexican Army, Major R.T. Prieto, and two medical officers from the United States Navy, Lieut. (JG) David C. Gaede and Lieut. (JG) Anselm C. Hohn.

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Despite the heavy rains in the Philippines which prevailed throughout the first quarter, a great deal of flying has been carried on by the Third Pursuit Squadron, stationed at Clark Field. Particular attention is being paid to blind flying training. One O-19C airplane, which the Squadron has available for this purpose, is being kept constantly in use.

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Special Orders of the War Department announce the relief of Captain George C. McDonald from duty in the Office of the Chief of the Air Corps, effective Feb. 13, 1935, and his assignment to the 97th Observation Squadron, Mitchel Field, N.Y. Our best wishes, Captain, but we are sorry to see you go and we'll certainly miss you.

APPOINTMENT AS FLYING CADET

EARLY one morning in December, a squadron of planes took off from Hamilton Field, one of the Army Air Corps stations in California, for the air maneuvers being held that year in Miami, Florida.

A young lad, setting out on his early morning chores on his father's ranch in Arizona, hearing the zoom of the motors looked skyward, and as his glance followed the formation winging its way east, he wished he could afford a course in flying. A few hours later, as the planes soared high over one of the many college towns in the great southwest, a young student, crossing the campus, stopped to watch the flight and wondered if after graduation he might be able to take up flying as a career. Still later at an Air Corps field in one of the southern States, as the planes circled in for a landing, a young soldier in his first enlistment watched, and as the pilots crawled out of the cockpits determined that some day he would wear the wings that meant he too could pilot an Army plane on some such mission.

The boy in Arizona was twenty years of age and had completed his second year at the State University, but because of depression finances was unable to continue his schooling. The boy in the college town was in his senior year, and the young soldier had completed high school and was definitely interested in mechanics.

To each of these boys and many more like them, energetic, ambitious young Americans, the Army Air Corps offers a splendid opportunity to learn to fly at Government expense. The training covers a period of two years, one year at the Air Corps Training Center, Randolph Field, Texas, sometimes called the "West Point of the Air," and one year training with a tactical unit of the Air Corps. At the end of the two years, the student has had approximately 550 hours in the air.

This training is given those candidates who qualify under the prescribed regulations for appointment as Flying Cadet. The candidate qualified and accepted for appointment is enlisted, or in the case of enlisted candidates, appointed a Flying Cadet and receives a base salary of \$75.00 a month while undergoing training. His ration allowance is one dollar per day and he is furnished uniforms and equipment without cost.

Information pertaining to the training, the general requirements and the procedure to be followed in submitting application may be obtained readily at no cost. The lad in Arizona may write to The Adjutant General of the Army or the Chief of the Air Corps, Washington,

D.C.; the boy in the college town may apply to his Professor of Military Science and Tactics; the enlisted man may talk it over with his commanding officer. But each one has the same opportunity of qualifying for appointment as Flying Cadet and being sent to Randolph Field for the course of training that has developed some of the finest airplane pilots in the world.

Upon receiving the little pamphlet issued by the War Department concerning the training, the candidate will find that to be eligible for appointment he must be not less than twenty years of age and not more than twenty-six at time of application. Existing regulations preclude the appointment of candidates after they have reached their twenty-seventh birthday. He must also be unmarried, a citizen of the United States, in good physical condition and have completed satisfactorily at least two years of college work or have sufficient education to pass a written examination in lieu thereof. Satisfactory completion means an average grade of at least "C."

If he feels that he meets these general requirements, the candidate should complete the necessary application forms for appointment, which may be obtained from The Adjutant General of the Army or the Chief of the Air Corps, taking care that each item is properly and carefully answered, the affidavit certified to, and the necessary letters of recommendation and scholastic evidence attached. Then, after sending the completed application to The Adjutant General of the Army, he will wait about two weeks before receiving authorization to communicate with the Flying Cadet Examining Board nearest him as to the date he is to report for examination.

The Flying Cadet Examining Boards are located at practically all Air Corps stations and at a limited number of other Army stations where the equipment for giving the physical examination for flying is available. A board is generally composed of at least three Air Corps officers and one Medical officer - the Flight Surgeon. Examinations of those candidates required to take the written educational examination are held three times a year, generally the second Tuesday in April, August and December. Examinations of all other candidates can be held on any convenient date.

As candidates are required to pay all expenses incident to reporting for examination, such as the transportation involved and the money expended for food and lodging during the period of the examination, which is from one to three days, each candidate, in order to avoid unnecessary expense, should, before reporting for examination, be reasonably sure that he is in excellent physical condition and that he either has the required college work

for exemption or is prepared to take the written examination in lieu thereof.

The Examining Boards often advise a candidate to have a physical check by his family physician before reporting in order to determine whether he has any defect which would definitely disqualify him for the training or a temporary defect such as diseased tonsils, nasal obstruction, defective dentition, etc., which are correctable and should be so corrected before he could be considered qualified under the rigid physical requirements for the flying training.

Those candidates claiming exemption from the written examination should be able to present a statement from the Dean or Registrar of an accredited college that they have completed one-half or more of the necessary credits leading to a degree at that institution normally requiring four years' work. Unless a candidate can present this statement, exemption from the written examination can not be granted him. By accredited college, the War Department means those colleges recognized or accredited by the several National and Regional Educational Associations. If a candidate is in doubt as to the standing of his college, information may in all probability be obtained from his State University or his State Department of Education as to whether or not his college appears on the list. Often a candidate is attending or has graduated from an institution that is a specialized one of its kind, and while giving a very good and intensive course in its specialty is not included on the accredited list. In such cases, if the applicant is able to obtain a certificate from his State University or other accredited college that his credits will be acceptable for full junior standing, consideration may be given his request for exemption. The high school graduate and the man with one year of college work may take the written educational examination. As this examination is given only three times a year, a candidate has sufficient time to study up on the subjects required, either by himself or with some good correspondence school or preparatory school in his vicinity. Failure in one educational examination does not preclude the candidate from taking the examination again, if he so desires. However, as the course in training comprises, in addition to flying, certain ground-school subjects, such as navigation, meteorology, aerodynamics, etc., an applicant should have at least a high school education and should have a good basic education in mathematics and physics.

When the candidate appears before the Examining Board for examination on the date authorized (which in the case of those exempt from the written examina-

tion is generally within one to two months of submission of application), he first appears before the medical officers for the physical examination. If found to have any major defect which is definitely disqualifying for flying, the rest of the examination is not given.

The physical examination is comprehensive and thorough, and covers just about everything. Of course, special attention is given to those items of particular importance in aviation - vision, hearing and a stable nervous system. Many a candidate who would make good in ordinary pursuits falls down on the physical examination for flying; many a college athlete, who looks a specimen of perfect young manhood physically, is found to have a blood pressure a little too high, or a heart that over-training has made unfit for the intensive strain and stress of flying training. The fortunate candidates, generally about forty percent of those applying, who pass the physical inspection by the Board, are then given the rest of the examination. Those required to take the written examination spend the remainder of the time, with appropriate periods for rest and relaxation, answering the questions in the nine different subjects prescribed for the examination. And a man who passes this examination has accomplished something. The men not required to take the written examination appear before the members of the Examining Board and are subjected to such an interview as would be given any young man applying for an important position with a responsible firm.

After the candidate has completed the prescribed examinations, he returns to his home to await further word from the Chief of the Air Corps as to whether or not he has been found qualified for appointment. All examinations, physical as well as educational, are subject to review in the Office of the Chief of the Air Corps. There is a great deal of paper work connected with the examinations, and it may be from four to six weeks, especially in the case of those candidates taking the educational examination, before final action as to qualification can be taken.

Notification is sent to each candidate of the outcome of his examination and, if found disqualified for appointment, the letters of recommendation and scholastic evidence furnished with his application are returned to him. All papers of qualified candidates are retained in the office of the Chief of the Air Corps and they are notified that they have been found qualified for appointment and their names placed on the eligible list for assignment to school for training.

Classes in training start three times a year, generally the first of March, the first of July and the fifteenth of October. Normally, the quota for the March

and July classes is 150 Cadets, and for the October class, 75. The October class is limited because of the number of West Point graduates of the preceding June class who have qualified for and been detailed to take the training.

About six weeks prior to the commencement of a class, selection is made from the eligible list of the quota to be assigned to that class, and each candidate selected is notified promptly in order that he may make the necessary arrangements preliminary to reporting for training. Selection is made according to a priority prescribed by the War Department which must be followed when there are more qualified candidates than can be included in the quota allotted for each class. First priority is accorded enlisted men of the Regular Army and members of Air Corps units of the National Guard who have served a prescribed period. College graduates come next, then members of National Guard units other than Air Corps, and then those who have no military status and have not completed their college work. Although there are generally more qualified candidates than can be taken care of with existing facilities at the Training Center, present conditions permit the early assignment to school for training of practically all candidates who qualify.

Sometimes, because of illness, a desire to complete his college work, a contract that cannot be broken, or other personal reasons, a candidate is unable to accept appointment to the class for which selected. In such cases, upon request to the Chief of the Air Corps, postponement to a later class may be granted, and another candidate will be substituted in his place. In this connection, when a candidate has been on the eligible list for a period longer than six months, another physical examination for flying will be necessary before his enlistment as a Flying Cadet can be accomplished.

All arrangements for enlistment are made by the Recruiting Office nearest the applicant's residence. Transportation from place of enlistment to the school is furnished the candidate by the Recruiting Officer. Enlistments are made for a period of three years, but any Cadet found disqualified for further training is discharged and not required to serve the unexpired portion of his enlistment period. All enlistments are accomplished in sufficient time for the candidate to arrive at the Training Center on the date designated.

And on that date, pouring into Randolph Field by train, by automobile, on foot, even perhaps in their own planes, as did Lindbergh over ten years ago, come these young men to earn after one-year's intensive training the wings that proclaim them airplane pilots in

the Army of the United States.

And after this year at the school, and a second year training with a tactical unit at an Air Corps station, in Pursuit, Bombardment, Attack, or Observation, these men who have completed the course of training are equipped to enter the aviation world as qualified military pilots. Recognized as products of one of the finest training systems in the country, some will enter the employ of various commercial transport lines; some more interested in the manufacturing and engineering phase of aviation will obtain positions with the leading airplane manufacturing companies; some will enter into the experimental and research fields for the great amount of work which remains to be done to make flying safer; while still others, having grown to love the Army life during their two years of service, will plan to make Army flying their career and will qualify for appointment as a second lieutenant in the Army Air Corps and, perhaps, in a few years be back at the Training Center instructing the young Flying Cadets then entering how to fly in the Army way.

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A. CORRECTION

In connection with the article on the "First Gordon-Bennett Balloon Cup Race," which appeared in the issue of the News Letter of December 1, 1935, it is regretted that an error was made in giving the name of Colonel Frank P. Lahm as the author of this story. As a matter of fact, this story was written by Colonel Lahm's father, the late Mr. F.S. Lahm, who died in Paris towards the end of the year 1931, just at the beginning of Colonel Lahm's tour as Assistant Military Attache at the American Embassy in the French Capital. Colonel Lahm merely added some few details to the above-mentioned story with which his father could not have been familiar.

This story is one of many which Colonel Lahm's father wrote during his last years. He became interested in aeronautics in Paris about 1901 or 1902, when he made his first balloon ascension. During the World War he was offered a commission in the aviation service of the American Army for duty in the Lighter-than-Air Branch. He declined the commission, but served in the office of the Chief as a civilian, although over 70 years of age.

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The Third Attack Group, Barksdale Field, La., has had three A-12's equipped with SCR-76 Liaison Sets, and extensive tests were made at that station for the first ten days of November under the supervision of Captain Wallace Smith, Air Corps, Materiel Division representative. The planes were then flown to Wright Field for further tests at the Materiel Division.

GLOSSARY OF SLANG EXPRESSIONS AND TERMS USED BY THE TRAINEES
AT THE AIR CORPS TRAINING CENTER

The Flying Cadet organization at the Air Corps Training Center, although comparatively young in years, is already surrounded by a flying tradition rich in idiomatic expressions and aeronautical slang. Several of these cryptic words and phrases are a heritage from the wartime training era, but the majority are products of the present centralized training system inaugurated at the opening of Randolph Field.

The beginning of each new class at the Primary Flying School is marked by a period of strange activity in the Cadet Area. Judging from the frantic antics of its most recent occupants and the weird noises that emanate from their barracks in the early evenings, one would imagine that a miniature Babel was in the process of painful construction. However, there is no cause for alarm, as the strange sounds and queer sights are but the by-product of the high pressure induction of the new "Dodo" into cadet life.

To the older graduates who have unintentionally forgotten and to the youngsters who may wish to forget, the following tabulation is dedicated:

Around the ramp: At this command all Dodos run around the paved area in front of the barracks.

Around the third step: At this command the Dodos run to the end of the barracks, climb to the third floor, run to the opposite end of the building and descend to the ground floor, returning to their original position.

Bail out: At this command the Dodo makes a motion as though he were pulling his ripcord, extends his arms straight in front of him and assumes a position midway between a standing position and on his haunches.

Brace: An exaggerated position of attention.

Bruss: An exaggerated brace.

Blowers: The name by which "B" Company is designated by the "A" Company misters.

High Pockets: The name by which "A" Company is designated by the "B" Company misters.

Cadet Widow: Is a name applied to a young lady who has known Flying Cadets for several years.

Dawn patrolling: One is said to be dawn patrolling when he arises before reveille.

Dodo: The name given to a lower classman which he retains until he is promoted to the upper class.

Dodo Tom: The name given to the "B" Company janitor because he is new at the job, having been with the Company for only 14 years.

Duck, you Dodos: Is the command given when an airplane flies over real low, at which time the Dodos have to get down and place their heads upon the ground.

Double reclining rest: A command permitting the Dodos to sit down.

Falling down rest: At this command the Dodo must lie down on the floor.

Flying the Night Mail to Seguin: The name given to the act of the Dodos forming in the shape of an airplane and pretending to fly.

Get eager: To strive to the utmost.

Gig: The popular name for a demerit.

Kiwi: A non-flying commissioned officer of the Air Corps.

You're giggered: Means that one has been reported for violating a rule or regulation.

Gun: To gun anything is to have a waiter get it.

Gunner: One of the two Dodos that sit at the end of the tables in the mess hall and see that all the dishes on the table are full at all times.

Hit those doors: A command for the Dodos to get out of their rooms and in a big hurry.

H.P.: Hot Pilot - One who is exceptionally good.

Rats: Rolls or balls of lint and dirt that accumulate upon the floor; most noticeable when standing at attention during an inspection of quarters.

Mice: Little rats.

Mister: Formal title employed when addressing other cadets, especially Dodos.

Poetry night: Thursday night when each Dodo has to have a poem of his own creation. On this particular night the Dodos can say anything they like in their poems.

Position of a dodo bird: A position on one's haunches with the arms extended in a horizontal position and straight out from the body.

Pop it out: An expression meaning to expand one's chest to the limit.

Power Birds of War: A name given to all Flying Cadets.

Push button pilots: A name given to all who regularly fly the PT-11's, a training plane much easier to fly than the other primary types.

Reck Hall: The name given to the Flying Cadet recreation hall.

Raunchy: A name applied to anything that is dirty or in bad shape.

Reaction time: The amount of time it takes for one to come to attention when an upper classman steps before him.

Shoot: Go ahead and talk.

Sound off: To tell where one is from, where he went to school, the athletics participated in; the fraternity, if any; previous military experience; previous stick time, and for what he is famous.

Snap to: To come to attention.

Spin in: To fall down or get excited.

Storm: Name applied to the condition one is in when he is excited and doesn't know what he is doing.

Serious: Anything that is important.

Seriass: Anything that is unimportant.

The Gray Ghost: The Stage Commander's airplane because it is the last plane one rides in before being washed out.

Take-off: To leave any place at a high rate of speed.

Theory of Flight: Meaning Theory of Flight.

Up and down: To run.

What the horrible hell: An expression of great surprise.

Wash out: To be eliminated, or one who has been eliminated from the Flying Cadet Detachment.

The Washing Machine: The Flight Commander's airplane.

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CONTRACTS FOR NEW AIRPLANES

The Assistant Secretary of War, Hon. Harry H. Woodring, recently announced the award of a contract for 100 Attack airplanes and for spare parts equivalent to 15 airplanes to the Northrup Corporation, Inglewood, Calif., in the total amount of \$2,560,074.00, also a contract for the procurement of 90 Bombardment airplanes to the Douglas Aircraft Company, Santa Monica, Calif., at a total cost of \$6,498,000.00. Of these 90 Bombers, 82 are to be delivered, by flight, to tactical units, and the remaining eight to Air Corps depots as spare parts.

Announcement was also made of the purchase of one squadron of four-motored Bombers, consisting of thirteen planes of the latest design as submitted by the Boeing Company of Seattle, Washington. The manufacture of these planes will be undertaken at once.

In accordance with the established practice of the War Department, the airplanes for which the awards were given have been thoroughly tested by the Air Corps Materiel Division at Wright Field, Dayton, Ohio.

The Northrup Attack plane is of the all-metal, low-wing monoplane type with retractable landing gear. The airplane is as small as consistent with the loads to be carried and performance required, and is two-place and single engine. High speed and maneuverability are the pertinent characteristics.

The Douglas Bombardment airplane is also of the all-metal, low-wing monoplane type. It is powered with two "Cyclone" engines, and represents a marked advance over types of Bombardment planes now in service or being procured.

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SELFRIDGE PLANES RETURN FROM MIAMI

Six P-26A airplanes, with Captains Dixon M. Allison, John F. Egan, Daniel C. Doubleday and 2nd Lieuts. Eugene Brecht, Jr., William T. Hudnell and John O. Neal as pilots, arrived at Selfridge Field at 7:45 p.m., December 11th, just eleven hours after they had taken off from Miami, Florida, where they participated as a part of the 27th Pursuit Squadron in the Second Wing, GHQ Air Force, concentration. The return was made via Jacksonville, Fla.; Atlanta, Ga.; Nashville, Tenn., and Louisville, Ky. The remaining twenty-six P-26A airplanes and pilots of the 27th Pursuit Squadron participating in the concentration at Miami, including the flight led to Miami on December 5th by Colonel Royce, and

the transport piloted by Major McCormick and carrying four enlisted passengers, returned to the home station on the afternoon of December 16th.

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ONE TOUGH HOMERE

"Lo and behold!" says the News Letter Correspondent from France Field, Panama Canal Zone, "from one of our contemporaries of Albrook Field comes a miracle meant only for the Gods. It seems that a short time ago 1st Lieut. Albert W. Shepard exposed himself in such a manner as to be bitten by a Fer-de-Lance, one of the deadliest of snakes, the bite of which causes death in the estimated time of fifteen minutes.

But - may wonders never cease - the victim failed to die as is customary in such cases and, what's more, the effect was so slight that he was seen later on in the evening stepping out with some of Panama's elite, while the snake died of its own accord.

And now the personnel of Albrook Field may be seen strutting around with their chests out repeating "When tougher men are built, Albrook will build them."

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THE SCOTT FIELD AMATEUR RADIO STATION

Scott Field's amateur short wave radio station W9CJH is operated by Private Frank W. Brashears, of the 9th Airship Squadron. The station uses a crystal controlled set and operates on 3951 kilocycles for radiophone and on 3603 and 7206 kilocycles for code. The station is on the air from six to seven P.M. daily, and is anxious to communicate with other Army amateurs.

Station W9CJH was moved from New London, Mo., where it was operated for 13 years by Private Brashears, to Scott Field, Ill., in December, 1934. The station was a member of the now discontinued Army Amateur Net.

Private Brashears has a class of radio students which spends the evenings learning the code and picking up practical radio knowledge. Some of the former students have become members of the radio section of the airship crew.

The station has been operating for a year on 200 watts. It is hoped that it will soon be able to operate on 500 watts.

Although the station has continued holding communication with civilian amateurs of past acquaintance, it is very anxious to learn the broadcast schedules of other Army amateurs in the many other posts scattered throughout the United States and its dependencies.

HISTORY OF KELLY FIELD
By Captain James B. Burwell, Air Corps

SHORTLY after the United States declared war, in April, 1917, construction work was begun on an aviation camp about five miles southwest of San Antonio, Texas. In May, 1917, there were 25 officers and 4400 enlisted men, as well as a number of civilians, engaged in the construction of the field. On June 11, 1917, the aviation camp was designated "Camp Kelly" in General Orders, No. 32, Headquarters Southern Department, Fort Sam Houston, Texas, and on July 30, 1917, the camp was designated "Kelly Field" by General Orders No. 49, Headquarters Southern Department, Fort Sam Houston, Texas. The field was named by Major-General James Parker, National Army, in honor of 2nd Lieut. George E.M. Kelly, 30th Infantry, who lost his life in line of duty in the Aviation Service at San Antonio, Texas, May 10, 1911. Lieut. Kelly was the second United States Army officer to be killed in an accident to military aircraft.

Lt. Kelly was born in London, England, December 14, 1878, came to the United States in 1896, and enlisted in the 84th Company, Coast Artillery Corps, on January 14, 1904. Two years later, he passed the examination at Fort Leavenworth, Kansas, for commission, received appointment as a second lieutenant and was assigned to the 30th Infantry in January, 1907. He went to the Philippine Islands with the 30th Infantry in July, 1907, where for a year he was on topographical survey missions on the Island of Luzon. He left the Philippines in July, 1909, and, after visiting China, traveled through the Suez Canal to England, where he observed the British Army Maneuvers in the fall of 1909, returning to the United States in December of that year to rejoin the 30th Infantry in San Francisco. His battalion, under the command of Major J.P. O'Neil, attended an aviation meet at Selfridge Field, where Lt. Kelly took several aerial photographs. In February, 1911, he was detailed by the War Department to proceed to San Diego to take instruction in aviation under Glenn H. Curtiss. A few months later he brought one of the first airplanes owned by the Army to Fort Sam Houston, Texas, where on May 11, 1911, he was killed in an airplane accident. He was buried in the National Cemetery on East Commerce Street, San Antonio, May 15, 1911. The honorary pall bearers were Lts. Paul W. Beck, B.D. Foulis, John C. Walker, Fred G. Test, Horace M. Hickam, and O.O. Ellis.

Lieut. Kelly's family, which still resided in Ireland, was notified that

Kelly Field had been named in his honor. Mrs. May Bell-Kingsley, of County Tipperary, under date of September 14, 1917, wrote on behalf of the family, the following letter of appreciation to Major-General Parker:

"Sir: I wish to offer you in union with my family my deep and grateful sense of the abiding memorial you have lately initiated of my dear nephew; Lt. Maurice Kelly's self-sacrificing act at Camp San Antonio. As the widow and mother of soldiers I realize the significance of this noble and soldier-like testimony to a brave man, and I am sure your gallant American Army will appreciate it, and learn that a heroic action is not confined to one age but is a lesson for all time. Pray accept this very imperfect appreciation of your just and generous action.

"I have the honor to be, Sir, your obedient servant,

May Bell-Kingsley."

General Parker replied in part as follows:

"**We were all very fond of Lieutenant Kelly. I was present in the Camp at San Antonio when he was killed and attended his funeral. He was buried in the picturesque little national cemetery reserved for officers and men of the United States Army on the outskirts of San Antonio in the park reserved for officers. He was one of the first heroes of our military aviation service who lost their lives in the service of their country. He lost it in a heroic way and his memory is cherished among us. As Commander of the Department of Texas, I was very glad to have the opportunity of naming this great aviation field of twelve thousand men, the largest I think in the United States, after Lieutenant Kelly.**"

Very sincerely yours,

James Parker, Major General, N.A."

The original letters quoted above were contributed to Kelly Field by Mrs. Ronald T. Tyman of Waltham, Massachusetts, the daughter of General Parker, who located them among the personal effects of her father after his death.

By December, 1917, there were over 1100 officers and 31,000 enlisted men at Kelly Field. At that time individuals were being trained to form the nucleus for several other aviation establishments being begun at that time.

Cadets began to arrive in January, 1918, when 593 were undergoing training. As the aviation training activities increased and the other fields became established, fewer enlisted men were undergoing training at Kelly Field, and by October, 1918, there were 680 officers, 17,000 enlisted men, and 363 cadets present at the field.

After the Armistice, many changes were made while the field was being placed on a peace-time status. General Orders No. 112, War Department, dated September 15, 1919, titled "Military Education in the Army", ordered the establishment of Army schools; such as post, unit, special and general service schools; and General Orders No. 7, War Department, dated January 30, 1920, designated two schools for the Air Service: "Air Service Pilots School", at March Field, California, and Carlstrom Field, Florida; the object being to standardize instruction and training of the officers in the tactics and technique of this arm of the service. In March, 1920, General Orders No. 18, War Department, designated Kelly Field as the Air Service Mechanics School.

In January, 1921, the following organizations were at Kelly Field: First Wing, consisting of 2nd Air Park, 5th Air Park, First Day Bombardment Group, and First Pursuit Group. In February of that year, the First Day Bombardment Group was redesignated the Second Bombardment Group, and in June the First Pursuit Group was transferred from Kelly Field to Ellington Field. In July, the First Surveillance Group was transferred to Kelly Field, Flight "A", coming from Fort Bliss and Flight "E" from Maria, Texas. In September, the Third Attack Group was organized at Kelly Field and consisted of the 60th Service Squadron, the 8th, 90th, 13th, and 26th Attack Squadrons, and the 16th Photo Section.

In June, 1922, the 10th School Group was organized at Kelly Field, consisting of the 39th, 40th, 41st 42nd and 43rd School Squadrons, the 13th Air Park, the 22nd Photo Section, and the 10th Group Detachment, the Second Bombardment Group being transferred to Langley Field, Virginia. On September 30th, Kelly Field was designated a permanent military flying field by War Department General Orders No. 59.

Comparatively few changes occurred until January, 1926, when Kelly Field was reorganized into the Air Service Advanced Flying School, in accordance with Personnel Orders No. 306, War Department, Office of the Chief of Air Service. The School was divided into the School Headquarters, the Academic Division, the School Troop Division, and the Services. The Third Attack Group, consisting of 18 officers and 341 enlisted men, was transferred to Fort Crockett, Texas, on June 30, 1926.

On August 1, 1927, the 24th School Wing was organized, consisting of the Tenth School Group at Kelly Field, the Eleventh School Group at Brooks Field, and the Thirteenth School Group at March Field.

Except for changing the name of the school to the Air Corps Advanced Flying School, few changes occurred until July 15, 1931, when the Tenth School Group and Tenth School Group Headquarters,

less the component units, were demobilized.

In October, 1931, the 24th School Wing was transferred to the Air Corps Training Center, Randolph Field, Texas.

The organization of the Advanced Flying School remained practically the same until March 1, 1935, when a reorganization established the following units at Kelly Field: ACAFS Detachment; 22nd Photo Section; 39th Observation Squadron (C & A); 40th Attack Squadron; 41st Observation Squadron (LR Amph); 42nd Bombardment Squadron; 43rd Pursuit Squadron; 68th Service Squadron, and 81st Service Squadron. The underscored organizations have been detached from the GHQ Air Force and are on temporary duty at this field in connection with student training.

TRAINING

Since the reorganization of Kelly Field into the Air Service Advanced Flying School, which occurred in June, 1922, there have been in effect two general systems of instruction. During the use of the first system, students received both basic and specialized training at the Advanced Flying School. Basic training was given by means of the stage system of instruction, the principal stages being dual, solo, accuracy, hurdles, eights, 180- and 360-degree turns, performance, night flying, cross-country, formation, etc. After about twelve weeks had been devoted to basic training, students were divided into sections for about ten weeks of specialized training in attack, bombardment, observation, or pursuit. Two classes were graduated annually, each spending approximately six months at the Advanced Flying School.

The majority of classes under this system of training used airplanes of war-time design, consisting principally of DH4B's, MB3A's, SE-5's and NBS-1's. Before this system of training was discontinued, O1's, O2's, AT-4's, AT-5's and O2-H's were also being used. Due to a temporary shortage of airplanes of a given type, it was sometimes necessary to suspend specialized training for that branch of aviation.

Ten classes were graduated under this system of training. The first entered on July 15, 1922, and the last graduated in February 1928. A total of 865 students entered during this time, of whom 16 were killed, 26 were held over for instruction in the class to follow, 276 were eliminated for deficiencies in flying, 67 were eliminated for other causes, and 480 were graduated.

In March, 1928, a new plan of training was adopted as a part of a five-year program initiated for the purpose of graduating and commissioning more students from the flying school. This plan is known as the "B" system of training, under which only advanced or specialized training is given at the Advanced Flying School. This training closely resembles

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the specialized training given under the old system of instruction, and requires an average of four months per class for its completion. Instrument flying for a nucleus of instructors was initiated in 1930. No. 7-B (March to June, 1930) received some instruction therein but, due to equipment delays and difficulties all members of the class did not get the full course. Class No. 8-P (July to October, 1930) received the full course in instrument flying.

The airplanes used at the present time are A3B's for attack; B3A's and B5A's for bombardment; O-19's and O-25's for observation; P-1's, P-12B's and P-12D's for pursuit; and BT's for instrument flying.

Twenty-three classes have graduated under the "B" system of training, during which a total of 2051 students have entered, of whom 38 were killed, 63 held over for instruction in the class to follow, 3 eliminated for deficiencies in flying, 23 eliminated for other causes, and 1924 graduated. The average size of the classes entering under this system has been 89 students as compared to 86 under the old system.

An interesting comparison of the results of the two systems of training is obtained by reducing the number killed, held over, eliminated, and graduated under each system to a percentage basis:

System of Training	Students Entering	% Killed	% Held Over	% Flying Eliminations	% Other Eliminations	% Graduated	No. Graduated
1922-28 (old)	865	1.8	3.0	31.9	7.8	55.5	480
1928-35 (new)	2051	1.85	3.1	0.15	1.1	93.8	1924

The difference between the eliminations under the old and the new systems of training, as listed in the above table, is principally due to the fact that basic instruction was discontinued at the Advanced Flying School with the beginning of the new system of training. A considerable portion of the improvement, however, is due to higher entrance requirements, better equipment and methods of instruction, and additions to the courses given.

Ground training has kept pace with flying training. Methods of instruction have been improved and now include the use of sound motion-picture film. Subject matter has been continually improved and courses added; technical and theoretical subjects have been reduced and practical instruction that the student must apply immediately upon graduation has been substituted. For example: the courses in bombs, explosives, and radio theory have been reduced, while the time devoted to instruction in squadron duties of junior officers has been more than doubled.

Since the standard for entrance to the Primary School has been raised to a minimum of two years' college education, or the equivalent, very few of the students have any difficulty in satisfactorily completing the ground-school course.

Lectures on the new developments in materiel and equipment, and on the GHQ Air Force, are given each class in order to acquaint the students with the latest developments of the Air Corps.

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WORK COMPLETED ON CENTRAL AMERICAN BOUNDARY SURVEY

By Lieut. J.D. Underhill, Air Corps

Ten months of tedious work on the Central American boundary survey was recently brought to a close. This work was undertaken by the 12th Photo Section, France Field, Panama Canal Zone. Last January, Major Willis R. Taylor, Air Corps, accompanied by Sergeant Edwards, departed for Salvador, Central America. Their task consisted of three separate jobs; an aerial survey of the boundary between Guatemala and El Salvador, one of the Special Boundary Tribunal of Guatemala and Honduras, and a survey of a common zone to all three countries. Because of the excellent weather and flying conditions, the job was flown in the remarkably short time of eight days. The men back at the photo section did more than their bit by working day and night to develop the films and return test

prints by air mail to Major Taylor.

To photograph the whole project, it took 600 miles of flying over very rugged and mountainous country. Approximately 1400 exposures were required to cover the 482 photo miles flown. To complete the project, 17,104 actual prints were made, not including 800 testprints.

Mr. Sidney H. Birdseye, Comision Tecnica de Demarcacion de Chiguimula, Guatemala, who is handling the ground survey, paid the 12th Photo Section a visit shortly after the project was flown. It was a pleasure to work with him and his brother, Mr. C.H. Birdseye, Chief of the Division of Engraving and Printing in Washington, on such an important mission.

The work was interesting and provided valuable experience to all concerned.

RANDOLPH FIELD AS I SAW IT
By 2nd Lieut. John A. Way, Air Reserve.

RANDOLPH Field is the goal of almost every air-minded youngster whose ambition is flying. They see Randolph Field in their dreams of flying and of becoming one of the Army Air Corps pilots. To a selected few this dream comes true - in my case it did.

I was in the second class to begin training at Randolph Field, the "West Point of the Air." No sooner had I arrived at the gates than the reason of that title was made clear to me. As well as learning to fly there were other things to be learned, and the first of these was discipline. For the first two weeks we did close order drill for fifty minutes out of every hour, with a ten-minute rest period, for ten hours a day. We were each issued an Army model Springfield rifle - I began to wonder - was I in the right branch to learn to fly? For those first two weeks we didn't see an airplane. It was explained to us that we were to be put in condition before we started our flight training. By the time that period of training was over we were almost fit to meet a Sullivan!

We were issued our clothing, which had to be folded a certain way, placed in a particular spot in our lockers and kept in order at all times. Our tailor-made uniforms had to be kept spotless and creased. Our hair must be trimmed so often the barbers must have felt guilty - our nails clean - and our faces cleanly shaven at all times. We had to keep our bunks made and our rooms spotless at all times. The brass buckles on our uniforms must shine like burnished gold at all times. For this first two weeks' period we were not permitted to leave the cadet area.

At the end of two weeks we were marched to the Primary Stage hangar line, where we had our first chance to inspect the planes we were to learn to fly. We met our instructor, drew our flying equipment, and were assigned lockers. The same day we started our ground school courses. We were to spend the mornings at the hangar line and our afternoons in ground school. Subjects pertinent to flying were given - radio, engine mechanics, navigation, meteorology, etc., were studied.

We flew "dual" with our instructor for the first few hours in the primary trainer planes. He went through the primary maneuvers over and over - what patience those instructors have! We did banks, stalls, spins, take-offs and landings, and forced landings by the dozens. After about seven hours of dual time I soloed. I think the thrill of that first solo has never been

equalled in my flying career. I was master of the whole world, in my own mind, when I took that PT off the ground. Randolph Field had always looked pretty big - but now it assumed the proportions of a postage stamp. That empty front cockpit seemed awfully large! But that first landing worked, and it established confidence in myself and my ability to fly. Now I was permitted to wear my goggles on my helmet instead of around my neck.

For the first four months we were under the guidance and jurisdiction of the "Upper Class" who were the cadets in the second or "Basic" training stage. To them we were ignorant "Dodos" (a species of bird that is unable to fly). Their wishes were commands. If they wished anything - a poem to be memorized or dramatized - a submissive "Dodo" was called upon. The Upper Class were highly respected, even worshipped - they had successfully survived the hazardous "washing out" period of training! We were allowed only three answers: "Yes Sir!", "No Sir!" and "No excuse Sir!" We were served after they had had the choice morsels from the platters, and we in turn acted as jesters for their amusement at the table.

After the first four weeks were over we were granted more privileges - we were allowed to go into San Antonio on Saturdays and had Wednesday afternoons off to do as we liked. Life became much more pleasant for us. A Cadet is at once accepted into a high social life in San Antonio.

During that first four months of training more than 50% of my class, in which 203 cadets started training, were "washed out" and sent home. One of the saddest things at the training school is to see fellows "wash out." They are heart-broken when they see the goal of their ambition - their fondest dreams - fade and disappear. Fifty percent is the average to finish the Primary stage of flying.

For the second four months of training we moved to the opposite side of the field and started flying the Basic Training ships - "BT's" we called them. They are a larger and much nicer airplane to fly. In addition to the flying that we did on Primary stage, we did formation and cross-country flying. It was now our turn to direct the new "Dodos" - to sit at the head of the table - to be served first! We learned to keep a stern face and command: "Wipe that smile off, Mister!"

Finally, the day came for us to leave Randolph and go to Kelly Field. It was a great day, yet everyone of us hated to leave. We hold Randolph Field pretty close in our hearts, and are proud of the fact that we can say: "I was trained

at RANDOLPH FIELD, the 'West Point of the Air.' We realize that we received at Randolph Field the ultimate in training to become one of the pilots in Uncle Sam's Army Air Corps.

Lieut. Way, a native of Prague, Okla., and a graduate in 1931 of the University of Oklahoma (B.S.), graduated from the Advanced Flying School, Kelly Field, Feb. 24, 1933, specializing in Pursuit. He was rated "Airplane Pilot" and commissioned a second lieutenant, Air Reserve. Assigned to active duty, he served at Selfridge Field, Mich., for two years. He is now stationed at Bolling Field, D.C., having recently enlisted as a Private in the Air Corps, in order that he may be on a priority status in the event examinations are held for appointment of additional second lieutenants in the Air Corps, Regular Army.

↑ VALUABLE LESSONS IN MIAMI AIR MANEUVERS

The recent GHQ Air Force maneuvers in the State of Florida were productive of valuable information. The organization of the fighting planes of the Air Corps into one large striking force with great strategic value left many important problems to be solved. The maneuvers provided the answer to some of these and pointed the way toward the solution of others.

The point was demonstrated that barring adverse flying weather, the entire GHQ Air Force can be concentrated in any part of the United States within 24 hours if two main conditions are fulfilled. First, there must be proper advance preparations of ground facilities; and second, the entire logistics branch of the Air Service must be studied and reconstituted.

The first problem, that of having proper landing and airdrome installations at the main strategic centers of the nation will be solved when money becomes available for carrying out the provisions of the Wilcox Bill, passed at the last session of Congress. This legislation authorized the purchase of these strategic and tactical locations. A survey is in progress and the plan now waits for the funds which will put it into being.

The second difficulty, that of organizing effectively the supply, repair, station complement crews, etc., is an involved situation requiring special study and adjustment that will affect the whole Army structure. The personnel question alone must be worked out as a new military problem.

One thing that stood out above all others was that, while the Air Force is the most mobile and effective of the new engines of war; its service, care and supply increases greatly as its size is augmented. And the complexity involves not only the Air Service itself

but the whole personnel and supply organization of the Army. Tactical use of small air formations is a relatively simple matter, but combined strategical and tactical use of large fleets is going to demand much preparation.

N.A.A. TO HOLD ANNUAL CONVENTION


Senator William G. McAdoo, President of the National Aeronautic Association, has announced that the annual convention of the Association will be held January 6th and 7th at the Mayflower Hotel, Washington. Delegates will be present from all sections of the country. Sessions will be held both days, with a dinner in the Chinese Room of the hotel on the evening of January 6th.

Of special interest this year is a report to be presented by Major James H. Doolittle, the noted flyer, as chairman of a special policy committee. Speakers on Major Doolittle's program are: Major-General Oscar Westover, Chief of the Army Air Corps; Rear Admiral Ernest J. King, Chief of the Bureau of Aeronautics, U.S. Navy; Richard S. Boutelle, State Co-ordinator, U.S. Bureau of Air Commerce; Mabel Britton, President of the 99 Club of women pilots; Oliver C. Parks, President of the Parks Aviation School; Thomas A. Morgan, chairman of the board, Curtiss-Wright Corporation; Walter Beech, President, Beech Aircraft Company; Fred L. Smith, Director of Aeronautics, State of Ohio; C.R. Smith, President, American Airlines; Dr. Roy E. Whitehead, Chief of the Medical Section, U.S. Bureau of Air Commerce; Col. Harold E. Hartney, Technical Adviser, Senate Sub-Committee on aircraft investigation; William Rockford, St. Paul, Minn., business man; Col. J. Monroe Johnson, Assistant Secretary of Commerce.

Senator McAdoo will speak at the dinner and preside at each session. Other speakers at the dinner are expected to be George S. Wheat, vice-president of United Aircraft and Manufacturing Company, and Fred D. Fagg, Chicago, Secretary of the National Association of State Aviation Officials. Holders of international records during 1935, numbering among them the nation's foremost flyers, will be honored at the dinner. Each will receive a certificate attesting his achievement from the Federation Aeronautique Internationale, of Paris, the official sporting body of the world.

Three Materiel Division representatives visited the Sperry Gyroscope Co., Brooklyn, N.Y., on December 2, 3 and 4, 1935 (making the flight there in a B-12A Martin Bomber, equipped with an automatic pilot), for the purpose of testing and discussing various details of the improved control units for the automatic pilot. A report thereon is being written.

THE NEW CHIEF OF THE AIR CORPS


The Air Corps is delighted with the Christmas present it received in the appointment of Brigadier-General Oscar Westover as Chief of the Air Corps: Having been on the job for more than three months, during General Foulcois' absence on leave, there will be no disturbance in administrative procedure. Of course, now that full responsibility falls upon him, General Westover may be expected to initiate some policies of his own.

The new Chief has many distinctions. He is one of the very few officers who served as an enlisted man in the Regular Army and is also a graduate of West Point. He is one of only about 35 officers holding all four Air Corps flying ratings. He is a National Elimination Balloon Race winner, having made one of the longest and swiftest balloon flights on record - 866 miles from Milwaukee, Wis., the starting point, to Lake St. John, Quebec Province, Canada, in 16½ hours. That same year, representing the United States in the International Gordon-Bennett Balloon Race, which started at Geneva, Switzerland, General Westover was eliminated through the unusual mishap of having Hungarian peasants seize his drag rope and haul the balloon to earth, with the mistaken idea that they were doing him a service.

General Westover comes to his new position with a splendid background of Air Force experience, as well as bureau service. He commanded the Air Force Maneuvers at March Field, Calif., in 1933; and commanded the Air Force in 1934, when it participated in the General Headquarters Command Post Exercises in the East which were commanded by General MacArthur.

With the duties devolving upon his new position (assuming greater proportions in view of the recent air-minded trend on the part of the people of this country and of Congress, and of their realization of the important role the Air Force is destined to play in any future emergency, General Westover faces great responsibilities which, in view of his all-around experience and his past success in performing the most arduous tasks, he may be expected to meet capably.

The best wishes of the Air Corps are extended to him for a highly successful administration.

Reginald M. Cleveland, aviation writer for the New York Times, had this to say regarding the new Chief of the Air Corps:

"With the appointment of Major Gen. Oscar Westover as Chief of the Air Corps, announced on Christmas Day, that service is assured of the leadership of

an officer of wide popularity and varied experience. He holds four aeronautical ratings, having earned those of Airship Pilot and Balloon Observer in addition to those of Airplane Pilot and Aerial Observer. Born in West Bay City, Mich., in 1883, General Westover served as an enlisted man in the Corps of Engineers before his appointment to the Military Academy, from which he graduated in 1906. After service in the Infantry, he was transferred to the Signal Corps in 1917.

Lighter-than-Air has enlisted the sympathetic interest of General Westover. He graduated from the Balloon School at Ross Field, Calif., in 1921, and the Airship School the following year. He won the National Elimination Free Balloon Race at Milwaukee in 1922, and was the Army entrant in the International Balloon Race at Geneva later that year. After acting as director of Aircraft Production, he graduated from the Advanced Flying School at Kelly Field. He became the Commanding Officer at Langley Field and Commandant of the Air Corps Tactical School located there. After two years in this post, he entered the Tactical School as a student, graduating in 1927. His next school tour was at the Command and General Staff School at Fort Leavenworth, Kan., where he remained as a member of the faculty after graduation.

General Westover brings to the Air Corps a balanced experience in tactical, staff, procurement and active flying background. His appointment augurs continued progress for a well-rounded army air arm."

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PROMOTION OF GHQ AIR FORCE CHIEF

On the recommendation of the Chief of the Air Corps and the Chief of Staff, General Malin Craig, the Secretary of War has advanced Brigadier-General Frank M. Andrews, Chief of the General Headquarters Air Force, to the temporary rank of Major-General.

This promotion is in line with the desire of the Secretary of War to give to the GHQ Air Force greater rank in the tactical scheme of the Army and place it in its proper relative position with the other combat organizations which are now commanded by Major-Generals.

During the coming year, according to War Department announcement, the GHQ Air Force will be reinforced by the addition of over 500 combat planes, and the advancement in rank of its commander was considered by the Secretary of War to be commensurate with the growing size and importance of the combat forces of the Air Corps. General Andrews' promotion became effective on December 27, 1935. This added recognition of the importance of the GHQ Air Force meets the Army's approval.



All squadrons of the Third Attack Group at Barksdale Field, La., conducted night operations during the period November 1st to 15th, stress being placed on two-hour night navigation flights for those pilots not having completed this phase of training and on unit night navigation missions. Very little was accomplished, however, due to poor weather conditions during this period.

During November, the 8th Attack Squadron conducted firing on the 1,000 inch Machine Gun Range, a part of the training required by Revised T.R. 440-40 for Rear Seat Gunners, for all their enlisted gunners. In addition to this, Gunnery and Bombing for pilots' qualification were conducted with only one mishap. First Lieut. W.C. Sweeney was forced to land on the gunnery range when his motor quit. He sustained no injury, nor was the airplane damaged, which was very fortunate considering the nature of the terrain on this portion of the reservation.

The 13th Attack Squadron conducted their bombing training for pilots during the early part of November, and on November 14th departed for Chapman Field, Miami, Fla., with 12 pilots and 26 enlisted gunners in nine A-12's and three Cargo airplanes for the purpose of qualification of rear seat gunners on towed targets. A very successful season was reported, with the exception of the fact that they arrived at Chapman Field on the tail end of a hurricane and found the field and tent frames in a rather poor condition. All gunners were qualified as expert, the highest score, 1565 out of a possible 1900, being made by Private O.C. Jones.

The 90th Attack Squadron completed their gunnery and bombing for pilots' qualification, and on the 23rd departed with twelve pilots and twenty-six enlisted gunners in nine A-12's and three Cargo airplanes for Chapman Field for training, the men and the airplanes moving to Fort Pierce, Florida, on December 1st for the GHQ Air Force concentration. On December 1st, seventeen A-12 airplanes of the 90th Squadron, borrowed from the other tactical squadrons of the Group, piloted by 17 pilots of the 3rd Attack Group, departed for Fort Pierce, Florida, for the purpose of participating in the GHQ Air Force Concentration in Florida. After the 90th Squadron (with all its attached airplanes) had departed for the concentration area, there was only one A-12 airplane left at Barksdale Field.

ARMY AMPHIBIAN MAKES RECORD FLIGHT

Three Air Corps pilots and a crew of three enlisted men established on December 12th a record in distance and speed for a YOA-5 Douglas Amphibian plane on a test flight from San Juan, Porto Rico, to Chapman Field, Miami, Fla.

The giant plane, in command of Captain A. Y. Smith, took off from the bay at San Juan, Porto Rico, at about 6:30 a.m., and arrived at Miami at 1:53 p.m., having covered a distance of 1,056 statute miles at an average speed of 146 miles an hour. The total elapsed time for the flight was 7 hours and 26 minutes.

U. S. Army GHQ Air Force officers considered the flight important from the communications standpoint. Colonel C.W. Lewis, Signal Corps, stated that "the flight proved that the airplane can be of great value in going great distances to sea and report back activities of enemies to places where those reports can do the most good."

Major Charles H. Howard, Communications Officer of the GHQ Air Force, declared that "the entire flight was really a test of our ability to communicate with the land forces. The results were highly gratifying."

The flight from San Juan was made without trouble of any kind, and Captain Smith was reported as stating that enough fuel remained in the tanks of the Amphibian for a further flight of about 5½ hours.

Officers and men who made the flight, other than Captain Smith, were Lieut. H.F. McCaffery, navigation officer; Lieut. Haywood S. Hansell, engineer officer; Corporal John McKenna, crew chief; Privates Ralph Miner, assistant crew chief, and Charles J. Archer, radio operator. Lieut. Hansell is stationed at the Air Corps Tactical School, Maxwell Field, Ala., while the other officers and men are members of the GHQ Air Force at Langley Field, Va.

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Lieut.-Colonel Ralph Royce, Commanding Officer of the First Pursuit Group, Selfridge Field, Mich.; Major Edwin J. House, Commanding Officer of the 94th Pursuit Squadron; Major George P. Tourtelot, Commanding Officer of the 17th Pursuit Squadron, and Major Alfred A. Kessler, Jr., Commanding Officer of the 56th Service Squadron, all of Selfridge Field, acted as observers of the Second Wing, GHQ Air Force, concentration at Miami, Florida. They departed on their southward flight on December 5th, piloting P-26A airplanes.

DEATH OF MAJOR ARTHUR K. LADD

His remains were laid to rest in the Arlington National Cemetery on the afternoon of December 17th. A formation of airplanes with one blank file droned overhead - a sort of mournful dirge - while relatives, friends and comrades in the service encircled the last resting place of a man they loved and respected - Major Arthur K. Ladd, of the Army Air Corps.

Fate was unkind to remove from our midst, just in the prime of life, a man of such sterling character. Quiet, ever courteous, always obliging, and of an extremely likeable disposition, Major Ladd made a host of friends both within and outside of the military service. His untimely death as the result of an airplane accident at Dale, S.C., December 13th, was a great shock to all who knew him, and with his passing into the Great Beyond they all feel that they have, indeed, lost a true friend. His comrades in the military service referred to him as "Paw" Ladd, and to his bereaved widow as "Maw." This simple nickname of itself denotes the affection they had for the couple.

Among those present at the funeral were Generals Frank M. Andrews and Henry C. Pratt, of the GHQ Air Force, Langley Field, Va. Major James H. Doolittle, Air Reserve, who at one time served at the same station with Major Ladd, was also present to pay his last respects. The pallbearers were Majors William E. Lynd, Rosenham Beam, Orlo H. Quinn, Clements McMullen, Captains James A. Mollison and David S. Seaton.

A veteran of the World War, Major Ladd was originally commissioned in the Field Artillery Reserve on November 27, 1917, after graduating from the Field Artillery Training Camp at Leon Springs, Texas. With the exception of three weeks of duty at Camp Jackson, S.C., all of his commissioned service until the date of his death was with the Air Corps. He attended the School for Aerial Observers at Post Field, Fort Sill, Okla., graduated August 26, 1918, and remained on duty at this school as an instructor for a brief period, then proceeding to Selfridge Field, Mich., to pursue the aerial gunnery course there. Following the completion of this course, on November 9, 1918, he was rated as an "Aerial Observer," and he returned to Fort Sill for duty as Officer in Charge of the Department of Aerial Gunnery. He earned the commendation of his superior officers for the excellent manner in which he performed his duties.

Transferred to Kelly Field, Texas, in October, 1919, he was detached for patrol duty on the Mexican Border, serving with "A" Flight of the 90th Aero Squadron and later as Commanding Officer

of Flight "B," 104th Aero Squadron.

In March, 1921, Major Ladd began his pilot training at the Primary Flying School at Carlstrom Field, Arcadia, Fla., and upon his graduation, August 26, 1921, was transferred to Ellington Field, Houston, Texas, where he qualified as a Pursuit Pilot and received the rating of "Airplane Pilot" on December 7, 1921.

After brief periods of service at Ellington and Mitchel Fields, he served a tour of duty in the Panama Canal Zone. On May 29, 1925, he began a four-year tour of duty in the Office of the Chief of the Air Corps, being in charge of the Reserve Section of the Personnel Division. From November 12, 1928, until the date of his relief from duty in Washington, he performed the duty of Assistant Executive. During the three years following, Major Ladd was on duty as a student officer, completing the one-year course at the Air Corps Tactical School at Langley Field, Va., and the two-year course at the Command and General Staff School at Fort Leavenworth, Kansas.

From Fort Leavenworth, Major Ladd proceeded to the Air Corps Tactical School at Maxwell Field, Ala., where he served in the capacity of instructor until his assignment, on April 2, 1935, as Assistant to the Assistant Chief of Staff, G-4, Headquarters GHQ Air Force, Langley Field, Va., with the temporary rank of Major.

Major Ladd was born at Sherman, Texas, November 1, 1899. He attended the Wentworth Military Academy for four years, the Virginia Military Institute for one year and the University of Missouri for three years. He served as a commissioned officer in the Missouri National Guard.

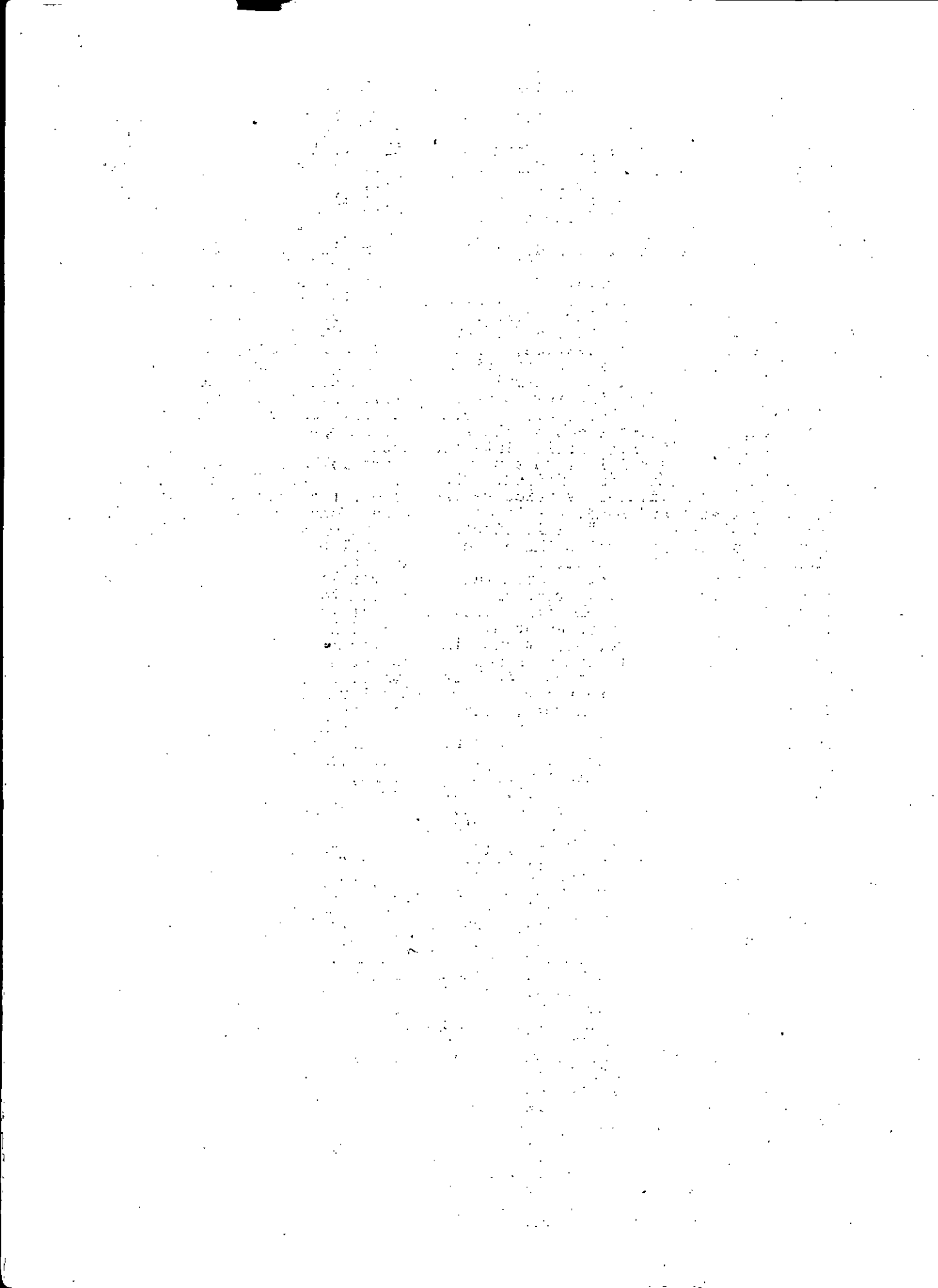
Major Ladd was considered an exceptionally good all-around officer - intelligent, capable, possessing excellent judgment, and being thoroughly dependable in whatever position he was placed. Very level-headed and a clear thinker, he accomplished his work in a thorough, efficient and quiet way.

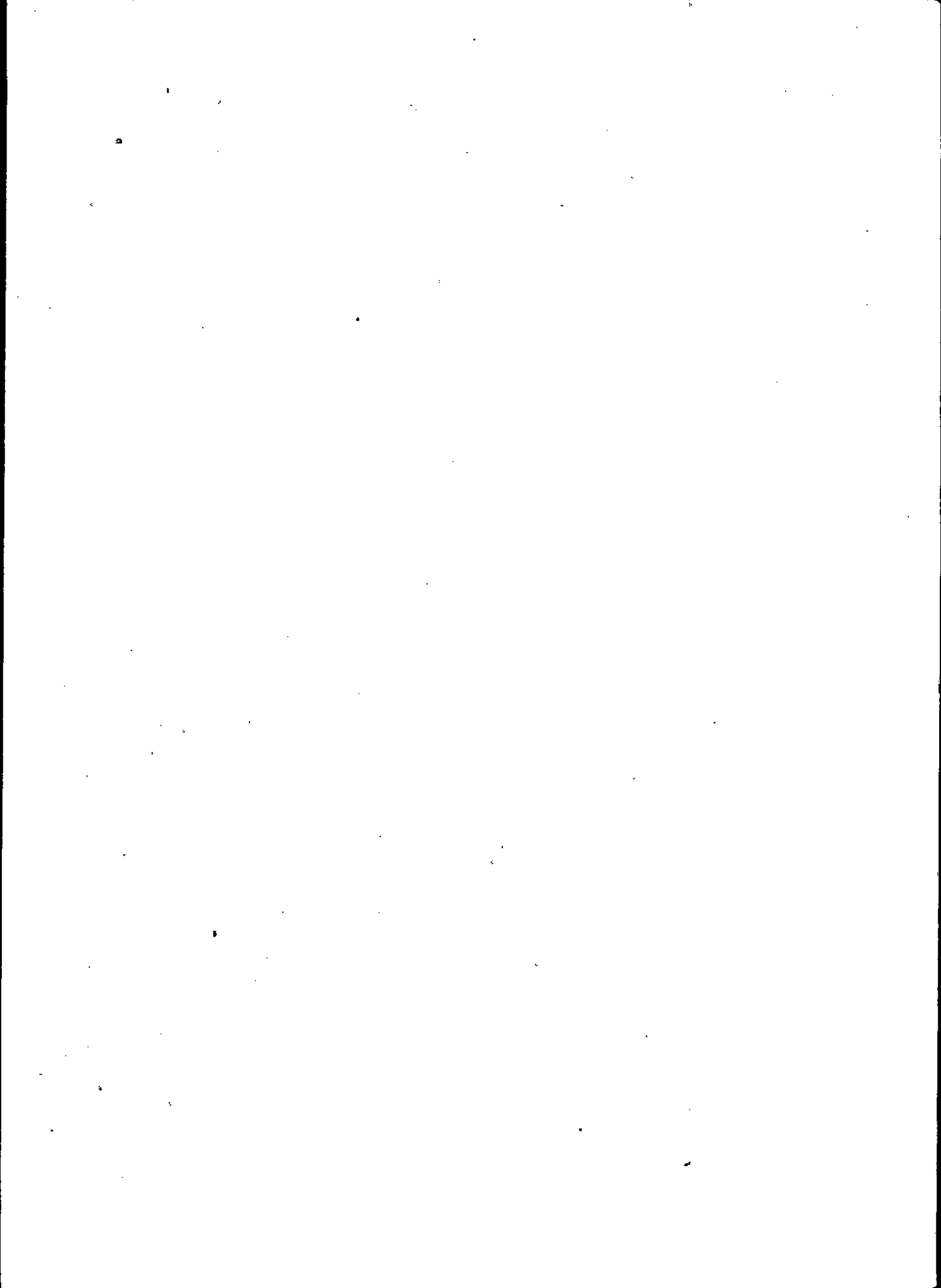
His death is a distinct loss not only to the Air Corps, but to the entire service as well. The heartfelt sympathy of the Air Corps is extended to Mrs. Ladd, her 15-year old daughter, Betty and other surviving relatives.



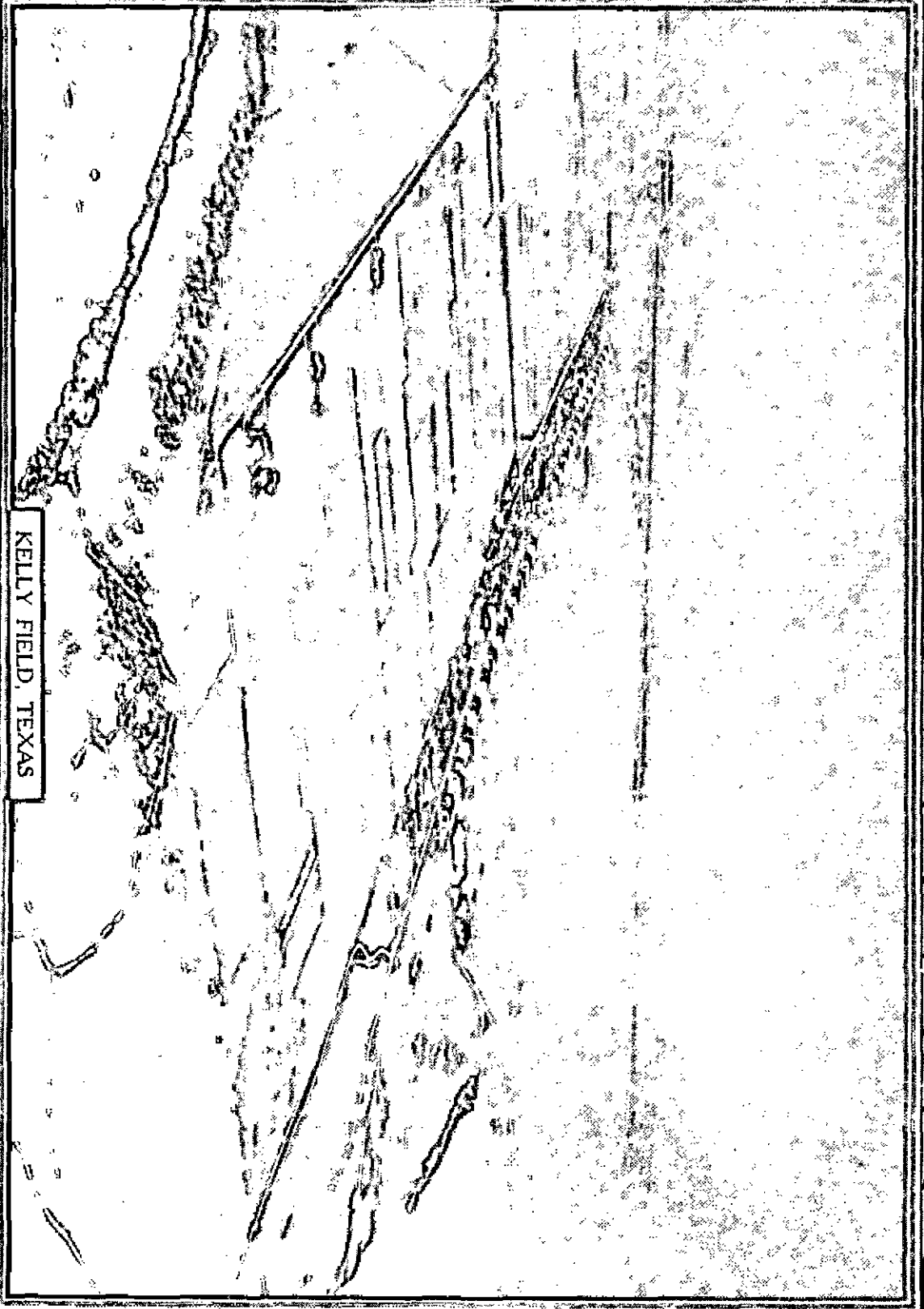
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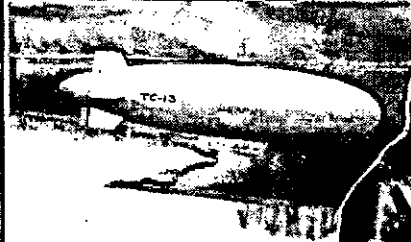


KELLY FIELD, TEXAS



AIR
CORPS

NEWS LETTER

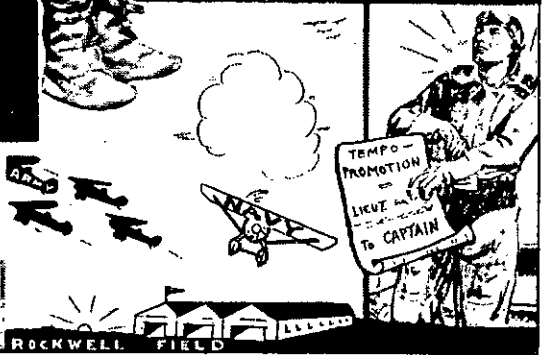


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WAR DEPARTMENT WASHINGTON, D.C.

January 15, 1936

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Information Division
Air Corps

January 15, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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GREETINGS TO THE OFFICERS AND MEN OF THE AIR CORPS

Ed. Note: It is regretted that this message from Mr. McSwain, Chairman of the House Military Affairs Committee, was received too late for publication in the January 1st issue of the News Letter.

On this January 1, 1936, I am sending my greetings and good wishes to the officers and men of the United States Army Air Corps. I do not fail to think of the officers and men in the armed services, such as the ground force of the Army, the Marine Corps, and the Coast Guard. But since the Air Corps is in fact "our first line of defense," and therefore must be instantly ready at all times to perform its great mission of beating off and beating down any attempted invasion of our country, I confess an unusual interest in this new branch of the Service.

I have not suggested anywhere that other agencies and instrumentalities of defense may be discarded or neglected. Progress and improvement in the instrumentalities of warfare do not bring about substitutions for old agencies, but merely cause additions to them and thus a general increase in the number and kinds of weapons. But with an adequate and properly equipped and trained air force, coupled with our Navy and the Naval Air Force, we can relax somewhat as to land forces. Since our sole purpose in maintaining military establishments is to insure defense, we believe that the Air Corps and the Navy can so retard and hold back the

initial stages of any possible invasion as to give us time to fill in the skeletonized organizations of the Regular Army, and to recruit the National Guard up to war strength and to man the Organized Reserves with the unorganized militia, and to train these three groups of land forces so that invasion will be prevented, and if not actually prevented, the invader may be promptly driven from our borders and punished as a warning for all time to all peoples.

The charm of adventure and a pioneer spirit are always with the Air Corps. For her officers and men there are no dull, monotonous days of peace. The desire for progress, the craving for greater speed, the hunger for higher altitudes, the longing for new records in all lines, these are the every day experiences of the officers and men of the Air Corps. They stimulate the greatest energy and activity, they maintain the highest degree of morale, they preserve esprit de corps, they make ability to achieve the measure of reward, and they fuse and cement the personnel of the Air Corps, irrespective of rank, or the absence of rank, into one great fellowship of cooperation and mutual good will.

All honor to these modern knights. Hats off to this present-day chivalry. May the year 1936 witness accomplishments, see a finer, nobler spirit of public service, and thus bring happiness and contentment to the officers and men of the "first line of our Nation's defense."

JOHN J. McSWAIN.

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SECRETARY OF WAR VIEWS VOLCANIC ERUPTION FROM AIRPLANE

To the 5th Composite Group, Luke Field, Hawaii, went the distinction and honor of furnishing a special flight of airplanes to carry the Secretary of War and members of his party over Mauna Loa to observe the recent lava eruption.

The flight was commanded by Major Lucas V. Beau, Jr., and included Captains Charles F. Born, Fay R. Upthegrove, Lts. Daniel A. Cooper, Byram A. Bunch and Carlyle W. Phillips.

Two Bombardment planes of the 72d Bombardment Squadron and one Observation plane from the 4th and 50th Obs. Squadrons, escorted by the Amphibian from the 4th Obs. Squadron, composed the flight.

The flight proceeded to Hilo on Decem-

ber 4th, and Major Beau reported to the Secretary of War on board the USS CHESTER. The following morning the flight was promptly organized and took off, the Secretary flying with Major Beau in an O-19. Excellent conditions prevailed, and all planes circled over the flow at 9,000 feet while many pictures were taken.

Wishing to see everything, the Secretary requested Major Beau to carry him over the crater of Mokuaweoweo at the top of the mountain, nearly 14,000 feet above the sea. The plane flew through a light flurry of snow at the summit. After discharging their passengers at Hilo, all airplanes returned to Luke Field the same afternoon.

Ed. Note: The review of Air Corps activities and various aeronautical events of the year with which this branch of the service was associated, as hereinafter given, is by no means a full and complete chronology thereof. The time necessary to conduct the required amount of research work in order to compile such a complete chronology has not been available and, furthermore, space is lacking for the publication of a more lengthy report.

No attempt has been made in this chronology of Air Corps events to review the activities of the Air Corps Materiel Division, Wright Field. This will be covered in the next issue of the News Letter in an article by Brigadier-General A. W. Robins, Chief of the Materiel Division.

The cover page for this issue of the News Letter gives some inkling of various events which transpired within the Air Corps during the calendar year 1935. The illustration at the top left serves as a reminder of the mid-winter test flight during February, conducted by a provisional squadron equipped with a varied assortment of service type airplanes.

Next is the stratosphere balloon in which Captains Stevens and Anderson accomplished a world's altitude record. We then see the President congratulating Major Albert F. Hegenberger, who was awarded the Collier Trophy for his pioneering work in instrument flying and landing. The Caterpillar Club book speaks for itself. News Letter readers are already familiar with the outside appearance of the Army Aeronautical Museum at Wright Field, completed last year. The Army Airship TC-13 is flying across the continent from Langley Field to its new home at Sunnyvale, Calif. General Arnold is standing beside the Mackay Trophy, awarded him for the second time in his career as an Army pilot. The well-known figure of Major-General Benjamin D. Foulois, pioneer Army flier and until recently Chief of the Air Corps, brings a feeling of regret over the departure from active duty to private life of a man who practically started the aviation branch of the Army. Best wishes go to him in his well earned retirement.

The young man must also have his inning, and the next "shot" is that of Captain Karl E. E. Gimmler, who won the 1935 Mitchel Trophy Race. Lack of space does not permit an adequate representative display of the air force of the GHQ, so the airplanes on the line will have to suffice. The Army planes flying away from Rockwell Field and the arrival of the Navy plane denotes the interchange of air stations between the Army and the Navy. The last sketch hardly needs any explanation save to add that it has tended to bolster the morale of Air Corps commissioned personnel.

The year 1935 witnessed unusual strides in the development of our national aerial defense system. There was a reorganization of Air Corps units, following the creation on March 1st of the GHQ Air Force. In the interests of mobility, all units thereof were reduced to the minimum personnel - in short, a fighting force lending itself to rapid concentration at any desired point in the United States

in a minimum time. The maneuvers of the GHQ Air Force in Florida early in December, touched upon elsewhere in this issue of the News Letter, furnished a striking example of the rapidity with which this force can be assembled.

Flying personnel received more intensive training, and the number of hours of specialized training in instrument flying, aerial navigation and night flying was materially increased. A definite standard of flying proficiency, established for all Army pilots, was productive of excellent results. The use of all aids to navigation, such as radio facilities, including the radio beam, was encouraged at every opportunity. Training was accelerated in aerial gunnery, bombing and navigation. Tactical maneuvers, embodying missions of a varied character, were frequently held in order to develop new and better means of employing our air forces. Mass movements were made by night and day, during which problems of supply as well as tactics were studied. Certain maneuvers were so arranged as to enable tactical units to participate also in aeronautical events of national importance, thereby making it possible for the general public to observe progress made in military aircraft.

There was a marked advance in the design, construction and performance of aircraft of all types. Performance tests on different types of aircraft were conducted at the Materiel Division at Wright Field, as a result of which contracts were placed with different manufacturers for airplanes definitely superior than any heretofore used. In general, the new combat type airplanes are of all-metal, low-wing monoplane construction, which will not only step up the speed attained but add many hours to the life of each, as well as reduce maintenance requirements.

Of considerable significance, possibly leading to revolutionary changes in air tactics, is the remarkable advance recently made in speed, cruising range and load-carrying capacity of new bombardment type airplanes. A recent competition among manufacturers of airplanes of this type greatly stimulated this development. In Attack type of aircraft, orders were placed for single-engine all-metal planes incorporating newly designed features. Flaps to reduce the landing speed as to make possible the use of ordinary sized airports. A new retractable landing gear streamlines neatly into the wings during flight, increasing cruising speed. A reinforced fuselage reduces the hazard of a landing made in an emergency, without lowering the wheels. An out-

standing development of the year was that of a 4-engined airplane by a leading manufacturer. Its delivery flight of 2100 miles non-stop at an average speed of over 200 miles per hour indicates its capabilities.

Always ready to extend its cooperation in projects having for their purpose the advancement of scientific knowledge, the Air Corps cooperated with the National Geographic Society in sponsoring a balloon flight into the stratosphere. On Armistice Day, Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, piloting the world's largest balloon, attained an altitude of 72,395 feet for a world's record. As a result of this 14-mile ascension into the stratosphere, extremely interesting and valuable additions to the world's scientific knowledge has been gained.

PERSONNEL - APPOINTMENTS

Lieut.-Colonel Augustine W. Robins was appointed Brigadier General and Assistant Chief of the Air Corps for a period of four years, from January 1, 1935, and was assigned as Chief of the Materiel Division, Wright Field.

The GHQ Air Force officially came into being on March 1, 1935. Lieut.-Colonel Frank M. Andrews was designated as commander thereof with the temporary rank of Brigadier-General. On December 27th, he was promoted to the temporary rank of Major General. The temporary rank of Brigadier-General was also conferred upon Lieut.-Colonels Henry H. Arnold and Henry C. Pratt, Air Corps, who were designated as the commanders of the 1st and 2nd Wings, respectively. Lieut.-Colonel Gerald C. Brant was designated as commander of the 3rd Wing, with the temporary rank of Colonel.

Of the approximately 475 candidates who took the examination in April for permanent commissions, 40 enlisted men of the Air Corps and two Air Reserve officers were appointed second lieutenants in the Air Corps, Regular Army, with rank from June 30, 1935. On Aug. 1, 1935, ten additional appointments were made, making a total of 52 new Air Corps officers added to the commissioned personnel, not including West Point graduates successfully completing the course at the Air Corps Training Center.

Brigadier-General Oscar Westover was appointed, on December 24th, Chief of the Air Corps, with the rank of Major-General, for a period of four years, succeeding Major-General Benjamin D. Foulois, retired.

Brigadier-General Henry H. Arnold was appointed Assistant Chief of the Air Corps, with the rank of Brigadier-General, for a period of four years, beginning December 28th.

DEDICATION OF HAMILTON FIELD

Nearly 20,000 people witnessed the official dedication of the new Air Corps post, Hamilton Field, San Rafael, Calif., on May 12th. General Arnold, 1st Wing Commander, gave a very impressive talk on the mission of the Wing in protecting the San Francisco Bay districts.

There was an aerial review of 30 planes of the 7th Bombardment Group, led by Lieut.-Col. C.L. Tinker, also a demonstration of parachute jumping. This field was named in honor of 1st Lieut. Lloyd Andrews Hamilton, who was killed in action near Lagnicourt, France, August 26, 1918.

NAMING OF LANDING FIELDS

Announcement was made on May 21st of the naming of an area of more than 2500 acres of land, near Fort Kamehameha, Hawaii (designated as Tracts "A" and "B") as "Hickam Field," in honor of Lieut.-Colonel Horace M. Hickam, Air Corps, who was killed in an airplane accident at Fort Crockett, Texas, November 5, 1934.

FRONTIER DEFENSE BASES AUTHORIZED

On August 9th, the President signed the Bill, H.R. 4130, sponsored by the Hon. J. Mark Wilcox, Member of Congress from Florida, authorizing the Secretary of War to locate and establish for the use and occupancy of the Air Corps additional air bases in strategic areas.

NEW DIVISION IN OFFICE OF CHIEF OF AIR CORPS

On July 1st, there was formed in the Office of the Chief of the Air Corps, Washington, an additional Division, known as the Reserve Division, to handle all matters connected with the Air Corps Reserve, including training.

TEMPORARY PROMOTIONS

The Secretary of War approved a plan, submitted by the then Chief of Staff, General Douglas MacArthur, inaugurating a system of temporary promotions in the Air Corps, based on non-availability of officers of suitable permanent rank, and providing just reward and compensation for those performing duties and bearing responsibilities of higher rank.

NEW ORGANIZATION

A new unit, the 3rd Transport Squadron, was welcomed into the Air Corps as an active organization at the San Antonio Air Depot on July 5th, taking the place of the former 3rd Provisional Transport Squadron which had been in operation at that Depot as an embryo organization of the Air Transport Service instituted in February, 1933.

FLYING SAFEGUARDS

The Air Corps Materiel Division, in its constant endeavor to safeguard flying to the utmost, and to prevent forced landings due to fuel system difficulties, developed a device tending to insure continuous operation of the engine in the event of the failure of the pilot to "switch tanks" at the proper time. The pilot is warned by a light when the main or auxiliary gasoline supply is exhausted, but fuel is drawn from the other supply or reserve whether the pilot turns the fuel cock or not.

A new wind direction indicator, which permits easier interpretation from low altitudes and from the ground than any type heretofore in use, was designed at the Materiel Division and placed in service test at Randolph Field, Texas.

PURCHASE OF NEW AIRPLANES

During the calendar year 1935, announcements were made by the War Department of the approval by the Assistant Secretary of War, Hon. Harry H. Woodring, of the award of the following contracts for new airplanes for the Air Corps:

To the Boeing Aircraft Corporation, of Seattle, Wash., a contract for 13 four-engined Bombing planes for service test.

To the Douglas Aircraft Company, of Santa Monica, Calif., a contract in the amount of \$1,235,500 for 18 two-engine Transport planes, and spare parts equivalent to two additional planes; also for 90 Bombardment airplanes at a total cost of \$6,498,000, of which 82 are to be V-6935, A.C.

delivered by flight to tactical units and the remaining 8 sent to Air Corps depots as spares.

To the Northrup Corporation, Inglewood, Calif., a contract in the total amount of \$2,560,074 for 100 Attack planes, and for spare parts equivalent to 15 additional planes.

To the Stearman Aircraft Co., of Wichita, Kansas, a contract in the amount of \$243,578 for 26 Primary Training planes.

To the North American Aviation, Inc., Dundalk, Md., a contract in the amount of \$559,731.80 for 42 Basic Training planes, spare parts equivalent to 3 additional planes, and for certain data.

TRAINING

During the year a total of 455 students began training at the Primary Flying School at Randolph Field, Texas, comprising 67 officers of the Regular Army, 47 of whom were graduates of the June, 1935, class of the U.S. Military Academy; 43 enlisted men, and 345 candidates from civil life. The enlisted men and civilian candidates trained under the status of flying cadets. There were three new classes during the year, one starting in March, another in July and another in October.

Graduating from the Advanced Flying School, Kelly Field, Texas, from the three classes which entered the previous year, were a total of 197 students, comprising 42 officers of the Regular Army, 30 of whom were 1934 West Point graduates; 5 officers from foreign countries and 150 flying cadets.

Early in the year, a group of 20 officers from various Air Corps posts in the United States, started a six weeks' course in navigation training and instrument flying at Rockwell Field, Calif.

Beginning March 20th, 18 Air Corps officers, serving as Instructors of National Guard Air Corps organizations, took a special course of two weeks in instrument flying at the Air Navigation School at Rockwell Field. This was in line with the policy that all National Guard Air Corps units should be thoroughly trained and equipped for flying under all weather conditions.

Brigadier-General James E. Chaney, Assistant Chief of the Air Corps, reported at Randolph Field, May 17th, and assumed command of the Air Corps Training Center.

The 2nd Bombardment Group in 26 B-6A's, 2 BT-2's and 2 PT-3's, and led by Lieut.-Colonel Charles B. Oldfield, departed from Langley Field, Va., on June 11th for Mitchel Field, N.Y., for a month's tour of duty in connection with the training of West Point cadets.

Seven Air Corps officers graduated on July 31st from the Air Corps Engineering School, Wright Field, Dayton, Ohio. Brigadier-General A.W. Robins, Chief of the Materiel Division and Commandant of this School, delivered the graduation address and presented the diplomas.

During the summer months, Air Corps Reserve officers in various sections of the country completed 14-day active duty tours. Full training schedules were carried out, each officer accumulating about 20 hours of solo flying time in service type airplanes.

Fifty Air Corps officers started the fall term on August 29th at the Air Corps Tactical School at Maxwell Field, Montgomery, Ala.

AIR MANEUVERS AND DEMONSTRATIONS

The first tangible evidence of the formation of the new 1st Wing of the HQ Air Force appeared on March 22nd, when it held its first concentration at Hamilton Field, Calif. Brigadier-General Henry H. Arnold, Wing Commander, devised a communication problem, combined with a bombardment concentration, with accompanying Pursuit protection, with Hamilton Field as the objective. There were 76 airplanes in the concentration.

April 13th marked the largest concentration yet to be effected by the Wing. Units participating in the maneuvers were the Bombardment Groups from Hamilton and Rockwell Fields, the Attack Group from March Field and the 38th Observation Squadron from Brooks Field, Texas. Ninety tactical planes in all were present for the exercises, which lasted two days. On April 14th, in the presence of one of the largest crowds ever assembled at March Field, the units engaged in an aerial review for General Arnold. Major-General Paul B. Malone, 9th Corps Area Commander, reviewed the entire wing on the 15th.

The 7th Bombardment Group left Hamilton Field on May 20th for a ten-day period of simulated conflict over Sacramento and vicinity. Tactical problems and instrument flying were stressed in these maneuvers by the 1st Wing.

Maneuvers were held by the Wing at Mines Field, Los Angeles, Calif., for a 3-day period, beginning June 18th. There was a concentration of the Wing at Rockwell Field on the night of June 20th.

A 3-day concentration of the Wing took place at Salt Lake City, Utah, on July 22nd - 24th. The various training missions carried out were intended to stress that Salt Lake City is one of the centers from which the 1st Wing must be prepared to operate in defense of the West Coast. The airmen were afforded practice making landings in the rarefied mountain air of 5,000 ft. elevation.

Pursuit and Bombing planes from March, Hamilton and Rockwell Fields staged an "attack" on the San Diego Exposition on the night of September 6th, the airplanes dropping noise bombs, and the defending troops, the 63rd Coast Artillery, probing the night with searchlights for the speedy planes, and the provisional company of the 50th Infantry firing blank cartridges skyward. The sham battle was the climax of three days of mock air attacks, September 4th to 6th, over the Exposition grounds.

During the middle of October, the 17th Attack Group conducted maneuvers over several cities in the Imperial Valley, Calif. Bombing and aerial gunnery were held at Muroc Dry Lake.

All of the units of the Air Corps and of the Coast Artillery (Anti-Aircraft) on the West Coast participated, November 3-17, in field exercises at widely scattered points in the San Joaquin valley. A total of 131 Air Corps officers and 1348 enlisted men, with over 80 airplanes, participated in the mock air battles, as well as some 16 officers and 350 enlisted men of the Coast Artillery.

The 17th Attack and 19th Bombardment Groups

staged an air demonstration at March Field on November 30th for the benefit of the Army Relief Society.

The 7th Bombardment Group conducted two weeks of mimic warfare at Merced, Calif.

2nd Wing

The 2nd Bombardment Wing, Langley Field, Va., with Major B.Q. Jones commanding, returned to its home station on February 4th, after 27 days of field maneuvers in the 4th Corps Area. Participating in these maneuvers were 93 Air Corps officers (pilots), 2 Flight Surgeons, 19 Flying Cadets and 241 enlisted men. The 81 airplanes utilized included 44 Pursuit, 29 Bombardment, and 8 Transport. The ground echelon used 42 trucks and an ambulance. Due to the shortage of airplanes, the Wing was organized in groups of two squadrons each. A total of 16 independent Air Corps camps was established, 3,753 hours were flown, 3315 convoy road miles and 2,675 air line miles were covered in Wing movements.

A composite squadron of 15 P-26A's, a BT-2B's and one O-19 of the 1st Pursuit Group, Selfridge Field, Mich., visited Benton Harbor, Mich., May 10th during the course of a tactical problem.

Pursuit tactics by an 18-plane Squadron, led by Major Rex Stoner, and a review, were staged at Langley Field on May 11th on the occasion of the visit to that field of the Assistant Secretary of War and members of the House Military Affairs Committee. The visitors were transported in two Transports piloted by Major Donald B. Phillips and Lieut. Townsend Griffiss.

The 35th Pursuit Squadron, Langley Field, with 18 planes, demonstrated, on August 3rd, Pursuit tactics to West Point cadets at Fort Benning, Ga., and on the following day gave a 20-minute demonstration of string and "Vee" maneuvers, followed by an attack on a formation of Attack planes from Barksdale Field, La. Two days prior to the Pursuit demonstration, the cadets witnessed a Bombing demonstration staged by a composite squadron from the 2nd Bombardment Group.

Selfridge Field was practically deserted during the period October 7th to 10th, when the 1st Pursuit Group, under the command of Lieut. Colonel Ralph Royce, attended a concentration of the Wing at Langley Field. All personnel and supplies were transported by air.

The 97th Observation Squadron, Mitchel Field, N.Y., towed targets at night, August 25th to 28th, to provide searchlight practice for the 62nd Coast Artillery during the First Army field training exercises in the Pine Camp area of New York.

Pilots of the 37th Attack Squadron, Langley Field, in six airplanes, gave a smoke screen demonstration on October 2nd at Aberdeen Proving Ground, Md., which was the gathering point of the Ordnance Department, members of the Society of Mechanical Engineers, and other guests, in order to witness demonstrations of all Ordnance equipment of the U.S. Army. All types of armament were demonstrated to the crowd of approximately 5,000 persons.

3rd Wing:

The 20th Pursuit Group, Barksdale Field, La.

led by Lieut. Colonel Millard F. Harmon, made a controlled flight to Fort Leavenworth, Kansas, January 3rd, for the purpose of training in unit navigation and demonstrating Pursuit tactics to the Command and General Staff School.

The 20th Pursuit Group, embracing the 55th, 77th and 79th Squadrons, conducted field exercises at Tallulah, La., October 3rd and 4th.

Participating in the maneuvers at the Command and General Staff School, October 9-14, were 41 airplanes of the 20th Pursuit Group and the 90th Attack Squadron, Barksdale Field, La.

On October 16th and 17th, the 3rd Attack Group (8th, 13th and 90th Attack Squadrons) performed field maneuvers at Tyler, Texas.

The 3rd Wing, with 70 airplanes from the 20th Pursuit and 3rd Attack Groups, occupied Shushan Airport at New Orleans, La., October 20th to 24th.

Insular Possessions

Philippines:

The annual maneuvers of the 4th Composite Group, Nichols Field, under the command of Lieut. Colonel A.L. Sneed, were held at Del Monte, Bukidnon, Mindanao, January 14th to 26th. Thirty-four officers and 104 enlisted men participated. Supplies were transported on an Army mine planter, which carried also 2 officers and 70 enlisted men. The remaining personnel made the 500-mile trip to Del Monte by air. Landings were made by practically all pilots of the Group on 19 different landing fields which may be considered satisfactory for operations of units ranging in size from a flight to the entire Group.

Panamá:

On March 6th, the 19th Composite Wing, comprising the 6th Composite Group at France Field and the 16th Pursuit Group at Albrook Field, joined other arms of the service in the Panama Canal Department annual maneuvers. There was practically a whole month of strenuous field activities. The maneuvers served to emphasize the necessity for adequate and prompt means for communicating between the commanders on the ground and the observers in the air. The maneuvers ended on March 30th with a review of approximately 8,000 troops at Albrook Field. The air element, comprising the entire aircraft strength of the Panama Canal Department, was commanded by Col. Wm. C. McChord.

Detachments of the 19th Composite Wing, commanded by Colonel Wm. C. McChord, demonstrated the versatility of the Air Corps when they participated on foot, in motors and in the air in a review at Fort Clayton, in honor of six general officers in the Canal Zone at that time.

Hawaii:

The 18th Pursuit Group, Wheeler Field, T.H., held an inspection, review and tactical exercise on April 4th, in honor of Major General Hugh A. Drum, the new Hawaiian Department Commander.

The 6th Pursuit Squadron, Wheeler Field, formed the Army part of the military airplanes escorting the Pan-American "Clipper" which arrived at Honolulu from Alameda Airport, Calif., after a record breaking flight on April 17th

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of 17 hours and 45 minutes.

Units of the 18th Composite Wing moved out of Wheeler and Luke Fields on June 25th and participated over a period of four days in the Hawaiian Department maneuvers under field service conditions. All equipment and material were camouflaged, rendering the positions of the Air Corps units hard to discern. Valuable practical experience was afforded all participating personnel. Flying missions were conducted at altitudes ranging between 14,000 and 25,000 feet.

Miscellaneous

In the Miami All-American Air Races, January 10th to 12th, demonstrations in tactical flying were staged by a squadron of 17 P-26's of the 1st Pursuit Group, Selfridge Field, Mich., and a flight of nine planes of the 3rd Attack Group, Barksdale Field, La. Amazing aerial feats were performed by the Army acrobatic team, the "Three Men on a Flying Trapeze", led by Major Claire L. Chennault, with 1st Lieuts. J.H. Williamson and Wm.E. McDonald, Air Reserve, as wing men. Brooks Field was represented at the Races by a flight of 22 airplanes and personnel of 23 officers and 18 enlisted men.

A flight of 19 P-26A airplanes and one C-24 Transport, under the command of Lieut. Col. Ralph Royce, 1st Pursuit Group, Selfridge Field, proceeded to Brantford, Ontario, Canada, where on May 6th it participated in demonstrations held there in honor of the King of England.

From June 11th to the 25th, the 41st Division Aviation, Washington National Guard, participated with troops from Washington, Oregon, Idaho and Montana in the annual encampment at Camp Murray and Fort Lewis, Wash. Approximately 7,600 Guardsmen were at the concentration. Aerial gunnery and cooperative missions with other arms of the service constituted the program of the Washington National Guard airmen.

The 15th Observation Squadron returned June 14th to its home station, Scott Field, after operating for 3 weeks with the 61st Coast Artillery (Anti-Aircraft) in joint maneuvers at various localities in Illinois, Wisconsin and Michigan.

June 30th marked the completion of a year of "weather hops" to higher altitudes for the Department of Agriculture by pilots of the 41st Division Aviation, Washington National Guard, Spokane, Wash. During the year only 16 flights were cancelled. These flights, averaging 18,000 feet altitude, and lasting about 80 minutes each, were all started at about midnight. The year's flying time totalled approximately 440 hours. Douglas O-38E Observation planes were generally used, equipped with a device which holds the weather recording instrument on the left wing. Equipped with the SCR-134 set, communication was maintained with the Division ground station and the Department of Commerce station. The flights totalled 320, and ranged in altitude from 6,000 to 22,300 feet.

Led by Lieut. Colonel Royce, 21 officers and 18 enlisted men from Selfridge Field participated in the National Air Races at Cleveland, Ohio. The Army's "Three Men on a Flying Trap-

ese" gave their usual clever exhibition of aerial acrobatics as a unit.

The 91st Observation Squadron, Crissy Field, Calif., with the 15th Photo Section attached, participated in field exercises for two weeks, with the base of operations at Watsonville, Calif., working in cooperation with the 6th Brigade encamped near Monterey, Calif.

A demonstration, comprising varied air maneuvers, was held at the Command and General Staff School, Fort Leavenworth, Kansas, on October 12th, with Air Corps personnel from Barksdale, March, Hamilton and Langley Fields, and from Fort Leavenworth, participating, utilizing 60 combat planes of various types.

Flights

During the field exercises of the 2nd Wing in the 4th Corps Area, the Airship TC-13, operated by the 19th Airship Squadron, Langley Field, Va., completed a non-stop flight of 900 miles from Langley Field, Va., to Miami, Fla., leaving the home station at 10:20 a.m., and arriving at Miami at 4:30 p.m. the next day. The return flight to Langley Field was made in 18 hours without stops.

The Cold Weather Test Flight operated during the entire month of February in the northern States where snow and ice last during the entire winter season. A composite organization, comprising 21 officers and 25 enlisted men, utilizing 17 airplanes of different service types, and led by Lieut. Colonel Ralph Royce, Air Corps, conducted various tactical problems. Temperatures as low as 28 degrees below zero were encountered, as well as a number of heavy snowstorms. The airplanes were equipped with a landing gear combination of wheel and ski adapted for landing on both bare and snow-covered ground. This excursion into the domain of King Winter afforded opportunities not only to test the new landing gear combination, but also devices for starting engines in zero weather, winter flying clothes, power plant installations, priming fluids, gasoline and oil. Valuable information was obtained in connection with the operation of various types of aircraft under severe winter conditions.

The 17th Attack Group, March Field, Calif., consisting of three squadrons equipped with P-26A Pursuit planes, and commanded by Capt. Ira C. Eaker, made a flight early in the year to Maxwell Field, Montgomery, Ala., and averaged a speed in excess of 220 miles per hour.

The first of what is expected to be a series of cross-country training flights into Central American countries from the Panama Canal Zone, was completed on May 2nd with the return of Headquarters Flight, 19th Composite Wing, to Allbrook Field from San Jose, Costa Rica. The flight of five planes was led by Colonel Wm. C. McChord, Wing Commander.

A squadron of 2 Bombing and 7 Observation planes from France Field, Panama Canal Zone, under the command of Lieut. Colonel Lewis H. Brereton, visited San Salvador, Republic of Salvador. The visitors were favorably received by the officials of the Republic and others.

Captain Hez McClellan, Air Corps, stationed at Bolling Field, D.C., accomplished during a period of two months an airplane reconnaissance of the routes to and from Alaska and throughout the Territory of Alaska. During this period:

he flew on 138 days a total of 153 hours and 25 minutes, during which time he secured a splendid photographic record of the places visited. The time on the ground was spent in ground reconnaissance, both visual and photographic and in necessary airplane maintenance.

Many of Captain McClellan's flights in Alaska were true pioneer flights. His was the first military airplane ever to land at Point Barrow, or to return from Point Barrow to Fairbanks, over the route taken. This route was from Point Barrow, southeast to Admiralty Bay, Dease Inlet; thence along Chipp and Ikpiok Rivers to Coleville River, thence via Killik and Chandler Rivers to the source of the latter, thence southeast to John River, which was followed to Bettles. From Bettles a direct line was followed to Fairbanks.

This route was mostly over terrain uninhabited and for which the details of the map carried were entirely inadequate to afford a reasonable expectation of safe progress over the ground in the event of airplane failure. This terrain is among the most rugged, desolate and difficult of traversing on foot of any in the World.

Captain McClellan, accompanied by Sergeant Tamosan and Corporal Krause, and piloting a C-29 Douglas Amphibian, took off from Bolling Field, June 12th and proceeded to Alaska via Dayton, Ohio; Fort Sill, Oklahoma; Midland and El Paso, Texas; Rockwell Field, Calif., and Seattle, Wash. He departed from the last-named city on June 22nd, flying to Skagway, Alaska, via Alert Bay and Swanson Bay, B.C., and Juneau, Alaska. He returned to his home station on August 14th.

In a long flight, directed by the Commander of the 1st Wing to test GHQ Air Force equipment, Colonel Tinker flew from Hamilton Field, with two stops at Salt Lake City, Omaha and Indianapolis. The return flight to Hamilton Field on July 9th was accomplished in 16 hours and 55 minutes, with stops at Indianapolis, Scott Field, Denver and Salt Lake City.

In a flight of over 400 miles and four hours of actual time, Captain Charles G. Williamson, Air Corps, flew from Hamilton Field to Clover Field, Santa Monica, Calif., with the cockpit hooded. Lieut. Edward W. Virgin, Air Reserve, accompanied him as emergency pilot. The pilot made no outside observation until directly over Clover Field, flying only by instruments and checks on them afforded by the radio beams.

Brigadier-General Frank M. Andrews received official credit for three new world's seaplane records as the outcome of his flight on August 24th from Langley Field, Va., to Floyd Bennett Field, Brooklyn, N.Y., to Bolling Field, D.C., and return to Langley Field. On this trip he covered the course in three hours, 45 minutes and 13 seconds, establishing a new speed record for 1,000 kilometers (621 miles) with a pay load of 2200 lbs. He automatically established records for speed over the same distance without load and with a load of 1100 pounds. These three new records were established in a Martin B-12W Bomber, with pontoon flotation gear in place of the normal landing wheels.

Flights on August 29th at Wright Field, Dayton, Ohio, by personnel of the Equipment Branch of the Materiel Division, resulted in the suc-

cessful completion of automatic radio navigation. A Martin Bomber, equipped with a Sperry automatic pilot, and a standard radio compass developed by the Air Corps, was flown with additional apparatus combining these two devices. After the gyro pilot is engaged and the radio compass is tuned to a selected radio transmitter, the airplane proceeds to that destination irrespective of its heading just prior to that time. On reaching the radio transmitter at destination, the airplane circles, each time returning to the location of the radio station until the device is disengaged.

The 5th Composite Group, Luke Field, participated in an Alpha flight on September 30th, in honor of the visit to Hawaii of the Secretary of War.

On November 17th, Army pilots from Clark Field, P.I., intercepted the Japanese "Good Will" plane off the west coast of Luzon towards the end of its flight of 3,820 miles from Tokyo to Manila.

Flashing across the United States like migratory birds heading south for the winter, 29 Bombardment airplanes of the 7th Group, Hamilton Field, Calif., under the command of Lieut. Colonel Clarence L. Tinker, made what is believed to be a record for massed flight when they landed at Vero Beach, Fla., in the elapsed time of 21 hours and 50 minutes. This time included stops for servicing at Fort Bliss, El Paso, Texas; Barksdale Field, La., and Maxwell Field, Montgomery, Ala. These flights participated in the field exercises of the GHQ Air Force in December.

Flying Missions of Mercy

While the Provisional Cold Weather Test Group was at Sheboygan County Airport, Mich., a call for aid came from the State Department of Michigan, it being reported that a lone fisherman was marooned on Big Beaver Island, approximately 12 miles off shore in Lake Michigan. Lieut. Ott, in an C-43, departed from the airport, rescued the fisherman, and was back at the airport an hour and 25 minutes later.

The cold weather fliers, when at Duluth, Minn., on February 9th, were requested to dispatch to Ely, Minn., two tanks of oxygen, a CCC worker at that point being desperately ill from double pneumonia. The oxygen and a tent were loaded aboard a Bomber, and it arrived at Ely in time to save the life of the CCC worker. Captain C.E. Giffin, pilot, accompanied by Lt. Birrell Walsh, was forced to fly at less than 100 feet altitude on this mission.

Demonstrations on Army Day

Army Day, April 6th, saw flying demonstrations by Air Corps personnel in various sections of the country and in the Insular possessions.

At San Antonio, Texas, there was a night flying demonstration on April 5th, and on the following day, 48 planes from Randolph Field flew a "U.S.A." formation over the city. A 15-ship formation and a 3-ship formation were flown over the city at the same time.

Airplanes of the First Wing, GHQ Air Force, flew to various localities in California. There was also a night flying demonstration at Griffith Park, Los Angeles.

An aerial review was held at Barksdale Field, V-6935, A.C.

Shreveport, La., and the entire Third Attack Wing flew over the City of Shreveport immediately thereafter.

The 18th Pursuit Group, Wheeler Field, T.H., and the 5th Composite Group, Luke Field, participated in a wing review over Honolulu on April 5th as part of the Hawaiian Army Day program. Both groups joined with all other military forces of the Hawaiian Islands in placing extensive military exhibits on the capitol grounds at Honolulu for the benefit of the general public.

The 1st Pursuit Group, Selfridge Field, Mich., staged two tactical problems, performing demonstration flights over Detroit and Chicago. A flight of 18 P-26A planes was commanded by Captain George P. Tourtellot, and a similar flight over Chicago by Lieut. Col. Ralph Royce.

FLOODS AND FLOOD RELIEF FLYING

Operations of Flight "D", 18th Observation Squadron, were suspended during June, when Marshall Field, Fort Riley, Kansas, was entirely flooded as the result of heavy rains.

Flights were made over the flooded areas all along the rivers emptying into the Kaw to determine the extent of the overflow and the damage caused thereby.

A Bombardment plane, piloted by Master Sergeant C.F. Smith, on duty with the Transport Service at the San Antonio Air Depot, ferried on June 15th food supplies to 60 youths of the Citizens Military Training Camp who were marooned by high water at Medina City, the flood being occasioned by an unprecedented deluge of rains in this part of Texas.

Food supplies from the Red Cross were ferried in Bombers from Kelly Field to various towns in the vicinity of Uvalde, seriously damaged by floods. Other planes were flown by Kelly Field pilots to warn persons residing in homes in the path of the oncoming flood waters.

Due to the inundation of Western Oklahoma, after a week of heavy rains, Flight "E" of the 16th Observation Squadron, Fort Sill, Okla., was called upon on May 19th to patrol the flooded areas and notify rescue groups by drop messages the location and condition of any marooned people sighted.

Exceptionally hard and incessant rains causing serious floods in central Luzon, isolating Clark Field and Fort Stotsenburg, and stopping all ground transportation to the south and north, pilots of the 3rd Pursuit Squadron, Clark Field, P.I., were able to perform a real service by aiding in the inspection of the flooded areas, transporting food and water to stranded parties and delivering mail.

AERIAL PHOTOGRAPHY

The 2nd Photo Section, Langley Field, Va., completed an aerial survey of the Fort Bragg Military Reservation for the Corps of Engineers. The survey was made with a 5-lens mapping camera at an altitude of 20,000 feet.

Captain Willis R. Taylor, of France Field, Panama Canal Zone, assisted by Technical Sergeant George W. Edwards, completed an aerial survey of the Guatemalan-Honduran-El Salvador boundary line. Approximately 2,250 square miles of territory was photographed.

The 11th Photo Section at Wheeler Field, T.H., made a photographic record of the high alti-

tude bombing conducted by Air Corps squadrons at Wainanalo. During the complete test the total time flown was 5 hours and 55 minutes, in 4 flights. Fifty aerial exposures were made. No difficulty was experienced in catching the bursts of the bombs on the target.

During a training flight in night photography with the latest aerial night photographic equipment, members of the 23rd Photo Section, March Field, made photographs of the Exposition at San Diego, Calif., which were the equal of those taken during daylight hours, thus demonstrating the efficiency and advancement of military photography.

CHANGES OF STATION

The 3rd Attack Group moved from Fort Crockett, Galveston, Texas, to Barksdale Field, Shreveport, La., during the latter part of February, joining the 20th Pursuit Group, and effecting the consolidation of the 3rd Wing at that station under the command of Colonel Gerald C. Brant.

The jurisdiction of the War Department over Rockwell Field, Calif., terminated on October 25th, when the Navy took over this field. At the same time, the Army took over the jurisdiction of the Naval Air Station at Sunnyvale, Calif. As a result of this interchange of stations, 14 officers and 279 enlisted men of the 19th Bombardment Group were transferred to March Field, Calif. The 19th Airship Squadron, consisting of 2 officers and 118 enlisted men, was transferred from Langley Field to Sunnyvale. The Air Depot will remain at Rockwell Field until arrangements for its accommodation can be made at some other place.

The Navy also took over that part of Ford Island, Pearl Harbor, garrisoned by the Air Corps, and will occupy it as soon as facilities for the Army units can be obtained elsewhere.

The 88th Observation, Brooks Field, Texas, which is part of the 1st Wing, HQ Air Force, was moved to its new station, Hamilton Field, Calif., towards the end of September. Six airplanes of the squadron made the flight to the West Coast, and the transfer of equipment and remaining personnel was effected by trucks and automobiles. Upon arriving at Hamilton Field, the Squadron was equipped with long range Amphibian planes, required in distance reconnaissance work, much of which will be performed over water.

DECORATIONS AND AWARDS

Decorations and awards made during the calendar year 1934 to Air Corps personnel for heroic conduct or distinguished service in connection with flying are enumerated below:

Distinguished Flying Cross:

In the presence of the entire garrison at Hamilton Field, Calif., on July 3rd, Colonel Roy C. Kirtland, Air Corps, Air Officer of the 9th Corps Area, presented the Distinguished Flying Cross to Captain Frederick L. Anderson, for heroism displayed while participating in aerial flight on December 14, 1934. While flying over the congested part of the city of San Francisco, his airplane caught fire. Directing his mechanic to jump, he remained at the controls, despite the fact that the cock-

pit was almost completely enveloped in flames, and piloted the plane away from the city, making a parachute jump when directly over San Francisco Bay. He was rescued by a crew from a Naval vessel.

At Mitchel Field, L.I., New York, the Commanding Officer, Col. Walter H. Frank, presented the Distinguished Flying Cross on December 21st to Flying Cadet Francis H. MacDuff, Air Corps, in recognition of his bravery in holding an airplane in a slow glide after the left engine and wing were enveloped in flames, thus enabling his two passengers to jump to safety with their parachutes. By the time Cadet MacDuff was able to jump, the plane was so low that he struck the ground in the first opening swing of the parachute, but he sustained no injury.

The Mackay Trophy:

On April 9th, at Bolling Field, D.C., Major James H. Doolittle, Air Reserve, Vice President of the National Aeronautic Association, presented the Mackay Trophy to Brigadier-General Henry H. Arnold, Air Corps, in recognition of his leadership of the Air Corps Alaskan Flight. This flight, participated in by 14 officers and 16 enlisted men in ten B-10 Martin Bombers, involved a total distance estimated at approximately 8,290 miles. Flying in easy stages, after taking off from Bolling Field, D.C., on July 19th, 1934, the flight reached Fairbanks, Alaska, on July 24th. During the stay in Alaska, members of the flight successfully executed an aerial survey of that territory and photographed from the air a total of 35,000 square miles of Alaskan territory in the space of three days. The return trip to Washington featured a mass non-stop flight from Juneau, Alaska, to Seattle, Wash., a distance of 950 miles, thereby for the first time linking the territory of Alaska with the United States by air, without a stop on foreign territory.

The Collier Trophy:

For his solo blind landing, his preparatory work in connection with instrument flying over a period of 15 years, and his subsequent contribution to the advancement of aviation in perfecting the instrument landing system of the Air Corps; Captain Albert F. Hegenberger, Air Corps, was awarded the Collier Trophy on July 22nd at the White House, by President Roosevelt.

Stating that he had followed Captain Hegenberger's career with interest, the President praised his contribution to American flying knowledge. The instrument landing system was adopted not only by the Air Corps, but also by the Bureau of Air Commerce, Department of Commerce, and it has been accepted as the most practical system developed to date for either military or commercial purposes.

The Cheney Award:

There was no presentation of the Cheney Award for 1934. So high a standard of heroic self-sacrifice was set by previous winners of this award, that the Board of Officers considering recommendations for awards and trophies in the Air Corps, although recognizing the worth of several instances of heroic conduct on the part of Air Corps fliers during the year, was of the opinion that this standard should not be lowered through the presentation of the

Award for any but a most highly meritorious act.

The Soldier's Medal:

The Soldier's Medal was presented during the year to Privates Henry G. Thorne, 79th Pursuit Squadron; James G. Dilley, 94th Pursuit Squadron and Edward E. Burk, 5th Observation Squadron, for heroism displayed in rescuing persons from drowning.

The Hubbard Gold Medal:

The above decoration reserved for the greatest of explorers by the National Geographic Society was presented to the stratosphere fliers, Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, on the night of December 11th, by General Pershing, in Washington, D.C., in recognition of their flight on November 11, 1935, when they reached 72,395 feet, nearly 14 miles, the highest altitude man has ever attained.

The Frank Luke Trophy:

This Trophy, annually awarded to the Army Pursuit flier on the West Coast credited with the best aerial Pursuit gunnery performance of the year, was presented on August 8th, during the American Legion Convention at Winslow, Arizona, to 2nd Lieut. Frederick C. Gray, Jr., Air Reserve, who made a score of 1176 out of a possible 1750 points. The 73rd Attack Squadron, March Field, under the command of Lieut. Colonel John H. Pirie, Air Corps, during the course of a navigation and formation training flight, visited the convention city for the presentation ceremony.

The John L. Mitchell Trophy:

Captain Karl G.E. Gimmler, of the 1st Pursuit Group, was the winner of the Mitchell Trophy Race held at Selfridge Field, Mich., on October 19th, piloting his Boeing P-26A plane at an average speed of 212.598 miles per hour over a 100-mile closed course. There were ten competitors in this race. An interesting air program, including other races, air acrobatics, parachute jumps, etc., was staged, in addition to the main event, before a crowd of approximately 40,000 persons. The Mitchell Trophy is a gift of former General William Mitchell, of the Air Corps, in memory of his brother, who was killed during the World War, and the annual competition therefor is limited to Air Corps pilots of the 1st Pursuit Group.

The Life-Saving Medal:

Captain Charles Y. Banfill, Air Corps, was awarded a Life-Saving Medal in recognition of his services when he was instrumental in the saving from drowning of four boys in Boston Harbor on June 23, 1932.

Panama Canal Department Commander's Trophy:

The 74th Pursuit Squadron, Albrook Field, Canal Zone, was declared the 1935 winner of the Department Commander's Trophy annually awarded the best Air Corps Squadron in the Canal Zone. In competition with other squadrons, the 74th Squadron, commanded by 1st Lt. Orrin Grover, amassed the highest total of points in a number of requirements which included inspection and close order drill, establishment of a bivouac camp, including the cooking of one meal, technical condition of airplanes and hangars, administration and athletics.

Aircraft Efficiency Trophy:

The 50th Observation Squadron, Luke Field, T.H., was the winner for the Fiscal Year ending June 30, 1935, of the Aircraft Efficiency Trophy, awarded annually by the H.F. Wichman Co., Ltd., of Honolulu, to the squadron attaining the highest efficiency in the operation and maintenance of aircraft.

Honorary Awards:

During the commencement exercises of the graduating class of the South Dakota State School of Mines, Rapid City, the Hon. George H. Dern, Secretary of War, and Captain Albert W. Stevens, Air Corps, were, among several other men prominent in the field of science, awarded honorary degrees; Mr. Dern for his high achievements in the profession of mining

engineering, and Captain Stevens in recognition of his ability as a leader and as a scientific observer in the greatest of stratosphere flights.

At a meeting on September 19th in New York City of the Council of the Institute of the Aeronautical Sciences, Major General Benjamin D. Foulois was elected an honorary member of the Institute for his courageous foresight in laying the foundation of military aviation; for the personal sacrifices he made in pioneering a field which has become a major factor in the national defense of all countries; for his advocacy of the primary position aircraft should occupy in commerce and military strategy, and for his leadership in utilizing the aeronautical sciences for the technical development of the flying equipment of the Army.

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FLIGHTS BY THE FOURTH COMPOSITE GROUP IN PHILIPPINES

Four altitude flights were recently made from Nichols Field for the purpose of obtaining Cosmic Ray data for use by Dr. Milliken in his studies. Dr. H.V. Neher, from the Calif. Institute of Technology, was the scientist under whose supervision the flights were made.

A P-12E airplane was used, all unnecessary equipment being removed. At first considerable trouble was experienced, due to moisture forming inside the electroscope, but after a drying agent was placed in the instrument good results were secured. Captain John W. Kirby and Lieut. P.K. Morrill were the pilots.

Dr. Neher, his work completed for the present, departed for the United States on November 26th. He plans to return in the near future, however, to secure additional information by means of free balloons with which he hopes to reach an altitude of 70,000 feet.

Observations in this locality are of particular importance, due to the magnetic-equator crossing Nichols Field.

During the first four months of the Fiscal Year, the 4th Composite Group has flown approximately 4400 hours. In addition to the usual training missions, several interesting flights were made in connection with inspections by General Frank Parker, Dept. Commander.

The first of these flights left Nichols Field on August 12th, returning August 14th, for the purpose of inspecting the new landing field at Basco, Bataan Islands. Four O-19C planes and the OA-3 Amphibian were used. The pilots were Lieut.-Colonel A.L. Sneed, Major Martinus Stenseth, Captains H.R. Wells and L.D. Fator. The passengers were General Parker, Colonel H.R. Andreas, M.I. Reserve, and four enlisted men.

On September 3rd, a second flight was made to Puerto Princesa, Palawan; Cebu, Cebu; Del Monte and Zamboanga, Mindanao; Jolo, Jolo; Tawi, Tawi; Sulu Archipelago; Cotabato, Davao, Mindanao; Tacloban, Leyte and Legaspi, Luzon, to inspect landing fields and military reservations. Two O-19C's and one OA-3 comprised the flight, the pilots being Captains Wells, August W. Kissner, N.L. Cote and Lieut. J.F. Haskell, and the passengers, General Parker, Colonel Andreas and four enlisted men. The flight re-

turned to Nichols Field on September 18, 1935.

On Sept. 6th, a flight of two O-19C's departed for Mindanao to join the Commanding General on his inspection of the Southern Islands. The pilots were Lieut. H.Q. Huglin and Master Sergeant S.C. Smink, and the passengers, Vice-Governor General Hayden and Mr. J.W. Jones from the Governor General's office. The flight returned to Nichols Field on September 11th.

Recently the entire Group participated in a series of welcome flights for personnel arriving from the United States for the inauguration of the Philippine Commonwealth. The first of these was for General Douglas MacArthur, who arrived on the S.S. PRESIDENT HOOVER on October 25th, to take over his new duties with the Philippine Government. The planes passed in review twice as the vessel steamed into the harbor. On November 2nd, a similar flight was made to welcome Secretary of War, Hon. George H. Dern, who arrived on the U.S.S. CHESTER.

On November 8th, the third of these reviews was flown as the Congressional Party, headed by Vice President Garner, arrived on the S.S. PRESIDENT GRANT.

On November 9th, a flight of four O-19C airplanes departed for Baguio to ferry the Secretary of War, Brigadier-General Creed F. Cox, U.S.A., and Major Harry A. Bishop, M.C., from Baguio to Nichols Field. The pilots were Lieut.-Colonel Sneed, Captains G.W. Mundy, W.R. Shephard and Lieut. C.A. Clark, Jr. The return trip was made the same day.

Hon. L.L. Crawford and Hon. William Cartwright, Members of Congress, were passengers on a flight to the Southern Islands on November 12th. Two B-3A's were used, piloted by Capt. J.S. Mills and Lieut. W. Steele.

Lieut. C.A. Clark, Jr., commanding the 6th Photo Section, Nichols Field, with Master Sgt. Vernon H. Merson operating the camera, took aerial photographs of the inaugural ceremonies of the Commonwealth Government of the Philippines on November 15th. Photographs were also taken of the arrival and departure ceremonies of Vice President Garner, the Secretary of War and the Congressional Party. Other photographs were made of the Guard of Honor being presented to Mr. Garner and to the new United States High-

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THE GHQ AIR FORCE CONCENTRATION IN FLORIDA

The GHQ Air Force Maneuvers in Florida, involving ten days of intense, hard-flying tactical missions of attack and defense, during the course of which more than a million air miles were covered under simulated war conditions without a major mishap, indicated in no uncertain manner the high mobility of the organization, the excellent standard of flying efficiency of the participating personnel, the great reliability of the flying equipment and the exceptional aircraft maintenance system.

Among other high lights incident to these maneuvers were the accomplishment of this first concentration of airplanes attempted by the GHQ Air Force since the new set-up was created within the elapsed time of 22 hours and 50 minutes without a casualty to either men or planes, and the flight of the 7th Provisional Bombardment Group of 27 Martin Bombers from Hamilton and March Fields, led by Lieut. Colonel C.L. Tinker, in an elapsed time of 21 hours and fifteen minutes, with three stops en route. The airplanes in the Florida concentration crossed mountains and plains in various kinds of weather conditions and landed to score a "bull's-eye" for accuracy and timing.

Expressing gratification over the elapsed time required for the arrival of the air armada at the concentration points, General Frank M. Andrews, GHQ Air Force Commander, stated that he was satisfied with the quality of the planes but not with the quantity. The arrival of planes in Florida on scheduled time from points all over the country demonstrated that the GHQ Air Force can be concentrated in any part of this country within 24 hours.

General Andrews arrived at Miami on December 1st in a Douglas Transport and was accompanied by members of his staff, as follows: Colonel W.E. Cooper, Surgeon; Major W.W. Dick, Adjutant General; Major Barney M. Giles, Deputy Chief of Staff; and Major Ralph H. Wooten, Asst. to the Asst. Chief of Staff, G-4. They left Langley Field, Va., at 8:30 a.m., inspected the base at Vero Beach, Fla., and arrived at Chapman Field at 4:00 p.m. The tent Headquarters of the Commanding General at Chapman Field and that of the Second Wing at the Miami Municipal Airport were complete cities within themselves. They were established by the ground force prior to the arrival of the flying units and, in addition to camp streets, included in their layout field kitchens and mess halls, complete telephonic communication systems and mail services.

Other members of General Andrews' staff arriving in advance of the Air Force were Major Robert Olds, Air Force Inspector, in a Bomber, accompanied by Col. R.L. Maxwell, Ordnance Officer,

and Col. C.C. Drake, Air Force Quartermaster. In another Bomber, piloted by Major Charles H. Howard, Communications Officer, was Lieut. Higgins, of the GHQ Air Force Headquarters Squadron. Arriving in Attack planes were Lieut. Colonels Follett Bradley and Joseph T. McWarney.

As concentrated in Southern Florida, the GHQ Air Force retained its three-wing organization, though their composition was changed and the units were skeletonized and operated at a strength considerably below their normal composition. One unit of the Third Wing, the 20th Pursuit Group, was shifted to the Second Wing.

The 1st Wing, under the command of Brigadier General Henry H. Arnold, was based at Vero Beach.

The 2nd Wing, under the command of Brigadier General Henry C. Pratt, comprising 30 Pursuit planes from Barksdale Field, La., and 27 planes from the First Pursuit Group, Selfridge Field, Mich., was based at the Miami Municipal Airport. The leader of the Pursuit forces in the air was Lieut. Colonel Millard F. Harmon, the present commander of the 20th Pursuit Group at Barksdale Field.

The 3rd Wing, under the command of Colonel Gerald C. Brant, and comprising the 19th and 90th Attack Squadrons from Barksdale Field, was based at Fort Pierce, Fla.

The headquarters of these three wings were connected by a loop teletype, and orders were transmitted to them simultaneously.

On Tuesday, December 3rd, the first day of the maneuvers, Miami was saved from a tactical aerial bombardment through the presence of a swift and powerful Pursuit force which "destroyed" the attacking fleet in a "dog fight" over the city of Hollywood, Fla. This problem in the maneuvers of the GHQ Air Force demonstrated the value of air defense, observers pointed out. The sniping and harbor facilities of Tampa, an unprotected city, were "devastated" as was early construction work on an air base on Virginia Key to the east of Miami. At 11:00 a.m., 18 Bombardment planes from the First Wing, and under the command of Lieut. Colonel Tinker, theoretically dropped 36,000 pounds of bombs on Tampa's port. Then the Bombers headed for their base preparatory to launching an attack upon Miami. Observers of the defensive force spotted this proposed attack at 12:30 p.m. over Hollywood, and General Pratt sent up 36 Pursuit planes, under the command of Lieut. Colonel Harmon, for the combat, which lasted ten minutes before the "enemy" force was "annihilated".

In the meantime, however, 18 Attack planes of the Third Wing, under the command of Major William N. Amis, swept down the coast and dropped about 350

"bombs" on Virginia key, completely interrupting the construction there of an auxiliary airdrome. The speedy Attack planes escaped to their base without being intercepted. The speed at which the Pursuit planes met the threatened attack was shown in the fact that every plane of the squadron was off the ground and in the air within four minutes after the alarm was sounded. In meeting the attack of the Bombardment planes, the Pursuit ships were required to be off the ground and at an altitude of 11,000 feet in nine minutes.

On Wednesday, December 4th, the defense of Miami and contiguous territory was further advanced when the defending force of the GHQ Air Force fought two pitched "battles" in carrying out tactical maneuvers. The first engagement occurred at a high altitude when Pursuit pilots of the Second Wing dove into the midst of a wing of Attack planes northeast of the city to stave off an attack to demolish an imaginary airdrome on Sand Key.

Without further preparing for combat, the Pursuit planes turned and swooped northward to intercept Bombardment planes returning from the scene of the "destruction" of a theoretical supply base at Fitzgerald, Ga. The Bombers were scheduled to return to their base via Fort Myers and Fort Lauderdale, and the Pursuit Wing sought to trap them between the two cities. These two objectives afforded the problems of the GHQ Air Force on the second day's maneuvers. It was up to the Pursuit to defend all territory within a radius of 80 miles of Miami. It was a stimulating sight when the Pursuit planes took off from the Miami flying field when the alarm was given of the approach of "enemy" aircraft. They roared across the flying field into the wind with throttles wide open and quickly gained altitude and formation for the mass attack upon the fast-approaching planes.

General Andrews observed the maneuvers with his staff from his own plane. The first "combat" was completed in 16 minutes after contact with the raiding planes was made. There were 28 Attack planes in the "enemy" formation, with the defenders being off the ground six minutes after the alarm sounded.

The Bombardment airplanes flew 1,000 miles in the attack on the Georgia objective and returned via Fort Myers and Fort Lauderdale. In this engagement the planes maneuvered at an altitude of 11,500 feet, meeting about 10 miles west of Fort Lauderdale.

General Pratt explained that the principal problem was to make contact with the approaching formation, with the organization in shape to get off and meet the Attack planes far enough away from the defended area to prevent the possibility of damage to that particular area. "There are no guns and no marks-

manship", he said. "These problems are a test of our communications system. Future problems, perhaps, will be harder to meet, and we will try methods other than the successful means of the past two days."

At a luncheon, where General Andrews and his staff were honored guests of the Greater Miami Airport Association, he stated that America is practically a self-sustaining country and that it is hard for some people to understand that some nation might try by force to take part of our possessions. "Any nation, in order to attack us," he said, "must bring forces by water to our shores and must meet and overcome our naval forces. No nation can hope to wage successful warfare against the United States unless it establishes supremacy in the air. Any enemy, to operate against us, must have land or water bases, and America must have such an air force as to deny him these bases."

Pointing out that he had under his command in the maneuvers about 156 planes, General Andrews stated that even though in this session Congress were to appropriate funds for increasing the number of planes, it would take at least two years to construct and equip them. He stated that the time for procurement is not the fault of the system or the agencies of procurement; that it takes a long time to build airplanes.

Touching on the Wilcox measure to provide air bases in strategic sections of the country, he stated that the base authorized in the southeastern part of the country is a very important one to serve as protection for southern industrial areas and as a base to flank any force attacking the Panama Canal.

In a previous talk on the subject of air bases, General Andrews stated that an air base is not a single field, but an area perhaps more than 100 miles square, with a main airdrome and many auxiliary fields. The requirements of an air base include facilities for operations, supply, maintenance, repair, housing of personnel and equipment, care of sick, and communications. It should have, not too far distant, facilities for bombing and gunnery practice. The bombing and gunnery range should, where practicable, be contiguous to water, so that planes taking off with bombs will not have to fly over inhabited areas; and also to facilitate the operation of amphibians and other types of water aircraft. The permanent Air Corps station should be near a city for convenience in supply and housing and also to afford recreational and educational facilities for the garrison.

Other speakers at the luncheon were General Pratt and Colonel Hugh J. Knerr, Chief of Staff of the GHQ Air Force. The former explained Pursuit problems, while the latter emphasized the vital importance of communications, without



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which an Air Force cannot be operated. He stated that adequate sleep and proper food is vital to Air Force personnel. "The force here", he stated, "is not adequate to defend even a small part of the United States. What you see here is only a small part of that required for the entire country."

Tactical maneuvers were continued on Thursday, December 5th, with one wing extending its activities as far north as Valdosta, Ga. The day's problems included two main objectives, involving the Bombers at Vero Beach, the low-flying Attack planes at Fort Pierce and the Pursuit protecting the Miami area. The Attackers were instructed to plunge southward at the Municipal Airport to "destroy" its "nest" of Pursuit ships which for the previous three days had interfered with the attacking wing's missions.

Simultaneously, the Bombers were ordered to proceed northward via Jacksonville to Valdosta, Ga., to "demolish" an imaginary supply depot similar to the one "wrecked" the previous day at Fitzgerald, Ga. Valdosta was understood to be an "unprotected" city, similar in importance to Tampa, where "great damage" was caused by prior "bombardments". With the mission accomplished, the Bombers roared southward over Inverness to Tampa to "wipe out" oil storage tanks, then continued to Everglades and cut back east to Hollywood, returning to their base.

It was the duty of the Pursuit Group not only to ward off the Attack planes but also to intercept the Bombers "somewhere in the Miami area", which extends in a radius of 100 miles from the city, before their return to their base. Miami was "bombed" slightly in the latter engagement, when nine of the Bombardment planes escaped the attack of the defending Pursuit and reached one section of the city before being driven off, although the observation stations of the defense group had been established at a further distance from the city than heretofore in the maneuvers. This was due to the simultaneous threats from both the Attack and Bombardment planes.

The difficulties of the defense plans are shown by the fact that the Pursuit, having been informed of the threatened attacks from observation posts, drew in their flying lines to a circle around Miami having a radius of only 15 miles. In this problem the Pursuit planes were able to ward off the second threat of the day of the Attackers, and after disposing of the danger from that quarter concentrated their efforts towards driving off the Bombers. They, however, split into two squadrons, nine ships flying over part of Miami and "dropping" their explosives.

It was evident to observers that there were not enough Pursuit planes in

action properly to protect the city from the combined efforts of the two "enemy" groups. The first Attack plane threat was intercepted 31 minutes after leaving Fort Pierce. In the second effort of this group, they divided, one squadron flying to sea on a southeast course and the other traveling southwest. This maneuver failed to split General Pratt's defense force, although the plan of the Attack planes, directed by Colonel Brant, was a strategic move.

After the day's maneuvers, staff officers were unanimous in the opinion that the problem illustrated that the Pursuit Group must have at least four times the number of planes in the attacking squadrons in order to defend a given point, as the element of surprise is with the attacking force. The problems, too, demonstrated the vital importance of the complete functioning of communications.

On the night of Friday, December 6th, Miami was given a demonstration of warfare at night, when nine Bombers swooped down the Florida coast and attempted to "devastate" its port facilities. The Bombers arrived over the city at 8:45 p.m., speeding over Biscayne Bay at an altitude of about 4,000 feet. Ground troops were unable to discern them. Their presence was noted when they dropped six giant Ordnance flares, each of 5,000,000 candle power, over the Bay to simulate actual bomb dropping.

The Bombardment Commander, General Arnold, directed that no additional flares be dropped because of prevailing strong easterly winds which swept the first long-burning flares close to Miami's waterfront. The attackers escaped without an "engagement" with protecting forces.

Earlier in the day, the Bombers slipped through an observation net encircling Miami at a radius of 100 miles to demolish an imaginary aircraft carrier at Key West. Simultaneously, Attack planes struck at an "airdrome" on Key Largo, south of Miami, but met the Pursuit ships of the 2d Wing over Hollywood. A sharp "battle" theoretically occurred, in which it was presumed the Attack squadron was "wiped out". Reviving quickly, however, in the best "problem warfare manner", the Attack squadron took the air again and "destroyed" an undefended "airdrome" at Orlando, Fla.

The maneuver again demonstrated the vital importance of communications, and throughout the tactical action during the day commanders maintained complete transmitting and receiving service with squadron leaders.

The intelligence staff of the Bombardment Wing heard "rumors" of a second aircraft carrier approaching the Florida east coast after the imaginary carrier had been "destroyed" at Key West. Scouting planes located the imaginary second carrier 60 miles off Vero Beach, and it was the next objective of the Wing. In

this maneuver the Bombers went out for the carrier at 10:25 a.m., and returned unharmed to their base at Vero Beach at 11:15 a.m. Not so fortunate were the Attack ships basing at Fort Pierce. As they headed for the "airdrome" at Key Largo, they encountered the Miami Pursuit ships and were technically "annihilated" in the combat over Hollywood.

Still another attack was made on the Miami Municipal Airport. This was partially successful, as "some damage was observed". Several planes of the Pursuit Group, however, were able to avoid the surprise attack, getting into the air and engaging the "enemy", although greatly outnumbered.

No actual casualties to either men or equipment were reported thus far, and wing commanders expressed their satisfaction with the trouble-free success of the war games.

Following almost a week of intensive work, the various units of the GHQ Air Force were grounded on Saturday, December 7th, for a thorough mechanical check-up of equipment. The officers and enlisted men of the 7th Bombardment Group, based at Vero Beach, were hosts to citizens of the city when "open house" was observed at the camp. The visitors were shown the technical details of the airplanes and their operation and taken on a sight-seeing tour of the camp, just east of the airport and a small "city" in itself.

The 59th Service Squadron from Langley Field, Va., with a train of 75 trucks, under Major H.H. Holland, was divided into two detachments, one at Vero Beach and the other at Fort Pierce. They erected the camps at these two concentration points.

On Sunday, December 8th, 36 Pursuit planes took off and landed four times during four hours of defensive work in the Miami area to save it from "assaults" of Bombers and Attack planes from Vero Beach and Fort Pierce bases. On two occasions the Pursuit intercepted 18 Bombers, under the command of General Arnold. After the first interception over Fort Lauderdale, the Pursuiters noticed that the Bombers reduced their speed as they flew away on a northwesterly course. By proper timing, the Pursuiters were able to intercept the Bombers again about 50 miles north of their objective.

Eighteen Attack planes, under the command of Colonel Brant, followed the Bombers southward, but were intercepted by Pursuit craft. A theoretical victory was claimed by the Pursuiters when their activities ended with their final landing at the Miami Airport. At Vero Beach and at Fort Pierce, however, the attackers also claimed that they had accomplished their objectives.

It may be stated here that the Pursuit planes flew without radio direction from the ground and solely on a compass

course in order to prevent the "hostile" air force from learning, through the medium of radio messages, where the "defenders" were lurking high in the air.

Massed groups of Bombers and Attack planes launched on Monday, December 9th, a series of assaults upon Miami in an endeavor to "wipe out" the entire metropolitan city. The Attack planes "poured" imaginary machine-gun bullets upon the defenders as they dropped equally imaginary bombs throughout the area in their flight, while the Bombers "devastated" a large section of the city. This assault, theoretically "demolished" Miami. As in the previous week, the Bombers made a successful night raid, flying high over the city's harbor and port facilities and dropping giant flares to simulate heavy bombs.

Prior to the "attack" on Miami, the Bombers massed over defenseless Port Tampa and "destroyed" shipping and harbor facilities. Sixteen planes, theoretically laden with destructive missiles, pounded the unsuspecting port. Recrossing Florida after "reducing" the west coast port to "smoking ruins", the Bombers then joined with the Attack planes in their pitched "battle" in the Miami area.

It was demonstrated again that no "enemy" plane can enter the Miami area, extending in all directions for 100 miles, without the risk of a determined effort by the Pursuit Wing Commander to destroy it. Six of the Bombardment planes escaped the trap of the defending Pursuit to carry out their mission of bombing Miami. The Attack planes came in twice and were "destroyed" each time. During the second threat by the Attack planes, they were engaged in combat some 18 miles north of the Municipal Airport, and while this "battle" was being waged, observation radios flashed the signal that four groups of Bombardment planes were sighted. Upon receipt of this information, General Pratt ordered the defending forces to split into two sections. Combat leaders whirled and cut across the 20-mile arc of defense to engage the latest threat after "finishing" off the Attack planes.

The Air Force problem for the defensive group was to see if the Pursuit planes could go farther away from their base than was the case the past week and still be able to defend the city. Complications ensued when the Bombers divided into groups and swept within the defensive area while the Attack planes were on the outskirts.

In the assault on Port Tampa, the attacking force of 18 Martin planes, under the command of Lieut. Col. Tinker, flew a total of 650 miles in 3½ hours, the planes leaving Vero Beach at 12:10 p.m., and returning at 3:40 p.m. The outward flight was made via Orlando, and the return flight via Miami.

Two flights of the 90th Attack Squadron left Fort Pierce at 11:00 o'clock to

make a theoretical attack on an "air-drome" three miles north of Hialeah. They were intercepted ten miles west of Lake Worth by the "enemy's" 36 Pursuit planes from Miami and were repulsed. The Attackers were under the command of Major Amis.

The "war" ended on Tuesday afternoon, December 10th, and peace was declared. Miami, which had suffered "devastating bomb raids" during a period of a week and a half, settled down to enjoy the All-American Air Races. All the three wings of the GHQ Air Force concentrated their full strength in a common objective and streaked out to sea in search of the "enemy".

After the "War" had ended, General

Arnold and Colonel Brant immediately wired their congratulations and hearty good wishes to General Pratt, the defending commander at Miami. General Pratt returned equally cordial messages.

Wednesday, December 11th, was spent in maintenance of the airplanes and equipment. General Andrews made a tour of inspection of the four bases used during the maneuvers - Miami Municipal Airport, Chapman Field, Vero Beach and Fort Pierce. The 160 planes of the GHQ Air Force, those including the planes of the combatant units as well as the planes of the various staff officers and transport planes, began concentrating on Miami for the All-American Races.

NEW GENERAL OFFICERS OF THE AIR CORPS

Announcement was recently made by the War Department of the appointment of Colonels Gerald C. Brant and Henry B. Clagett, Air Corps, to the rank of Brigadier-General (temporary).

General Brant remains at his present station, Barksdale Field, La., in command of the 3rd Wing, GHQ Air Force. General Clagett will take station at March Field, Calif., and assume command of the 1st Wing, GHQ Air Force, replacing Brigadier-General Henry H. Arnold, recently ordered to Washington, D.C., as Assistant Chief of the Air Corps.

General Brant has been in command of the 3rd Wing since the organization of the GHQ Air Force in March, 1935. His biography was published in the issue of the News Letter of July 1, 1935.

General Clagett, at the time of his new appointment, was attending the Army Industrial College, Washington, D.C. He was born at Fort Wayne, Mich., December 19, 1884; attended public schools in Texas and Wyoming; the Trinity School in New York City; and high school in Cincinnati, O. He then received an appointment to the U.S. Military Academy and, upon his graduation on June 12, 1906, was appointed a second lieutenant and assigned to the 23rd Infantry, with which he served in the Philippines, in Indiana and Texas, until December, 1912. He was promoted to 1st Lieutenant on May 9, 1911, and assigned to the 23rd Infantry. On December 6, 1912, he was appointed Aide to President William H. Taft, and remained on that duty until the latter went out of office. He was reappointed Aide to President Woodrow Wilson on March 4, 1913, and continued in that position until May, 1914, when he rejoined the 23rd Infantry at Texas City, Texas.

Transferred to duty in the Panama Canal Zone, he was stationed in the Isthmus until September 1, 1917, serving

with the 10th Infantry from Feb. 1915, until July 1, 1916, when he was promoted to Captain; with the 33rd Infantry until June 1, 1917 and, finally, with the 5th Infantry.

Upon his appointment as a Major in the Aviation Section, Signal Corps, Sept. 1, 1917, General Clagett was assigned to duty at Kelly Field, Texas, and commanded successively the 1st, 3rd and Provisional Recruit Regiments, also the Recruit Division, from October 13, 1917, to May 8, 1919. He was stationed at Rockwell Field, Calif., from May 18 to August 22, 1918, completing final primary training, also gunnery training.

Returning to Kelly Field on September 2nd, he remained there until January 28, 1919, being in command of the Flying Department, and later commanding officer of the field.

Until September 21, 1919, he was on duty as Supervisor of the Southwestern District at Dallas, Texas, during the course of which he was in command for several months of the Dallas to Boston Flight, the purpose thereof being to stimulate recruiting for the Air Corps.

Returning again to Kelly Field, he commanded for brief periods the 1st Surveillance Group, the 1st Wing and the 1st Day Bombardment Group until his assignment on December 22, 1919, as Air Officer of the Fourth Corps Area.

Assigned as student at the Air Corps Tactical School at Langley Field, Va. in October, and remaining at that field after his graduation until January, 1924, he assumed command of Bolling Field, D.C., and continued in this capacity until Aug. 24, 1926, when he was assigned as Air Officer of the 9th Corps Area. Four years later he returned to San Antonio and commanded the Primary Flying School, Brooks Field, July, 1930-October, 1931, and the Advanced Flying School, Kelly Field until March 1, 1935. At various periods he also commanded the Air Corps Training Center.

From March to August, 1935, Gen. Clagett was Chief, Buildings and Grounds Div., Office Chief of the Air Corps. He was then assigned to the Army Industrial College.

SITTING ON TOP OF A VOLCANO
By the Wheeler Field Correspondent

The piloting personnel of the 18th Pursuit Group were afforded an opportunity lately such as seldom falls to the lot of an Air Corps officer. On the evening of November 21st, practically all the pilots of the Group were at the Kilauea Military Camp on the Island of Hawaii, when the eruption of Mauna Loa volcano occurred.

The Group had departed from Wheeler Field on Oahu at 2:30 a.m., on November 19th on a routine training flight to the eastern islands of the Hawaiian group, for the purpose of reconnoitering and landing upon all the emergency fields on the Islands of Molokai, Maui, Lanai and Hawaii.

The first landing was made on Kalaupapa Field, on Molokai. This field is on a small flat peninsula jutting out from the foot of the vertical thousand-foot cliffs forming the escarpment of the north shore of the island. The old caved-in crater of the extinct volcano which built the peninsula occupies most of it but leaves room for a fair two-way field and for a small world-known leper colony. Many people from the leper colony came down to see the planes land, and the physical misfortune of these people impressed the Group personnel more than our airplanes could have interested them.

Continuing to the eastward, the entire Group landed on four more emergency fields which for variety would be hard to surpass anywhere. Along the north shore of Hawaii, thick weather, low ceiling and rain sandwiched the Group between vertical cliffs, low solid clouds and a rough choppy sea. Prudence was the better part of valor, and the airmen flew back to Upolu Point on Hawaii and spent the night there.

The following day the weather was still dangerous along the north shore of Hawaii, so the entire Group flew around the island to the south and, despite low ceiling and rain near Hilo, worked into the airport at Hilo safely and without serious difficulty.

All the personnel were taken to the Military Rest Camp on the brink of Kilauea volcano, for the night and comfortably housed in the cabins there, prepared for a quiet, restful one-day lay-over before the return flight.

Nature, however, decreed otherwise. About 1:41 a.m., on November 21st, the entire camp was awakened by a severe earthquake, which lasted about one minute and was violent enough to rattle the walls of the cabins against the beds, shake pictures on the walls and rattle light objects in cupboards. There real-

ly is not much that one can do about an earthquake at 1:41 a.m., so everyone went back to bed and forgot it until morning. Dr. Jagger, the Government Volcanologist, determined from his readings that the quake originated deep in the earth and about four miles from the crater of Mauna Loa on the northeast slope. This finding was announced about noon.

Two excellent talks on volcanos were given the Group, one of them illustrated by very good motion pictures of the Kraka Toa eruption. With this background it was now time for a practical demonstration which was forthcoming about 6:30 p.m. First, word was received from the observation party on Mauna Loa that one of the great rifts or cracks was commencing to show molten lava which was steadily rising in the crack. Within a brief period the molten lava was doing something, but the low clouds and the smoke concealed exactly what it was. However, the glare through the thin layer clouds was, reflected on the higher layer with an intensity that was visible on Oahu - two hundred miles away.

Plans were hastily made for an early take-off on November 22nd, and the entire Group flew to the scene of activity on Mauna Loa. The weather was perfect, and all had a splendid view of a major volcano in action. The crevice from which the lava was vomiting forth was about 12,000 feet above sea level and about 1,500 feet below the rim of the crater. The bulk of the activity was concentrated along the crack for a distance of about one-eighth of a mile. Molten lava and rocks were being played into the air in three main fountains, each to a height of about 300 feet. At times the height of the fountains would increase to 800 feet. Between the major fountains, lesser fountains threw incalculable gallons of boiling rock into the air to the height of a mere hundred feet or so. The top of the fountains was crowned by a huge vapor cloud which plumed into a beautiful 3,000-foot anvil-shaped mass as it drifted away slowly in the wind. The sulphur fumes and steam clouds prevented flying close to the eruption on the east. The heat was terrific, and convection currents threw the airplanes around violently.

From the base of the fountains a river of wine red lava, a quarter of a mile wide, flowed away at an estimated speed of 30 miles an hour, with chunks of ash and rock the size of a room floating along its surface. Half a mile from the fountains the stream divided, and a fourth of it poured back into a great crack in the earth. The flow into this crack looked

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HOW NEW ENGINES ARE DEVELOPED
by F.L. Prescott, Power Plant Branch, Wright Field.

The story of the development of a new engine is an interesting one, especially to those who are not too close to the job and too much engrossed with the details to get a bird's-eye view of the project as a whole. Several such developments are under way at the present time, looking to the supplying of the Air Corps with engines of adequate power, endurance, and economy to meet all competition.

In order to insure that the multi-cylinder engine will be able to pass its tests with a minimum of damage and loss of time, the cylinder and valve gear are incorporated in a single-cylinder test engine upon which severe tests are imposed in order to demonstrate that the component parts, such as valves, valve springs, rockers, cylinders, pistons, and connecting rods, have been adequately proportioned and are safe for use in the multi-cylinder engine construction.

In conducting these single-cylinder tests a number of discoveries of unusual interest have been made. Among these is the fact that standard engine parts have been operated under single-cylinder conditions at loads and stresses far in excess of those for which the parts were designed. This applies particularly to pistons, valves, and connecting rods. It is, of course, realized that multi-cylinder crank cases and crankshafts are still subject to development in the multi-cylinder stages of engine development. In the course of the tests, thus far conducted, it has been further found, for example, that liquid-cooled cylinders of conventional design can stand operation at brake mean effective pressures of 400 lb./sq.in. and better, provided detonation and pre-ignition do not occur. It is believed that the Materiel Division holds the world's record for output in brake mean effective pressure from a single-cylinder engine. This was accomplished on a single cylinder of special design having a bore and stroke of 4-5/8 by 7 and operating at 1900 r.p.m. The fuel used was the best available, but reached its limit at slightly over 400 lb./sq.in. brake mean effective pressure, from which point upward detonation was suppressed by means of water supplied with the fuel. A maximum brake mean effective pressure of 579 lb./sq.in. was recorded and it was also found possible to take an indicator diagram under these extreme conditions, using the pressure indicator developed by the Materiel Division. It was found that the compression pressure shown by this indicator card was approximately 350 lb./sq.in. and the maximum pressure approximately 155 lb./sq.in. The piston used in this test was a rath-

er rugged design of conventional piston with a heavy crown and heavy side walls to carry away the heat and dissipate it through the skirt to the cylinder walls.

Cylinders of more conventional design have shown outputs of 300 to 400 lb. brake mean effective pressure without the use of water as an anti-detonant. Two fuels have been found which were sufficiently high in anti-knock value to permit operation above 400 lb./sq.in. without detonation and pre-ignition when used with extremely cold spark plugs. The output of this cylinder under these conditions was about 1-1/3 horsepower per cubic inch displacement.

From these tests it appears that one of the most critical points in future high output engine design is the development of spark plugs which will resist pre-ignition and still be hot enough to resist carbon fouling. The problem of development of spark plugs for high output engines is thus seen to be a very difficult one since the two conditions named above are directly contradictory and plugs which are notoriously cold are also notoriously bad from the fouling standpoint.

Upon completion of satisfactory single-cylinder tests the multi-cylinder design is carried through, and the soundness of the design depends, to a great extent, upon the assumptions made as a basis for design. One example, serving to illustrate this point, is the design of the wartime Liberty engine. The designers of this engine were under the impression that changing the cylinder angle from sixty degrees to forty-five degrees would virtually eliminate torsional resonance of the crankshaft. It was, however, found that a fifty-hour full-power test could not be run on this engine at its designed speed of 1700 r.p.m. This was because of an extremely severe critical torsional period in the crankshaft at about 1700 r.p.m. It was also discovered that there was a rough spot in the neighborhood of 1300 to 1330 r.p.m., and under these conditions several crankshafts were broken when using fixed propellers which held the take-off speed of the engine down in this range. These failures were attributed to torsional vibration, but very little was known by the Air Corps of this phenomenon until the Division developed a torsionmeter and made an intensive study of the problem of torsional vibration in aircraft engine crankshafts. During these tests it was learned that the crankshaft vibrates in resonance with the power impulses showing six distinct vibrations per revolution at 1000 r.p.m., and vibrates at a rate of 4 1/2 vibrations per revolution at 1330 r.p.m., and 3 1/2 vibrations per revolution at 1710 r.p.m. Under all of these conditions the frequency of the system was

100 vibrations per second.

The knowledge gained from these tests, as well as the study of all available published data on torsional vibration, has enabled the engine designers to predict with considerable accuracy the location and even the magnitude of these torsional periods. It is, therefore, no longer necessary to design engines without regard to this most important factor, and methods are available for so placing these resonant speeds, or eliminating them entirely, that future engines will clearly be much freer from crankshaft trouble due to torsional vibration than has been the experience of the Air Corps in the past.

The Division expects to have available within the next year or so, one or more engines of considerably increased horsepower over those in present use and whose weight per horsepower will be

less. These engines are equipped with geared superchargers for maintaining the sea-level rating of the engine at about 1000 feet altitude and will depend for their altitude performance upon suitable installation of turbo superchargers. At least two of these engines are so designed that they can be operated in either direction of rotation by making suitable changes within the engine and thus the right and left hand engines of a two-engine installation can be operated in opposite directions, thus minimizing the effect of engine torque upon the control properties of the airplane. It is realized that much still remains to be done before these power plants are fully developed, but at least it is felt that intelligent steps have been and are being taken to insure that the future development of power plants for the Air Corps shall not lag behind those of other countries.

SITTING ON TOP OF A VOLCANO

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much like water going over Niagara does from the air. This apparently bottomless crack into which a veritable river of lava poured, and was forthwith swallowed forever from view, was one of the most impressive sights of the eruption.

To see these huge fountains of lava playing hundreds of feet into the air and the molten rock flowing down the mountain side with the snow-covered crest of Mauna Kea only 1500 feet above was a marvelous sight.

To shiver in a P-12 at 13,000 feet and then fly through the column of heated air rising from the volcano so hot that it felt warm to the face was a unique experience. To fly into the nauseous humidity of the sulphur fumes was dangerous, but to witness the phenomenal exhibition of a volcano in full eruption and be able to inspect it in detail from every angle from the air was a privilege to be enjoyed no place in the Air Corps except as an incident to service in Hawaii.

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AERIAL GUNNERY BY ATTACK GROUP PERSONNEL

The 90th Attack Squadron departed from Barksdale Field at 1:06 p.m., November 23rd, for the aerial gunnery camp at Chapman Field, Miami, Fla. The squadron consisted of 9 A-12's, 2 C-14's and one C-15. After an overnight stop at Maxwell Field, the journey to Miami was resumed the next day, and Chapman Field was reached at 3:40 p.m.

The 71st Squadron (Service) was at that time stationed temporarily at Chapman Field to service the organizations ordered there for the gunnery work and to aid

in preparing for the GHQ Air Force concentration. Much of the work they were required to do was to remedy damage that the recent storm had done to Chapman Field, and they were busily engaged in rebuilding, cleaning up debris, etc.

The 13th Attack Squadron had been engaged in gunnery work for the previous ten days and, having completed their firing, they departed from Chapman Field the morning after the arrival of the 90th Squadron. The gunnery operations of the 90th Squadron started immediately on the departure of the 13th Squadron, beginning each morning at 7:30 a.m. and lasting through the day until about 5:30 p.m., when darkness prevented further firing. This schedule was maintained through the 27th, in order to complete this training before Thanksgiving and thus have two days for maintenance of the airplanes prior to the concentration of the GHQ Air Force. The firing was completed Wednesday afternoon, all aerial gunners and all regular officers having fired the course.

In the firing, 26,665 rounds were expended; 8 old type tow targets were used for the preliminary work, and 35 new high speed targets were used for record fire. The average score for the rear seat gunners was 1130 out of a possible 1900.

Sergeant Henry and Private Jones tied for high score of 1450. Twenty-six aerial gunners fired the course.

There were no engine failures during the firing, and maintenance difficulties both on flying equipment and guns were low. The weather during the firing was clear but cool. Several nights in the unheated tents were decidedly uncomfortable, but it seems that "Unusual" weather is the rule rather than the exception when extended trips are made by Air Corps units.

THE ALL-AMERICAN AIR RACES AT MIAMI

Miami's 8th Annual All-American Air Maneuvers opened earlier this year, being staged at the Municipal Airport of the Florida winter resort for a period of three days, beginning Thursday, December 12th, instead of early in January, as was heretofore customary. The officials of the Air Meet claimed the opening day was a complete success, the attendance breaking previous first-day marks.

As usual, the Air Meet was featured by races between civilian pilots; thrilling exhibitions of acrobatics by individuals and military 3-men teams; mass flights by Army Air Corps combat planes, parachute jumps, etc. The airplanes which were pitted against each other in some of the racing events were of the small types, which occasioned the appearance in print of such terms as "Flea" and "Louse".

The Meet opened with sensational flying feats by Harold Neuman, of Moline, Ill., who gave a masterful exhibition of high speed acrobatics in his "Miss Chevrolet", a low-wing, open cockpit plane, in which at one time it was estimated he reached a speed of more than 300 miles per hour as he whizzed past the grandstands at the end of a power dive.

Shortly after Neuman landed, the Army GHQ Air Force Bombers took to the air, steadily gained altitude and formation, circled, and left the airport.

Three airplanes then flashed into sight, which were recognized as the U.S. Navy "Hell Divers". Lieut. Commander K.C. Gehres was the leader of the team, and his two companions were Lieuts. Jack Raby and J. Lewis. One intricate maneuver followed another in rapid succession - loops, barrel rolls, power dives, Immelman turns, snap rolls, followed by straight-line flying at top speed.

Sixteen Army Bombardment planes came up from the south in squadron formation. They were part of the Army air armada which had concentrated for the GHQ Air Force maneuvers in southern Florida. Bucking a head wind of about 30 miles per hour after their turn, the Bombers showed excellent precision in mass formation. Their turns were something new to most spectators, as in series of threes they changed their course. They landed after a series of mass formation exhibitions.

The event next on the program was a 15-mile race for C licensed open cockpit planes of 550 cubic-inch displacement or less. Tex Rankin, veteran pilot of Portland, Oregon, and Cincinnati, Ohio, holder of the world's record for consecutive outside loops, took an early lead and was never headed. He covered the distance at an average speed of 104.547 miles per hour. Four other

pilots finished in this race.

Ben F. Stegall, of Savannah, Ga., over the same speed course, was winner of Peruvian government trophy race for C licensed open cockpit planes of 800 cubic inch displacement or less, averaging a speed of 155.19 m.p.h. He was presented with a magnificent specimen of the silversmith's art by the Peruvian Consul in Miami.

Then came, perhaps, the greatest exhibition of single acrobatic work seen in Miami, when Captain Len Povey, chief of instructors of the Cuban Air Force, exhibited great daring and ability in putting his tiny airplane through intricate maneuvers reminiscent of the late Freddy Lund. Captain Povey headed a delegation of fliers from the Republic of Cuba. The Air Corps of that Republic is relatively a new institution, but it has distinguished itself for efficiency under the tutelage of Captain Povey, who has been instructor since the organization of the Corps. The young American pilot a few years ago was summoned to Cuba to train Cuban fliers in the art and science of aviation. He received his training at Mitchel Field, and afterwards was associated with famous civilian acrobatic fliers, such as Freddy Lund, Johnny Livingstone and Art Davis. He has already trained two classes of Cuban fliers and about 15 of his students are finished pilots in the Cuban Air Force. The Cuban Air Corps instructor staged every known "trick in the bag" and added a few thrills as he thought of them.

There was a great surge of approval when the crowd recognized the Army's "Three Men on a Flying Trapeze", as they speeded over the edge of the airport. These expert Army fliers from Maxwell Field, Ala., Major Claire L. Chennault, Air Corps, 1st Lieuts. J.H. Williamson and Wm.C. McDonald, Air Reserve, again staged the "stunts" which brought world fame to themselves and renown to the military service which they represented. Their work included the longest series of maneuvers ever presented in Miami. One spectacular feat was a roll within a roll in which the planes revolved around each other while barrel rolling individually. The expertness of this maneuver brought cheers from the crowd. Then, too, there were the half rolls while completing a loop and Immelman turns. These marvelous turns, at the top of a loop, pulled in V formation, were amazing. They ended their work by speeding across the field in a very tight formation.

Harold Neuman and Gordon Mougey went aloft in their biplanes to give an exhibition of sky writing which ended in daring precision acrobatics.

The closing event of the day was formation and precision flying by 18 Attack planes, Army Air Corps, under the leader-

ship of Major William N. Amis. Army Pursuit ships, scheduled for a demonstration as the final event of the day, were kept on the ground when a threatened squall was reported. Several other events were called off because of the prevailing high winds.

Spectators attending the All-American Races on the second day, Friday, December 13th, were afforded even more thrills than those who journeyed out to the Miami Airport on the first day, for weather conditions, although still windy, permitted the complete program to be staged. The Army team "The Men on the Flying Trapeze", the Navy "Hell Divers", and the individual acrobatic fliers, Tex Rankin and Captain Len Povey, repeated their amazing flying feats, and these were supplemented by an exhibition of what the papers termed "crazy" flying by Captain Dick Granere, Canadian ace, one of the world's foremost exponents of eccentric flying; an almost similar exhibition of that type of flying by a comedy team which went under the name of the "Three Mugs of Beer", a startling display of acrobatics and accuracy in bomb dropping by Major Al Williams, and a delayed parachute jump by Clem Sohn, Lansing, Mich., "bat-wing" man, who came hurtling earthward from a plane 10,000 feet in the air to open his parachute when only 800 feet from the field. As one newspaper put it, the pilots made their planes do everything except "sit up and beg".

What Captain Granere did not accomplish with his plane would make only a short story, for he presented everything in "crazy" acrobatics that could be done. He pulled side-slips with reckless abandon from heights of only 30 feet, with his plane having the appearance of flying side-ways for long distances, and careened in wobbly fashion against head winds. Banks were executed with wing tips "scratching" the ground; and climbs to a stall and nose dives seemed to be just ordinary routine in a day's work.

Lieut. Karl Voelter, leader; Charles P. Darnes and L.A. Heard, the "Three Mugs of Beer", were attired in such fanciful costumes as to bring roars of merriment from the crowd. The aerial antics of this team were just about as "crazy" as those of Capt. Granere, shooting their small planes around the airport in a series of loops, nose dives and wing wobbling spurts of what not to do in flying.

Top speed in racing events was made by Douglas Fonda, New York, who piloted his Beechcraft cabin biplane around the triangular five-mile closed course three times at an average speed of 161.923 miles per hour to win the Glenn H. Curtiss Trophy.

The first race on the program, also a 15-mile event, was won by Larry Cook,

Lakeland, Fla., piloting a Monocoupe at an average speed of 66.619 miles an hour. The Curtiss Trophy Race was for C licensed cabin planes of 550-cubic-inch displacement, and the other event was for smaller planes.

The Army Bombardment planes took off at the finish of the first race and went through the paces in precision flying. Wing to wing and in V-shaped formations, they shot past the grandstands, circled in position and returned in bombing groups.

Later on in the program, 18 Attack planes winged their way across the field, gained the necessary altitude, turned and swept past the spectators at top speed in perfect alignment, drawing applause for the exactness of their flight and the power shown in their speed.

As the final event of the day, 36 Army Pursuit planes took off, and never has Miami Air Meet crowds witnessed such a mass flight of intricate maneuvering. These planes completely filled the air over the airport, performing a varied assortment of acrobatics in rapid succession. At one time they maneuvered in a complete circle at about 200 miles an hour and came out of it to go through a gigantic figure eight. Immelman turns were precise and cross-cuts showed high skill. This climax to the air show was ended with single line power dives, in which each pilot executed a snap roll at the end.

Hard-flying military and civilian pilots made "happy landings" in the closing events of the Miami All-American Air Maneuvers.

A low ceiling, with clouds only 1,300 feet above the Municipal Airport, somewhat curtailed the program, but there were plenty of acrobatics and precision flights in formation to hold the attention of most of the spectators until the final event was presented.

Tex Rankin spiraled down from the skies with a new unofficial American record for altitude. His instruments showed that he had reached 19,800 feet to top the previous American record of 18,543 feet, made in September, 1929, by Wilfred G. Moore at Kansas City, Mo.

Racing pilots flashed greater speed than on the two previous days. Top speed was set by R.A. Kling, Lemont, Ill., when he flew his Keith-Hyder plane three times around the five-mile course at an average speed of 239.994 m.p.h., to win the Green Trophy Race, a free for all event for planes of 550 cubic inch displacement or less.

The Dominican Republic Trophy Race of 15 miles brought out the fast time of 232.294 miles an hour, when Art Chester, Glenview, Ill., in his Chester Special low-wing craft, nosed out Kling to take first place. In the previous race, Kling just nosed out Chester, so honors between them were even.

Chester also won the Shell Trophy Race

of 30 miles, negotiating the closed course at an average speed of 229.5 miles per hour.

The Cuban Trophy Race was won by Ben F. Stegall, who covered the course at the rate of 165.117 miles per hour.

A free for all event for open cockpit or cabin planes of 200 cubic inch displacement was won by Clarence McArthur, of Tampa, who piloted his Tilbury Flash at an average speed of 105.144 miles per hour.

Harold Neuman, the Navy "Hell Divers", Capt. Dick Granere, Major Al Williams,

the Army's "Three Men on a Flying Trapeze", the comedy team of "Three Mugs of Beer", the 36 Army Pursuit planes and the Army Attack planes, each performed their special functions with neatness and dispatch. Low clouds prevented Captain Povey and Clem Sohn staging their particular specialties.

The three-day air show was completed without major mishap. The closing event was the annual aeronautical ball at the Miami Biltmore Country Club in Coral Gables - a brilliant final touch.

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SIDE LIGHTS ON THE MIAMI ALL-AMERICAN AIR RACES

The Army's "Three Men on a Flying Trapeze" won the Miami Trophy in recognition of their acrobatic flying, while Major Al Williams won the individual acrobatic trophy. Captain Len Povey won the Mexican Trophy for outstanding flying by a foreign participant.

Ben King, Washington sportsman-pilot, prior to the start of the Air Races, established two new marks for speed, over a closed course of 500 and 100 kilometers, for seaplanes of weight less than 551 pounds. He negotiated the 500-kilometer distance at an average speed of 70.48 m.p.h. Later he flew 100 kilometers at an average speed of 80.931 m.p.h. These two records will become official as soon as they are recognized by the Federation Aeronautique Internationale.

General Frank M. Andrews was initiated Chief Warhawk at the annual meeting of the Arsenickers, the Army fliers' social organization, succeeding Colonel Charles H. Danforth, former Assistant to the Chief of the Air Corps. Captain William V. Andrews, commanding officer of Chapman Field, was in charge of the ceremony, which was witnessed by nearly 500 Army fliers and guests.

On Friday, the 13th, after his daring free fall of some 9,000 feet before he yanked the rip-cord of his parachute, Clem Sohn faced more peril when he touched terra firma in the near vicinity of Army Attack planes warming up preparatory to taking off. The suction of the motors prevented the parachute closing and drew it towards the whirling propellers. Quick thinking field workers, sensing the danger, rushed across the field in motorcycles, automobile trucks and on foot. While some grabbed Sohn, others rushed to the billowing parachute to crush it to the ground.

The Air Maneuvers were moved up a month in order not to conflict with the

seasonal activities, and also as an encouragement to December visitors. The idea has taken hold better than was anticipated.

The tiny lark of the air, the Grosley "Flea", expected to cut considerable capers in the Meet, came to grief just before the show opened, when a strong gust of wind whipped it around and damaged it to such an extent that repairs could not be made in time. Its pilot, Eddie Nirmaier, was not injured.

Colonel John H. Jouett, technical aviation adviser for the Standard Oil Co., was one of the busiest officials at the Air Meet, serving in the capacity of chief of operations. One of the Miami papers stated: "Col. Jouett participated in the first race of the first of these Miami air maneuvers and hasn't missed one since. He has just returned after three years in China as aviation adviser to the Chinese Government." "Quick, Watson, the needle!

Col. J. Carroll Cone, Assistant Director of the Bureau of Air Commerce, Department of Commerce, Washington, was elected President of the World War Birds at the annual meeting of this organization at Miami on Dec. 12th, succeeding Colonel Edward Rickenbacker. Col. Cone flew with the 130th Pursuit Squadron in France during the War.

Captain Harlan W. Holden, Air Corps, on duty in the Office of the Chief of the Air Corps, served as Liaison Officer between headquarters, Columbus Hotel, and the military visitors at the Air Meet. Capt. Holden has filled this position during the maneuvers for the past several years. He was assisted by Captain A.C. Kincaid, also on duty in the Office of the Chief of the Air Corps.

Major Robert Olds, on duty with the GHQ Air Force at Langley Field, was the man at the "Mike" explaining the flying evolutions of the Army planes during the Meet.

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AIRMEN IN PHILIPPINES ESCORT CHINA CLIPPER

The 3rd Pursuit Squadron, Clark Field, P.I., shared in the thrills of welcome and joined the Group escort for the China Clipper as she came into Manila on her

initial flight. Members of the Squadron were invited by the Clipper's pilot, Capt. Musick, to go aboard and inspect it while it was anchored in Manila Bay.

Commissioner Murphy.

On November 20th, the entire Group took part in a farewell flight for Vice President Garner and the members of the Congressional party departing on the S.S. PRESIDENT JEFFERSON. The planes escorted the ship out of the harbor and dropped farewell messages on the deck.

On November 30th, the Group provided an escort for the Pan-American flying boat "China Clipper," upon her arrival in Manila with the first air mail from the United States. The flight, consisting of six each P-12B's and C-19C's and four B-3A's, led by Lieut.-Col. A.L. Sneed, Group Commander. The planes passed in review just as the "Clipper" appeared overhead, then circled until the flying boat settled to the water thirty minutes later.

On December 11th, the entire Group conducted a farewell flight over Manila Bay in honor of the departing Department Commander, Major-General Frank Parker, who sailed on the S.S. PRESIDENT HARRISON.

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BARKSDALE FIELD PERSONNEL IN FLORIDA MANEUVERS

The 90th Attack Squadron, brought to full strength in personnel and equipment by attachments from other organizations of the 3rd Attack Group, arrived at Fort Pierce, Fla., on December 2nd. The airdrome was prepared for occupancy by the 59th Service Squadron from Langley Field, Va.

A brief description of the tactical set-up and operations is fitting: The 90th Attack Squadron operated directly under the Headquarters, 3rd Wing, GHQ, at Fort Pierce. The Wing was provided with teletype and radio communications to Headquarters, GHQ Air Force, at Chapman Field, Miami. Abbreviated Field Orders were transmitted to the Wing by teletype, thence communicated to the Squadron which performed the mission.

War time conditions were simulated as closely as possible at all times. Of the three flights in the squadron, two were scheduled for each mission, the other remaining in readiness. Missions averaged two per day. Airplanes were dispersed over the entire airdrome, necessitating that take-offs and assemblies be made under the most difficult conditions. After practice, two flights were regularly able to clear the airdrome by single plane in five minutes and land the same way in four minutes.

And now a word about the master spy who stuck with us so consistently to the glory of our pursuit opponents, resumes the News Letter correspondent. Equipped with an A-12 airplane, he was with us on every mission. He "squealed" on our take-offs; he faithfully radioed to Pursuit Headquarters our location, altitude, numbers, ground speed and direction of travel at three-minute intervals. Received at Pursuit Headquarters, these reported positions were plotted on a gridded map and resultant interception directions transmitted by radio to the Pursuit flight in the air. As a word of explanation, if not expiation, the master spy simulated about 500 farmer observers stationed at regularly spaced intervals on concentric circles originating at Miami and sweeping through a 100-mile radius. Their combined knowledge can only be compared

to a tree full of owls. Still one would not envy even such knowledgeable farmers if he had to live in the middle of Lake Okochee.

The 90th Squadron is proud of its record of having completed the maneuvers with no major mishaps. One airplane nosing up, with injury only to the propeller, constituted the one untoward happening. As we turn the pages in the "March of Time," the 90th Squadron will remember Fort Pierce for the genuine friendships developed with its citizens, whose concoctions of native fruit juices were so freely offered to wash dry sand from the throats of camp weary flyers. To them, and Au revoir!

The 77th Pursuit Squadron departed from Barksdale Field on December 1st for Miami Municipal Airport for participation in the GHQ Air Force concentration and maneuvers. This Squadron and the 27th Pursuit Squadron, 1st Pursuit Group, attached, composed the 20th Pursuit Group. The primary mission of the Pursuit Squadron was the defense of Miami against Bombardment and Attack Aviation. It seemed to all pilots, however, that the most important mission was that of fighting sand. There was sand on the ground, sand in the air, sand in the food and sand in the beds. There were pilots on the concentration that believed they were in the Foreign Legion and were matching their wits against the desert sand of Africa.

During the concentration at the Municipal Airport, Lieut. Desmond, of the 77th, made a forced landing in a P-26 at Dania, Fla. Upon landing, it nosed over and washed out the plane. Fortunately, Lieut. Desmond came out without a scratch. Lieut. Borden lost his battle with the sand, and while taxiing across the field at the Airport, nosed his P-26 up, but the only damage reported was that done to the propeller.

Crew chiefs on this maneuver worked as they have never worked before. There were two airplanes for each mechanic to crew and keep in the air. This was extremely difficult, as the airplanes were on the alert a great part of the time that they were not in the air. Considering all of this, the maintenance was done very well. The airplanes were kept flying and were ready to start for Barksdale when the maneuvers ended.

After the Air Force Maneuvers were over, the officers moved to the Floridian Hotel and there proceeded to get clean for the first time in 10 days.

The weather was unfavorable two of the three days set for the All-American Air Races and Maneuvers, so this Squadron maneuvered only one day before the grandstand at the Airport.

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For the benefit of News Letter readers who are not acquainted with the Air Corps officers pictured on the insert accompanying the article on the GHQ Air Force maneuvers in Florida, their names are given below, as follows:

Top center: Brigadier-General Henry C. Pratt; center of page, left to right: Brigadier-General Gerald C. Braat, Major-General Frank M. Andrews, Brigadier-General Henry H. Arnold; bottom of page, left to right: Lieut.-Colonel Millard F. Harmon, Colonel Hugh J. Knerr, Lieut.-Colonel Clarence L. Tinker.

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Thanks to Messrs. Bob Fitzgerald and Lee Gregg of the Materiel Division. They produced the cover for this issue of the News Letter.

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NOTES FROM AIR CORPS FIELDS

Barksdale Field, La., January 9th.

To those officers and men who participated in the recent GHQ Air Force maneuvers as members of the 90th Attack Squadron, 3rd Wing Headquarters, Fort Pierce, Florida will be remembered for its mixture of work and pleasure, blowing sand, burning days and freezing nights, palm-groves and Everglades, and swamps at tree-top altitude with visions of mawing alligators. Everlasting credit must accrue to Judge Thomas, Dave Putnam, Mr. and Mrs. 'Ernie' Wellborn, Mrs. Dorothy Upton, Mr. and Mrs. Kupplegard and many others who proved that the much vaunted warmth of Florida lies not so much in its climate as in the friendly hearts of its people.

The 13th Attack Squadron, consisting of 9 A-12 planes, three transports and pilots attached, seven officers; two cadets and 26 enlisted men, arrived at Chapman Field, Miami, Fla., on the afternoon of November 16th, for the purpose of performing preliminary and record rear seat gunnery. One plane, piloted by 2nd Lieut. R.A. Livingstone, Air Reserve, with Sgt. J.D. Stephenson, gunner, had a forced landing enroute, landing north of Fort Lauderdale. The plane nosed over in an abandoned bean field, which was the only available possible landing area, but fortunately neither the pilot nor gunner were seriously injured, although the plane will require a major overhaul. Lieut. Livingstone suffered gasoline burns about the neck and shoulders, occasioned by gasoline dripping on him from the belly tank while he was pinned under the cockpit for about 30 minutes. Sergeant Stephenson suffered minor cuts on his hands from the pieces of broken windshield he used to dig Lieut. Livingstone out from under.

A total of 26 enlisted men and 5 officers completed the course. High scoring honors went to Private O.C. Jones, with a total of 1565 out of a possible 1900. Captain William P. Sloan paced the officers with a total of 1477.5. The towing planes were A-12's, equipped with a home-made gadget designed by Technical Sergeant George W. Mitchell, of the organization. It consists of parts of an A-3 Bomb Rack, a B-5 shackle, an old hat, last year's Christmas cards, or what have you, but it works. It permits the carrying of four tow targets, released one at a time by the pilot, who can also release the towing cable at will. The entire rack can be installed and loaded with tow targets in about 20 minutes, and re-loaded in about ten. Dayton papers please copy.

The facilities at Chapman Field were excellent, the weather ideal, the beach delightful and the return trip uneventful. This organization left for Barksdale Field on the morning of November 25th, and arrived there at noon.

San Antonio Air Depot, Texas, January 4th.

Capt. C.H. Deerwester, of the Middletown Air Depot, on an extended cross-country flight, was a visitor at this Depot January 2nd and 3rd. He is visiting the various Air

Corps stations in this vicinity to confer on engineering matters.

Christmas at this Depot was celebrated with a Post Christmas Tree at the Officers' Club on the afternoon of December 24th for all officers, warrant officers and enlisted men of the station and their families. This was in charge of the ladies of the post, and through their efforts the occasion was one in which the true Christmas spirit was enjoyed by all. The tree was beautifully decorated, and the children were delighted with the way in which they were remembered by Santa Claus, who was represented in a highly satisfactory manner by Captain D.J. Ellinger.

Selfridge Field, Mich., January 3rd.

Major Irwin B. March, Medical Corps, who departed from the station on October 10th to pursue the advanced course of instruction at Carlisle Barracks, Pa., returned to Selfridge Field on December 28th.

A very pleasant holiday season was enjoyed at Selfridge Field. A Christmas Party for the children of the post was held at the Noncommissioned Officers' Club on the afternoon of December 21st. A special movie for the children of the post was shown on December 26th.

The Inter-Squadron Basketball League, scheduled to commence play on January 6th, is made up of teams from the 56th and 57th Service Squadrons, the Station Complement, and a 1st Pursuit Group team composed of members from the 17th, 27th and 94th Pursuit Squadrons and 1st Pursuit Group Headquarters Detachment. The season will be divided into two rounds of 12 games each, and the play off, if necessary, between the winners of the two rounds, will commence immediately following the end of the second round on February 11th. When the championship of the Inter-Squadron League has been decided, a post team will be chosen to represent Selfridge Field in games with other teams.

The recently completed squash and handball courts have proved to be a recreational attraction for a large number of officers and enlisted men. Three volley ball courts provide an additional facility for exercise of the personnel of the post. The number of badminton enthusiasts on the post is also rapidly increasing.

Lieut. Edgar Ricen (M.C.) U.S. Navy, who has been on duty at the station hospital, Selfridge Field, since August 5, 1935, in connection with the Civilian Conservation Corps, recently received orders relieving him from that duty. He departed on January 3rd for his new station, Puget Sound, Wash.

Clark Field, P.I., December 4th.

Arrangements are being made by the 4th Composite Group, of which the 3rd Pursuit Squadron is a member, for the annual field maneuvers to be held somewhere in the Southern Islands of the Philippines. It is believed Cebu will be selected as the base.

On December 5th, Major Ford, Capt. Davies and Lieut. Cheyney departed by air from this station to inspect fields in Southern Islands as far south as Jolo. On their flight north, these

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pilots covered many fields in Mindanao.

Luke Field, T.H., December 17th.

At 4:45 a.m., December 9th, the units on the field rolled out of comfortable bunks as the shrill blasts of the 1st Sergeants' whistles spoke a warning to those who were to take part in the Divisional Review in honor of Vice President John N. Garner, Speaker Joseph W. Byrns and Congressional Party, that preparations were about to begin for this giant spectacle. One hour and five minutes later, all the outfits had embarked on the Luke Field Ferry for Pearl City, where trucks trucks assigned to transport them to Schofield Barracks in preparation for the big parade awaited to be filled.

Shortly after eleven o'clock the bugles sounded the opening notes. Standing at attention on a field bristling with guns and covered with Army trucks and tractors were 14,000 men with gleaming bayonets. Here and there a band awaited to lead a regiment past the reviewing stand.

In less time than you would think, the field was partially deserted. It was our time to pass the reviewing stand to get an "eyes right" view of the distinguished visitors. A few steps and the lines began to waver, but straightened, looking much better than in previous reviews for the Luke Field contingent.

Shortly after the review, the trucks, filled with men from Luke Field, pulled into Wheeler Field and parked. Squadrons were divided up and sent to different outfits, there to fill large cavities left empty by the activities of the morning. Sergeant Axford, top kicker of the 6th Pursuit Squadron, pencil in hand, helped to assign the visitors to seats in the mess hall of that squadron, and brought to mind those early morning speeches at reveille (when he was top kick of the 50th Squadron) punctuated by pebbles which he tossed in several directions. What is a gesture to some was probably a pebble to Sgt. Axford. But all is forgiven in the turbulent deluge of Xmas spirit and good will towards men. After all there will always be speeches before and after dinner.

New faces at Luke Field: 2nd Lieut. Frank W. Nightingale, assigned to 4th Observation Sqdn.; 2nd Lieut. Ben A. Mason, assigned to the 50th Observation Sqdn.; 2nd Lieuts. Norman L. Callist and Chas. E. Fisher, assigned to 72nd Bombardment Squadron. The above-named Reserve officers reported for duty November 29th for a period of one year. Staff Sgts. Howard M. Phinney, David Stiene and Herbert Nelson were assigned to the 65th Service Squadron; Edward C. Beck to 4th Observation Squadron and George E. Donaldson to the 23rd Bombardment Squadron.

On Saturday, November 23rd, the command took time out to witness the landing of the "China Clipper." Some few who dug out their cameras to take a shot at the "Clipper" in action were disappointed when it circled over Waipahu and landed a few hundred yards from the Pearl City dock. At that range even the Graff Zep would look like a hot dog, without telescopic lens. Most of the cameras I saw were of the dollar ninety-eight variety, and a few of them were clicking when the "Clipper" gracefully squatted

on the placid waters bounding Pearl City. The interest in trans-Pacific flights is gradually growing less. Probably in a few months a small handful of people will greet the Clipper ships when they taxi in - friends of those on board - and the usual crowd that used to hang around the depot.

Hawaiian Air Depot, Luke Field, T.H.

The close of the Calendar Year 1935 finds the Engineering Section in probably the strongest position it has been in since the organization of the Depot. Only two years ago there were some thirty odd airplanes in the Department which were past due for overhaul. In addition to maintaining the regular schedule, these thirty odd airplanes have been worked in gradually until, at the close of 1935, there will be only four airplanes in the "past due" status.

The various projects of repair and maintenance at this Depot are progressing rapidly to completion. We have a new leakless roof over our heads in the Supply, a test block eliminating fire hazards is practically completed, and the storage facilities of Supply have been altered to furnish an additional six thousand bins which have been very badly needed.

Two hundred thousand pounds of freight were scheduled to be delivered at this Depot shortly before Christmas. Such large deliveries are now a matter of course here because the stocks in general are being greatly increased.

Recently, due to increased inter-island flying and operations, it has been necessary to ship many airplane parts to the outlying fields on the other islands to effect repairs in the field. Concern has been expressed as to whether or not this equipment will feel the results of heavy trips on the rough General Frank.

The personnel working in the Depot have been particularly fortunate in the past few months in being able to watch the Pan American Pioneer Clipper, the China Clipper, and the Philippine Clipper arrive and depart on their regularly scheduled flights to Manila. The Clippers land in Pearl Harbor within about 300 yards of the Depot Shops. Although, to the majority of the people in Honolulu, these flights are becoming routine, we still get a thrill every time one of these mammoth ships lands in Pearl Harbor, after covering the 2400 miles from San Francisco.

Wheeler Field, Schofield Barracks, T.H.

With the departure of the U.S. Army Transport REPUBLIC on November 17th, the 18th Pursuit Group lost Captain Bodle, Lieuts. Dahl and Powell, who have completed their tour of foreign duty. Capt. Bodle goes to Langley Field; Lieut. Dahl to Barksdale Field, and Lieut. Powell will be a student officer at the Air Corps Technical School at Chanute Field, Rantoul, Ill.

The December 5th transport again reduced the regular officer strength of the 18th Group by three officers, when Lieuts. Sam H. Wiseman and Robert H. Terrill departed for March Field and Lieut. Russell H. Griffiths for Hensley Field. In the near future the extension of the tour of duty of Lieut. Lauris Norstad will expire, and this officer will proceed to his new station at Mitchell Field. On the same boat Major William D. Wheeler will return to Headquarters 2nd Corps Area, where he will retire after expiration of accrued leave



AIR
CORPS

NEWS LETTER

Issued by the office of the Chief of the Air Corps
War Department, Washington, D.C.



MAJOR GENERAL OSCAR WESTOVER
THE NEW CHIEF OF THE AIR CORPS

1977

1977

1977

IN MEMORIAM



1899

MAJOR ARTHUR K. LADD

1935

Our comrade still in our flights of memory.

W.

The loss of this experienced personnel, following closely on the return of several other Regular Army Air Corps officers who have completed their tour of duty in the Hawaiian Department, has placed a heavy load on the remaining personnel. At the present time the assigned Regular Army officers at Wheeler Field are just exactly enough to fill the group and squadron staff assignments authorized by War Department Circular No. 7, January 25, 1935. Wheeler Field is not authorized a station complement, so that the officer personnel assigned to the 18th Group perform the usual functions of the station complement in addition to their regular duties. Being a part of the large post of Schofield Barracks, the 18th Group is called upon more than most Air Corps stations for officers to be members of boards, courts, surveys, inventories, etc.

The arrival of a few Reserve officers in the last two months has partially compensated for the loss of Regular Army officers. Second Lieuts. Ralph C. Rockwood, Robert K. Martin, Henry H. Spicer, Potter B. Paige and Kenneth R. Kreps have reported for duty and have been assigned to tactical squadrons at Wheeler Field. Orders are expected assigning 2nd Lt. W.H. Council to this Group upon his arrival in the Hawaiian Department.

Another officer personnel change of general interest to the Air Corps involved Major Cadmus J. Baker, the genial flight surgeon, who has been on duty at Wheeler Field. Upon the arrival of Major Claude V. Cummings in the Hawaiian Department in November, he was assigned to Wheeler Field, and Major Baker was transferred to Luke Field for the remainder of his tour in the Islands.

Luke Field, T.H., December 3rd.

The 23rd Squadron had Turkey in real abundance, but the thing that made it a meal of real Thanksgiving was the presence of Private James Monroe, who was visiting the organization for the first time since he was injured in an airplane crash 14 weeks ago. Although still on crutches, Monroe looked mighty fine to his friends in the 23rd.

72nd Bombardment Squadron: Lieut. Travis M. Hetherington returned from Wheeler Field where he has been for the past two months attending the Wing Navigation School. He was appointed Squadron Communications Officer.

Lieut. Clifford H. Rees departed on Nov. 7th for his new post, Langley Field. Lieut. Chas. Fottenger returned to the States on 2 months' leave. The Squadron will lose two excellent officers when the ST. MIHIEL departs Dec. 5. Lieuts. Louis A. Gunther and James W. Gurr, the former going to Brooks Field and the latter to Randolph Field. Good luck and God speed.

The officers of this Squadron escorted Lt. Emery S. Wetzel, known as "Pinky," to the 50th Squadron. He is now Captain Wetzel of the Fighting 50th. Lieuts. H.R. Spicer and K.R. Kreps, Air Reserve, were transferred to Wheeler Field. Lieut. William J. Clinch, Jr., transferred to this Squadron from the 4th Squadron, November 27th.

50th Observation Squadron: Captain Murray C. Woodbury left for duty at Selfridge Field.

First Lieut. Edwin G. Simenson departed on the TATSUO MARU on November 19th for a trip around the world prior to reporting for duty at Langley Field, Va.

Staff Sgt. Byron Fowler reported from Kelly Field and was assigned to duty as Hangar Chief.

Staff Sgt. Robert Foye arrived from Mitchel Field and was assigned to duty as Crew Chief.

Langley Field, Va., January 7, 1935.

The 37th Attack Squadron is glad to welcome Cadet J.W. Graham into the organization. Cadet Graham graduated from Kelly Field in June, 1935, and served with the 20th Bombardment Squadron before assignment to the 37th.

Corporal Ned J. Martini recently left the Field for transfer to the Attack Group at March Field, Calif.

Brooks Field, Texas, January 7th.

Three airplanes of the 22nd Observation Squadron represented Brooks Field at the recent Air Races held in Miami. These planes, piloted by Captain LeRoy Hudson, who acted as Flight Leader; Captain H.W. Grant, Lieut. Leslie Martin and Cadets Haynes and Fernald, with Private Weaver as mechanic, left Brooks Field on December 9th, and all returned December 16th, with the exception of Lieut. Martin and Cadet Haynes, who were detained a few days in Miami, owing to the plane piloted by the latter nosing over in soft ground, necessitating engine change.

The following-named officers, formerly stationed in Hawaii, are enroute to this station for duty: Captain Harold G. Peterson, 1st Lieuts. Robert A. Stunkard, Louis A. Guenther, Thomas C. Morgan and William G. Beard. Capt. Arthur G. Hamilton, of Hamilton Field, also received orders transferring him to this post.

Brooks Field was considerably elated over the success of its football team in the 1935 Army League. Despite the very small enlisted strength from which to draw players, Brooks Field emerged the Air Corps Champion of this section and within but a scant half game of the the Army League championship. When one considers that it was the lightest team in the League (only one man in the backfield weighing more than 150 pounds) its position of merit can be appreciated.

The admirable spirit of genuine spunk of the team was responsible for its victories over the 12th F.A. - 47-0, the 15th F.A. - 6-0, and Kelly Field, 18-6. The only defeat sustained was at the hands of the 9th Infantry, 13-19. Randolph Field was tied 13-13. Of the players voted the honorary positions on the All Army Team, Brooks Field placed a goodly number - Girard, l.e.; Fanning, c.; Naranjo, r.e., and Weaver, q.b. Major Smith, coach of Brooks Field team, takes considerable pride in demonstrating that all the distance gained minus that lost through the right end of the line would leave less distance than that required to bury a Quarterback.

March Field, Riverside, Calif.

One of the very few Army Reserve officers in command of Regular Army enlisted men, 2nd Lt. Glen C. Moser, commander of the First Wing Hqrs. Detachment, CHQ Air Force, left active duty with V-6935, A.C.

the Air Corps to assume his new duties at the plant of the Douglas Aircraft Corporation. His work will be the test piloting of the new Douglas sleeper planes and other planes manufactured by the Santa Monica concern. Lieut. Moser formerly served with the 7th Bombardment Group at Hamilton Field as a Flying Cadet after his graduation from the Advanced Flying School at Kelly Field, Texas.

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WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

APPOINTMENTS: Brigadier-General Frank M. Andrews, Commander, CHQ Air Force, Langley Field, Va., to temporary rank of Major-General from December 27, 1935.

Colonel Gerald C. Brant, Commander of 3rd Wing, Barksdale Field, La., to temporary rank of Brigadier-General from January 9, 1936.

Brigadier-General Henry H. Arnold, Air Corps, as Assistant to the Chief of the Air Corps with the rank of Brigadier-General, for a period of four years, beginning December 28, 1935. Gen. Arnold is relieved from duty at March Field, Calif., and will proceed to Washington, D.C., and report to the Chief of the Air Corps for duty in his office.

Colonel Henry B. Clagett is assigned as Wing Commander, 1st Wing, CHQ Air Force, March Field, Calif., with temporary rank of Brigadier General from February 29, 1936.

CHANGES OF STATION: To Bolling Field, D.C.: Lieut.-Colonel William O. Ryan, to assume command. Relieved from assignment, duty and temporary rank with the Air Corps Board at Maxwell Field, Ala.

To Chanute Field, Ill.: Major Orlo H. Quinn from Langley Field, Va.

To Maxwell Field, Ala.: 1st Lieut. John H. Fite from duty as student at Air Corps Technical School, Chanute Field.

To Washington, D.C.: Captain Herbert K. Baisley, from Bolling Field, D.C.

To Bolling Field, D.C.: Captain John S. Griffith, from Office of the Chief of the Air Corps. - Captain Minton W. Kaye, who is relieved Feb. 11th from assignment, duty and temporary rank with 17th Attack Group, March Field.

RELIEVED FROM DUTY WITH AIR CORPS: 2nd Lts. Noel M. Cox and Joseph B. Crawford from assignment and duty at Air Corps Training Center, Randolph Field, the former assigned to 22nd Infantry, Fort McPherson, Ga., and the latter to the 7th Infantry at Vancouver Barracks, Wash.

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TECHNICAL INFORMATION AND ENGINEERING NEWS Air Corps Materiel Division

Instrument Board Lighting.

A representative of the Fairchild Aerial Camera Corporation, Woodside, L. I., New York, visited the Materiel Division regarding a new design of instrument board floodlighting. This floodlighting is accomplished by one or two light sources in back of the pilot acting through a specially designed optical system to give the desired size and intensity of the light beam. The advantages claimed for such a system are simplified wiring, decreased weight

and installation and maintenance costs. A sample lamp assembly for comparative instrument board lighting tests will be submitted in the near future.

Pneumatic Life Preserver Vest, Type B-3.

An Engineering Section Memorandum Report provides information regarding the standardization of the type B-3 pneumatic life preserver vest. This vest is composed of two superimposed fabric inverted "U"-shaped compartments containing corresponding latex bladders to which is attached a metal CO₂ cylinder holder and discharging device. Each compartment is provided with an additional inflation means by a short rubber tube containing a pillow valve attached at the neck opening. A fabric back and crotch strap is provided for holding the vest in position on the wearer.

Navigation Equipment.

An Engineering Section Memorandum Report covers results of a flight to Newark, New Jersey, by three representatives of the Materiel Division in a B-12A airplane, December 2-4, 1935, inclusive, for the purpose of making flight tests with the automatic pilot actuating the controls; to compare the results obtainable using the directional gyro control and horizon control units, originally installed in this airplane, with the Sperry Gyroscope Company's new experimental set of gyro control units having the speed of the follow-up controls doubled and incorporating automatic turn, bank, and climb devices; to determine whether or not any or all of the design improvements disclosed had sufficient value to justify recommending their incorporation in the automatic pilots being procured by the Air Corps; to inspect new designs of navigation equipment; and to obtain detail information necessary for completing Air Corps specifications for procurement of automatic pilots.

Landing Lamp Assemblies.

An Engineering Section Memorandum Report provides information for the standardization of landing lamp assemblies, Air Corps Types A-8 and A-9, using a leading-edge cover glass. This will eliminate the aerodynamic drag caused by the present standard landing lights.

Reflectors in Floodlights and Beacons.

An Engineering Section Memorandum Report was prepared as a summary of a questionnaire regarding condition of reflectors in floodlights and beacons (submitted to the Service), to determine the condition of 25-inch diameter, 10-inch focal length glass reflectors and cause for deterioration. These data are also to be used as a basis of replacement necessary this fiscal year.

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THE STRATOSPHERE FLIGHT ALTITUDE RECORD

According to a U.F. dispatch from Paris, recently, the altitude record set by Captain Orvil A. Anderson and Captain Albert W. Stevens, Army Air Corps, in the stratosphere balloon, Explorer II, was officially homologated by the Federation Aeronautique Internationale, at 72,181 feet. The record as calibrated by the U.S. Bureau of Standards, was 72,395 feet.

Information Division
Air Corps

February 1, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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DEFENSE AGAINST AIR ATTACK

By Major-General Oscar Westover,
Chief of the Air Corps

Defense against air attack assumes for the Continental United States many special features not applicable to countries with a different geographical situation. The discussion which follows is based primarily upon our own geographical situation. In discussing measures to provide against aircraft attack they may be conveniently divided into two categories:

First - Measures principally defensive, including:

- a. Dispersion (Security)
- b. Frequent changes of base (Movement)
- c. Concealment
- d. Bomb and gas-proof shelters

Second - Measures principally offensive, including:

- a. Attack against the enemy's aircraft bases
- b. Attack against aircraft in the air
- c. Attack against lines of aircraft supply and aircraft communications.
- d. Ground anti-aircraft defense.

The principal basis for defense against air attack is the network of civil airports, extending into all the strategic areas of the Continental United States. The adequacy of these airports to support the operations of our own defensive forces will largely determine the effectiveness of the defense.

The United States is fortunately situated in possessing, in most areas, an adequate number of civil airports for the purposes of defense. In several strategic areas, due to sparsity of population and consequent lack of demand for them, the civil airports are inadequate in number at the present time to satisfy the full operating requirements of our defensive air forces, in the event one or the other of these areas became the principal objective of an enemy's air attack.

The discussion in Congress last year on the "Wilcox Bill," (since enacted into law) definitely indicated that the purpose of that legislation is to encourage the provision of sufficient air base facilities in the principal strategic areas of the United States, adequately to take care of any requirement of defense against air attack.

Since the approval of the above legislation by the President, the War Department has had a Special Committee studying the requirements for air bases. It may be expected that, as a result of this study, the War Department soon will be in a position to formulate a program which, when carried out, will place the United States in a favorable position to maintain an effective defense against air attack.

Two of the principally defensive measures to provide against air attack require the existence of numerous airports to make them fully effective. These are dispersion and frequent changes of base. Where large defensive air forces are operating, a considerable number of airports are required to permit the desirable amount of dispersion of the air units. The fewer the number of planes located on a given airdrome the less remunerative is the target they present to enemy air attack.

A large number of airports available also permits frequent changes in locations of the operating units, so that one day an airport may be occupied and the next day not. This tends to render extremely difficult the attack operations of enemy aircraft. This same multiplicity of airports favors the third device of defense - concealment. With a large number of airports available, some of which are in use and some unoccupied, and with frequent shifts in this status, the concealment of airplanes is more apt to succeed, since the enemy may assume that an airport where airplanes are well concealed is not in use.

The ability of the defending air forces to avoid presenting to enemy aircraft attacks, targets which will prove remunerative may react to introduce a situation of primary concern to the civilian population. An enemy thwarted in his efforts to secure results in attacks against our air establishments may turn to other targets more easily, and offering greater return. Among such targets are aircraft and munitions factories, water supply, gasoline storages, railroad tunnels and bridges, and electric power plants. Since most of these installations were constructed before the era when air attack was a prime consideration, the defensive possi-

BOMBING OF A LAVA FLOW

bilities in these cases have not been developed. Perhaps the greatest resources now available in this respect are camouflage and other forms of concealment from an overhead observer. From their nature some of these installations are difficult to conceal or camouflage. It will require intensive study of the possibilities to arrive at satisfactory solutions to these problems. However, the importance of gaining every possible protection against air attack will warrant the effort required to arrive at a satisfactory solution to this problem.

These considerations may arouse in the minds of civilians thoughts of the possible consequences to them of a serious air attack. It is true that, due to our more isolated position, the extreme measures which we read are being resorted to abroad to secure adequate protection from air attack may not be demanded in our own case. However, a certain amount of training of the civilian population as to the nature of aircraft attack and as to the available means of defense against same may greatly minimize the effects of such air attacks.

At this point the trained student of military affairs will pause in despair at the vision of the passive defensive measures which may possibly be demanded by the hundreds of cities open to air attack. This vision includes hundreds of set-ups of expensive antiaircraft guns and machine guns, barrage balloons, smoke-laying airplanes, bomb and gas-proof shelters, vast alarm and communication systems, and millions of gas masks.

The impracticability of providing these passive defense measures on such a huge scale suggests a turn to the consideration of the offensive form of defense. In the first place, if we possess an adequate number of aircraft for our defense, the enemy attacks are more apt to be directed against air bases than against cities, since one of the most important principles of war is that an enemy's main force is the principal objective. On the other hand, if we, on the defensive, operate offensively to destroy the enemy's means of attack, this is a far more effective way of reducing the consequences of such attack than to employ merely passive measures to lessen its effects.

It appears desirable, therefore, to develop a system of defense against aircraft attack in which the principal reliance is placed upon our own aircraft to destroy the enemy's attacking forces, rather than upon passive defensive measures to minimize the consequences of air attack. We require a system wherein soldiers, and not civilians, will bear the brunt of the enemy's fire. We should avoid an unbalanced air defense having too many purely defensive features and too few offensive powers.

The 23rd Bombardment Squadron, stationed at Luke Field, T.H., spent a busy Christmas Day preparing to fly to Hilo to bomb the lava flow that was threatening that city. The take-off was made at 8:30 a.m. on December 26th. After arriving at Hilo, the remainder of the day was spent by bombing teams in flying over the flow and having the exact place to bomb pointed out to them by Dr. Jaggard, Volcanologist of the Hawaii National Park.

Actual bombing began on Friday, the 27th. Each plane carried two 300-lb. practice bombs to use as sighting shots and two 600-lb. demolition bombs to use for effect. Bombing conditions were very unusual. The target was at 8,500 feet, and the planes could go to 12,000 feet with their heavy loads. In spite of these conditions, accuracy was very good. Ground observers reported that all twenty of the big bombs scored direct hits.

The results of the bombing were perfect. The flow, which had been advancing about a mile a day, slowed the day after the bombing and now, one week after the bombing, has practically stopped. The Squadron is very proud of the part it took in the first bombing of a live lava flow in history and delighted that the results were so evident.

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PRAISE FOR RESCUE WORK OF ARMY OFFICERS

The extraordinary heroism of Lieuts. Leonard F. Harman, Air Corps, of Boise, Idaho, and Robert K. Giovannoli, Air Corps, of Lexington, Ky., in rescuing the injured survivors of the recent crash of a large Boeing Bomber at Wright Field, Dayton, O., was attested by a testimonial submitted recently to Secretary of War George H. Dern by the employees of the Boeing Aircraft Co., of Seattle, Wash. The testimonial, in the form of a parchment scroll, is signed by every employee of the Boeing Company.

In the fatal accident which occurred on Oct. 30, 1935, Major Ployer P. Hill, distinguished Army pilot, and Leslie R. Tower, test pilot of the Boeing Co., were fatally hurt, and three other members of the crew were critically injured. When the big plane crashed and burst into flames, Lts. Harman and Giovannoli rushed to the scene of the accident. Disregarding their personal safety, they plunged into the flames repeatedly and rescued the injured members of the crew. Both officers were painfully burned, but continued their rescue work until all persons in the plane were removed.

In transmitting the Boeing testimonial to Major-General Oscar Westover, Chief of the Air Corps, Secretary Dern added his personal and official commendation of the two officers for courageously risking their own lives in the rescue.

NOTES ON FLYING WEATHER

By 1st Lieut. W. H. Wenstrom, Signal Corps

Cloud Forms

While clouds take many forms, most of them can be classified under four main types: stratus, cumulus, nimbus and cirrus. The kinds of clouds present in the sky are often closely related to the existing weather situation and serve to distinguish, particularly, between typical warm front and cold front conditions.

Stratus clouds are flat and layer-like, extending horizontally rather than vertically. They represent stable air conditions, without much vertical convection, and are usually associated with warm fronts. Occasionally they occur at low altitude in a warm air mass, taking the form of fog. Their height varies greatly, as they can occur at all levels between the surface and about three miles aloft.

Cumulus clouds are piled-up and puffy in appearance, resembling "woolpacks" or Cauliflowers. They extend vertically rather than horizontally, and represent unstable air conditions, usually occurring along cold fronts and within unstable air masses particularly when solar heating is intense. The height of their bases is often around 2,000 feet, though it may be much higher. Their tops are usually below 15,000 feet, though in the form of overgrown thunderstorms they may occasionally extend to 25,000 feet or even higher. In a warm, moist (tropical maritime) air mass, large cumulus clouds usually develop during the morning, growing into thunderstorms in the afternoon.

The term nimbus is applied to any cloud from which precipitation is falling. It is usually a large, irregular mass in the region of heavy rain or snow but elsewhere it may take either stratus or cumulus form, depending on the stability of the air mass involved.

Cirrus clouds (also cirro-stratus and cirro-cumulus) are relatively thin and white in appearance. They occur far above ordinary flying levels at heights of five or six miles. The true cirrus, or "mare's tails" are fibrous in appearance and stream out in the direction of the upper winds.

Turbulence.

Turbulence results from the deflection of wind by terrain features, from vertical currents in the atmosphere, and from gustiness (or variations in wind direction and velocity). All three causes are at least partly related, and all tend to make the air "bumpy" for flying. Ordinarily this bumpiness is a matter of no concern to a qualified pilot flying dependable equipment, but under certain circumstances it can be inconvenient or even dangerous.

Wind deflection by terrain features is most pronounced in high winds blowing

over and around a large and abrupt obstruction. Rising currents on the windward slopes of mountain ranges are well known, and are sometimes used for soaring. Downward currents to leeward of mountains are equally common and likely to be more embarrassing to flyers. The more jagged and angular the obstruction is, the more violent will the resulting disturbance be; and this disturbance may include, besides simple down drafts, various irregular eddies and vortices. In certain extreme situations around high mountains these eddies are likely to take the form of air "waterfalls," with turbulence so excessive that structural damage is likely and downward currents so strong that no airplane can maintain altitude in them.

Artificial terrain features such as large buildings can also cause powerful eddies. The immediate vicinity of any large bulk such as an airship hangar should be approached with care. As airship hangars are often situated close to flying fields, it is not unusual for pilots to encounter their eddies at relatively low speed while landing or taking off, with occasionally embarrassing results.

Aside from these terrain effects, violent rising and falling currents can be set up in free air that is moist enough and unstable enough. These rising currents are usually marked by cumulus clouds; and the larger and higher the clouds are, the more violent their currents are likely to be. In some towering thunderstorms which produce large hail, fortunately rare, it is certain that the rising currents exceed 100 miles per hour. Sudden transition from a downward current into an updraft of this order would probably wreck any airplane built at present. The turbulence associated with cumulus clouds can be at least partly avoided by flying rather low, well below the ceiling; or by flying as high as possible - say, above 10,000 feet - where the updrafts have lost much of their force in rapidly thinning air. The middle region, just below the ceiling and for some distance above it, is usually the turbulence maximum.

Thunderstorms.

Thunderstorms are overgrown cumulus clouds in which condensation of moisture and spattering of water droplets have gone far enough to set up large electrical charges. Everything that has been said about cumulus clouds, therefore, applies with more emphasis to thunderstorms. In addition, the thunderstorm has certain dangers peculiar to itself.

The chances of lightning actually striking an airplane in a thunderstorm appear to be somewhat greater than the chances

of its striking a vehicle on the ground, miles an hour.

because many more flashes occur in and between clouds than between clouds and earth. (Also, high voltages are induced in metallic conductors by flashes that pass nearby without striking). In any case, the electrical hazard is probably slight. It exists, and anything but a large, metal-clad transport would probably be rendered uncontrollable or otherwise destroyed by a direct hit.

The turbulence in a large thunderstorm is excessive, and there is always the possibility that it may be accompanied by destructive hail. Even light hail would soon incapacitate a fabric-covered airplane, and the larger hailstones would probably tear up a metal transport. As in ordinary cumulus clouds, the least turbulent flying levels are very low or very high, but in a thunderstorm both have disadvantages. A large storm extends to such heights (20,000 feet or more) that it is almost impossible to fly over, and there may be severe icing up where the temperatures are around freezing. If the storm is moving rapidly, the lower levels may be disturbed by violent and variable winds. The "squall wind" blows outward from the storm at the ground, and just above this a counter current may blow inward towards the storm. A large horizontal whirl of air is thus produced, somewhat similar in action to the revolving brush of a street sweeper. Such a formation, needless to say, endangers an airplane close to the ground.

As "air mass" thunderstorms are usually scattered, it is easy to fly around them in the daytime. Such avoidance is certainly desirable. The fact that a pilot has already flown successfully through one or more thunderstorms proves very little about his ability to fly through the next one, which may be organized on a different order. At night, it is much more difficult to pick open spaces between storms, and night flights should usually be grounded in the presence of widespread thunderstorm activity. Nor should flights be cleared at any time into thunderstorms of the "frontal" type. Along a marked cold front between polar and tropical marine air, for example, these storms may be ranged into a continuous line that cannot be flown through.

Tornadoes and waterspouts are similar phenomena that sometimes occur during marked thunderstorm conditions. They can be distinguished at a distance, unless hidden by lower clouds or dust, by the characteristic funnel-shaped cloud, which hangs down from the main cloud deck above and usually whirles along at twenty to forty miles per hour, spreading destruction over a narrow, sinuous path. A tornado should be avoided at all costs; its gyratory currents are spinning at something like fire hundred

Cold Fronts

Individual cold fronts vary widely. If the temperature and moisture contrasts between the displaced warm air and the displacing cold air are large, if the front is moving rapidly, and if the winds ahead of it, and behind it are high and sharply contrasted in direction, the turbulence, clouds, showers and other effects will be correspondingly violent. On the weather map such a front is marked by a deep pressure trough; the isobars are close together, and they make a sharp V-shaped bend where they cross the front. The extreme case, occurring but rarely, is a "line squall" marked by a continuous line of thunderstorms.

Although ordinary cold fronts and cold occlusions fall short of line-squall intensity, they are often accompanied by unfavorable flying conditions. The front usually extends several hundred miles from southwest to northeast, and the entire line advances steadily southeastward or eastward at a speed perhaps between fifteen and forty miles an hour. Along the front there are usually heavy showers in which ceiling and visibility may drop suddenly to dangerous values. Above, the heavy cumulus clouds are turbulent enough to make blind flying difficult and uncertain. Icing is frequent in the colder seasons, and may be severe.

When a marked cold front is approaching a flying field, airplanes should usually be grounded for a time. Within an hour or so after the frontal passage, conditions improve; first westward, and later eastward as the front and its bad weather zone move on. A pilot meeting a marked cold front on a westward flight should find a suitable landing place, giving way eastward if necessary, land, and proceed westward after frontal passage. A pilot overtaking a cold front on an eastward flight, having a better chance to test its intensity gradually, can proceed with caution, returning towards the clearing west if necessary.

Warm Fronts

Barring icing conditions and occasional thunderstorms in tropical maritime air, warm fronts can be flown through with comparative ease unless a landing becomes necessary near the front itself. The front usually extends from northwest to southeast or east, and moves slowly northeastward or northward. In the immediate frontal zone; perhaps a hundred miles or so wide, the lowering clouds may be close to the ground or even on it, and the visibility may be very poor. Ahead of the frontal zone the ceilings are higher, though lowering gradually, and the rain is light but continuous. Well behind the frontal zone the weather is usually good unless conditions favor an advection fog.

Crossing the frontal zone usually involves a fairly long stretch of blind flying; but this is not difficult, as the air, dis-

tribution is usually stable and turbulence is consequently slight. With good radio contact, terminal conditions can be frequently noted. They are not likely to change very quickly. If the warm weather sector is clear, it will probably remain so. Two or three hundred miles ahead of the front, ceilings are probably ample and will lower but slowly.

Fog.

Fog, which constitutes one of the major dangers of aviation, is variously classified. There are first of all the "frontal" types; the warm front fog mentioned above, and cold front fogs that go with so much other bad weather that the fog itself becomes relatively inconsequential. Of more importance are the "air mass" fogs, which are subdivided into advection and radiation types.

Advection fogs are caused by: (a) the flow of warm, moist air above a cold surface; or (b) the flow of cold air above a warm moist surface. Only the former kind has practical importance in ordinary flying. It may result, for example, when a mass of warm, maritime air flows inland over a relatively cold land surface, perhaps following behind a warm front.

Such advection fogs, though rare, are widespread and persistent when they do occur. The fog usually extends northward or landward, driven by moderate southerly or onshore winds, perhaps covering a large area for days. Sometimes it thickens gradually over a wide region; sometimes it rolls onward like a sea of vapor. In either case, there is likely to be ample advance warning of the increasing or engulfing fog from coastal and southern stations that are first affected. An airplane can usually find clearer air by turning northward or inland, particularly if radio reports from these directions are available.

Radiation fog, unlike the advection variety, appears over land surfaces rather suddenly where no fog existed before. It is caused by the radiative cooling of the earth at night. As heat is radiated away into space, the ground temperature falls, and with it, the temperature of the air next to the ground. In hilly terrain, this cooled air tends to drain down hill, filling depressions and valleys on calm nights. When the temperature of the cooled air reaches its dewpoint, water vapor begins to condense into liquid water. In absolutely still air, this water takes the form of dew. But if some circulation has mixed the air close to the ground, distributing the lowered temperatures through the lower levels, the condensed water takes the form of fog. This fog usually forms first at the lower levels, gradually extending upward for perhaps a few hundred feet.

Radiation fog tends to form at night in the presence of three motivating factors. First, winds are light (2 to 6 miles per hour), favoring the gentle mixing of air in the lower levels. (If the winds are much above six miles an hour, warmer air is brought down from aloft, delaying the cooling process enough to prevent fog formation). Second, mostly clear skies permit the earth-radiation to escape freely into space, favoring maximum cooling. Third, the dew-point must be relatively high, so that the falling temperature will reach it during the night. An airplane pilot in flight at night can thus judge the imminence of fog from radio reports. Where there are light winds under a mostly clear sky, where the dew point is high and, most of all, where the temperature is rapidly approaching the dewpoint, fog is likely to form. When the temperature is more than two degrees above the dew point, fog is usually at least an hour or two away. When the two are equal or only one degree apart, however, fog may begin forming within the hour.

Instead of a surface fog, high fog may form if the conditions are favorable. Perhaps the temperature decreases from the ground upward for several hundred feet, then "inverts" or increases. Air at the base of the "inversion" may have the same dewpoint as the surface air, though its temperature is considerably lower. As the whole atmosphere cools, therefore, the base of the temperature inversion reaches its dewpoint first, and the fog builds rather quickly downward from several hundred feet above the ground.

Icing.

Icing is the chief danger to winter-time flying, and may occur at high altitudes even during the summer. It takes the form of ice deposits on wings, propellers, struts and other exposed parts of an airplane, chiefly near leading edges. There are three types of icing: (a) clear ice, which is the most dangerous type; (b) rime, of more granular structure, which usually forms at lower temperatures than clear ice; and (c) frost, which is relatively harmless. Rime can be cracked off by means of de-icers unless the temperature is quite low; clear ice is usually immune to such cracking. Either type is dangerous to an airplane not equipped with de-icers. Under severe icing conditions, the wings of an airplane are so heavily loaded and so distorted as air foils that the airplane loses altitude rapidly and perhaps becomes entirely unflyable.

The conditions under which icing appears in dangerous forms are (a) a temperature somewhere between 34° F and perhaps 0° F; and (b) moisture in the visible form of clouds (which are aggregations of minute water droplets), mist,

rain and the like. As liquid droplets can exist at temperatures far below zero if they are not disturbed, there is no fixed lower temperature limit. At temperatures below 20°F, however, the amount of water that can exist in vapor form is considerably reduced, so that icing at lower temperatures should not be as frequent or as severe. The dangerous range, therefore, is perhaps from 32°F to about 20°F, and particularly from 32°F to 26°F.

Icing is caused in some degree by several factors. A previously chilled airplane may strike rain or cloud droplets, freezing them. Super-cooled droplets, jostled by the airplane wing, may freeze instantly. Certain areas of low pressure around an airfoil may cool the air by expansion. All these causes become minor, however, when one recollects that far more "cold" is required to freeze water than to cool it. This large latent heat of fusion can be removed only by evaporation, and it is probable that the cooling effect of evaporation (the airplane partially absorbing the water droplets that it strikes) is the major cause of icing.

Clear ice occurs chiefly where relatively warm, moist air is being rapidly lifted; that is, along active fronts. This active lifting occurs particularly along occluding fronts (where the whole warm sector is being pinched out and lifted upward), and most of all along a front that is occluding on the windward side of a mountain barrier. Under such extreme conditions, clear ice can form very fast - at the rate of about one inch per minute. No airplane so far devised can remain under control more than a few minutes when ice forms at this rate.

Rime is formed chiefly in cold air masses, where the droplets are smaller and farther apart than they are in the warm air masses that produce clear ice. As the clouds in these cold masses are usually not as high or as dense as those in warmer masses, it is often possible to climb above the rime zone. In warmer air mass clouds, rime may appear in the upper levels beyond the zone of clear ice.

The most general rule for avoiding icing is to stay out of precipitation areas and clouds in the critical temperature range. Any precipitation area having ground temperatures below 40°F may show icing at ordinary flying altitudes. If temperature in the lower levels are high enough, and other conditions permit, it is well to stay low. Otherwise, it is usually advisable to go as high as possible, where the air is colder and the possible amount of moisture in the air is less. At all times, the temperature range just below the freezing point should be avoided. In freezing weather, active fronts

should be avoided, where possible, particularly near the warm sector of an occluding cyclone, and most particularly where the cyclone is occluding against a mountain barrier.

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RADIO VOLUME CONTROL IN INSTRUMENT FLYING

By the News Letter Correspondent

Problems of instrument flying confusing pilots of the 41st Division Aviation, Washington National Guard, Spokane, Wash., are gradually being solved. In the wake of the solution exist two words - "Volume Control," which is causing pilots to look with far greater importance upon the value of airplane radio equipment.

The importance of the "volume control" has been stressed in three lectures by William Strait, Assistant Chief Pilot of the Spokane-Seattle Division of the Northwest Airlines, and Major Robin A. Day, Squadron Commander.

Real assistance to the Division Aviation pilots in the matter of instrument flying has been given by Mr. Strait in a series of lectures at regular Sunday morning class periods. Mr. Strait at first discounted the use of radio - "volume control," and talked entirely on the Stark method of instrument flying. He now advises, however, that the Northwest Airlines' pilots have adopted "volume control" as a very important part of instrument flying, using it in connection with the Stark method.

"We are convinced that the volume control is very essential to instrument flying and provides the 'short cut' to quick orientation," Mr. Strait stated. "The chief thing to remember when employing volume control is not to touch your volume control. To monkey with the volume control is to defeat entirely the purpose, which is to get the 'build up' or 'dying out' of your set when approaching or leaving the station."

Division Aviation pilots practicing instrument flying have eliminated many of their difficulties since using volume control.

In connection with Northwest Airline pilots, 41st Division Aviation pilots are now making flights in an attempt to establish a system whereby multiple courses can be definitely distinguished from regular on-course signals. While the Bureau of Air Commerce, Department of Commerce, declares that multiple-courses will always lead to the station, no one here claiming any knowledge of instrument flying is willing to admit such is the case. An impression prevails that multiple-courses are found most in mountainous country, leading to the belief that multiple-courses are caused, perhaps, by the mountains. Further speculation is that the multiple-courses might lead into the mountains instead of to a radio station.

Recent days of foggy weather throughout

the Northwest have provided splendid conditions for instrument flying practice, which is done on the Department of Commerce beams to Seattle, Billings and Pendleton. In some instances the flights have been made with communications to the 41st Division Aviation ground radio station.

FIELD EXERCISES IN HAWAII

The 23rd Bombardment Squadron, Luke Field, T.H., recently took off on a trip around the Southern Islands, in compliance with Training Memorandum No. 4, Headquarters Hawaiian Department, which requires each pilot to visit all outlying fields in the Territory once each year. After circling the Islands of Molokai, Maui and Lanai, the Squadron landed at Suiter Field, Upolu Point, Hawaii, and spent the night.

Early the following morning, the Squadron proceeded to Hilo. Here the personnel were met by transportation from the Military Camp. The rest of the day was spent in sight-seeing. Officers and men remained at the camp overnight. The following morning everyone arose early for the return flight to Luke Field. In this instance, the 23rd Squadron participated in a "Wing Communications Exercise" scheduled for that date and represented an enemy Bombardment formation enroute to attack Pearl Harbor. Early that morning the Attack Pursuit and remaining Bombardment organizations had taken stations on the outlying fields on Oahu prepared to take the air on radio orders from Wing Headquarters.

The 4th and 50th Observation Squadrons were located on the Island of Molokai and established a constant patrol to intercept the approaching enemy formation. In spite of cloudy conditions, light showers, and stiff trade winds, the exercise was carried out as planned. The enemy bombardment formation was intercepted by an Observation patrol plane shortly after passing Lanai and was followed closely thereafter, position reports being transmitted every ten minutes. Armed with this information, the Wing Commander at the proper time issued the order for the Pursuit to intercept and break up the attack, the Bombardment and Attack to follow the returning enemy and "sink their carrier." The Pursuit encountered the enemy Bombers in the vicinity of Koko Head and attacked with ferocity. The intrepid pilots of the 23rd Squadron, countered by assuming a close defensive formation and carried on with their mission in accordance with the best traditions of the Fifth Composite Group. This "constructive" bombing attack concluded the exercise, and all

planes landed at their home station.

The exercise was planned and organized by Lieut.-Colonel Asa N. Duncan, Commanding Officer of Luke Field and the Fifth Composite Group, and his Operations Officer, Major Phillips Melville. Lieut.-Colonel John C. McDonnell, Commanding Officer of Wheeler Field and the 18th Pursuit Group, assisted by his Operations Officer, Major Clayton Bissell, acted as Wing Commander and Operations Officer, respectively. Colonel Delos C. Emmons, Commanding Officer of the 18th Composite Wing, and Lieut.-Colonel Hume Peabody functioned as umpires. The umpires pronounced the exercise a success. Much practical experience was gained by all concerned.

A FLIGHT TESTING JOB FOR CAPTAIN FINK

Captain Rudolph Fink, on duty with the First Pursuit Group at Selfridge Field, Mt. Clemens, Mich., has been appointed Air Corps representative at the Boeing Aircraft factory, Seattle, Wash., for a period of about two months to flight test 23 P-26C airplanes being procured from that company. He recently departed for Wright Field, Dayton, Ohio, for temporary duty for the purpose of receiving instructions as to the method of testing the P-26C airplanes at the Boeing plant, and will then proceed to Seattle. Upon the completion of this temporary duty, he will ferry the last P-26C airplane to be delivered on this contract to Selfridge Field.

MORE TREE PLANTING BY AIRCRAFT

Twice during November and once during December, 1935, the 18th Pursuit Group, Wheeler Field, T.H., made airplanes available to cooperate with the territorial government in its policy of reforestation. On each occasion, several hundred pounds of tree seeds have been scattered from the air by airplane over inaccessible terrain. The practice of utilizing airplanes for tree planting is extensively developed in Hawaii, due to the nature of the volcanic ash which forms most of the soil. It is imperative to bind it together with some type of vegetation in order to retard the very rapid erosion produced by the heavy rainfalls on the windward side of all mountain ranges. A secondary purpose is the conservation of rainfall, which is absolutely necessary if there is to be sufficient water for the irrigation of the extensive sugar cane areas.

Beginning in May, 1922, the Air Corps has made airplanes available for this purpose. In this 14-year period, over ten tons of tree seeds have been planted on the islands of Kauai, Maui and Oahu.

This method of planting has been suc-

cessful, and many areas over which it would have been impractical to distribute seed by any other methods are now covered with young forests. The work has reached the point where several agencies are making the seed available to the Territory because of the indirect benefits they receive in water conservation.

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ARMY AIRMEN AID IN RESCUE WORK AT SEA

Two O-19C and two B-3A airplanes recently departed from Nichols Field, Rizal, P.I., to aid in the rescue of the fifty passengers and crew of the ill-fated motor ship "Silver Hazel" which was stranded in San Bernardino Straits. The passengers and crew had been marooned upon the fore part of the ship and a nearby rock for several days without food or shelter. All rescue attempts had failed, due to high seas, and it was intended to drop supplies from the Bombers and to try to get a line to the castaways by utilizing the tow target lines on the O-19's. However, all members of the crew and passengers had abandoned their precarious position on the ship and had taken to the water on improvised rafts before the airplanes arrived. All but two were picked up, and all but four survived the experience. The Master of the "Silver Hazel" was among those lost.

One O-19C was piloted by Lieut.-Col. A.L. Sneed, with Corporal Lorenzo P. Johnson, 2nd Squadron, Crew Chief, and the other by Lieut. H.Q. Huglin, with Private Albert E. Brechtel, 2nd Squadron, Crew Chief.

The two B-3A's were piloted by Capts. J.P. Kenny and G.W. Hansen, the former being accompanied by Staff Sergeant Samuel Gershon, Crew Chief; Sergeant Albert R. Silvers, Privates John C. Moran and Eddy E. Brassard, all of the 28th Squadron, and the latter by Sergeant Walter P. Kurtz, Crew Chief, Master Sergeant Vernon H. Merson, 6th Photo Section, and Privates Harry L. Buckley and Stewart R. Saunders of the 28th Squadron.

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MORE ABOUT THE FLIGHT OF 7TH BOMB. GROUP

The News Letter Correspondent from Hamilton Field, Calif., states that with a new record for cross-country mass flying to its credit, Hamilton Field's crack Seventh Bombardment Group returned from maneuvers in Florida. The Provisional Group, comprising 29 Bombing planes, took off on December 1st from Riverside, Calif., for Vero Beach, Fla. Flying in formation, the fleet of ships arrived at its destination 21½ hours later. Three stopovers were made during that time to allow for refueling, and the actual flying for the record-break-

ing flight of 2500 miles was but 15½ hours. This is the most outstanding mass flight since the flight to Alaska, and proves the ability of aircraft to concentrate on either the Atlantic or Pacific coasts within less than 24 hours. The flight was in command of Lieut.-Colonel Clarence L. Tinker; Commanding Officer of Hamilton Field.

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NEW GREASE RACK AT POPE FIELD

Air Corps troops at Pope Field, Fort Bragg, N.C., recently completed a concrete grease rack, 90 feet long, for the maintenance of the 23 motor vehicles in the Air Corps consolidated motor pool. This grease rack is reinforced with 32 heavy railroad rails which were "chiseled" from a local railroad. In addition, many odds and ends of reinforcing steel, abandoned by the Constructing Quartermaster, went into this rack. So sturdy is the resulting structure that a conservative calculation gives it a safety factor of 21 to 1 when loaded with the heaviest vehicle, a 10-ton balloon winch. The grease rack was built just east of new hangar No. 4, and is thereby sheltered in winter from the prevalent cold northwest winds. Air lines and water lines from the hangar were tapped to provide these facilities for the grease rack. The minimum pressure in the air lines is 100 pounds at all times. By using booster grease guns, the grease pressure delivered to fittings on the motor vehicle is 4,000 pounds to the square inch. As a result of the construction of this facility, the increase in the morale of the men in the transportation department has been tremendous. The only difficulty now is that this department is prone to exceed its allotment of grease.

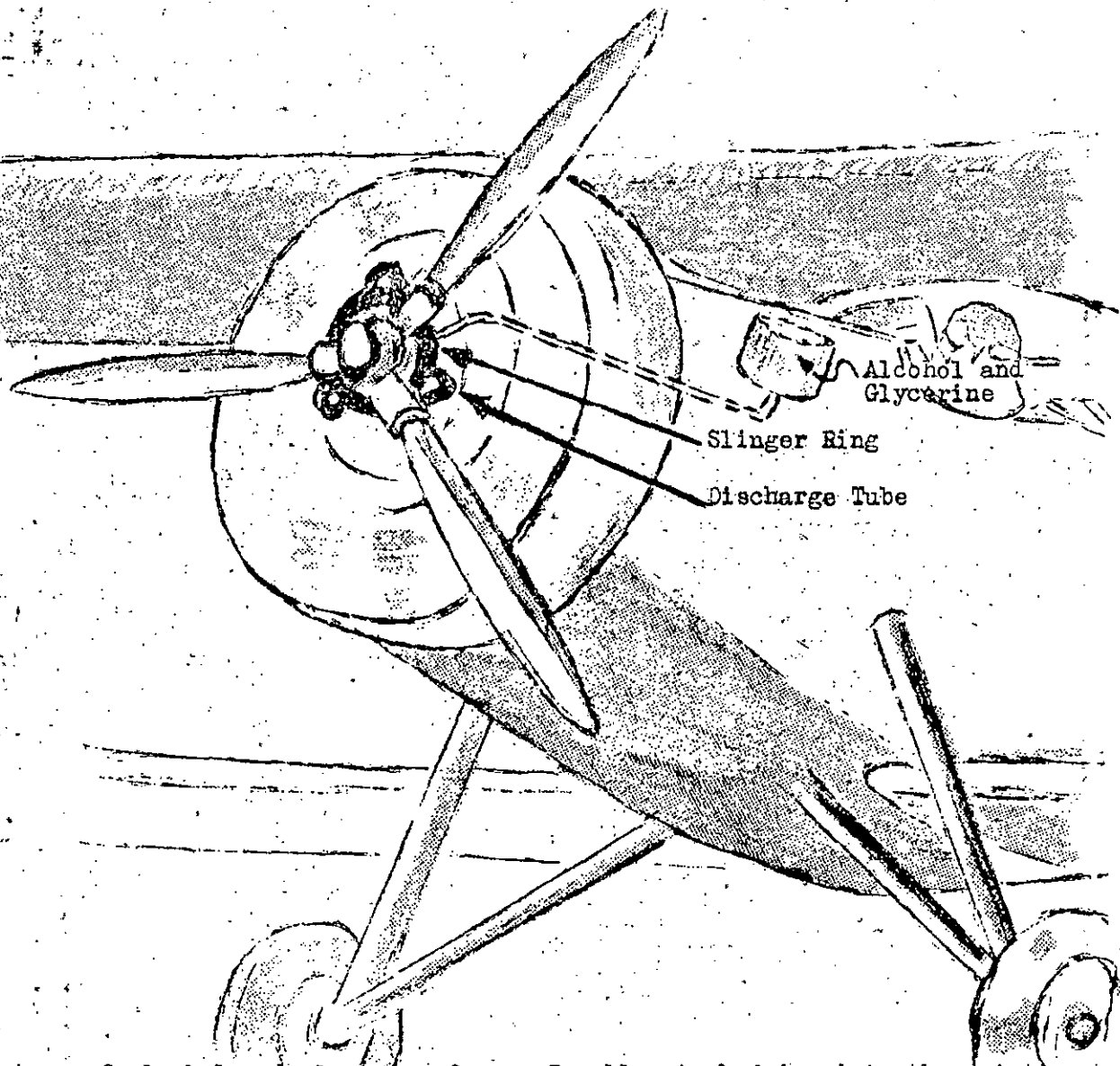
Pope Field is now a beautiful area equipped with nearly all that could be desired. There are nine sets of officers quarters, twelve sets of N.C.O.'s quarters, an excellent barracks, a modern dispensary, five good hangars (two new automatically steam heated ones, with Fenestra doors), an airship hangar and two level, dry, sodded flying fields. "Grateful as we are to a generous government for all these conveniences," adds the News Letter Correspondent, "yet we prize the grease rack as much as any of them, because it was built with our own hands without cost to the government for labor, and with very little cost for material."

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AIRPLANES VISITING SCOTT FIELD

For the year 1935, the average daily number of visiting planes at Scott Field was seven, the actual number for the year being 2,448. Each plane took on an average of 87 gallons of gasoline and eight quarts of oil.

THE DEPARTMENT OF COMMERCE SLINGER RING DE-ICER FOR PROPELLERS
Developed by I. R. Metcalf



A mixture of alcohol and glycerine from a 3-gallon tank drips into the rotating slinger ring, and is thence fed to the absorbent pads at the blade roots. It moistens the blade surface and prevents adhesion of ice.

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Recently the pilots and crew of a Douglas Transport from the U.S. Naval Air Station at Anacostia, D.C., experienced an exciting time with ice formation while en route to Buffalo, N.Y. This little affair, a Navy press release states, combined all the happy qualities of a rock fight and a blind landing at night. Large formations of ice formed on each propeller hub, and as they increased large pieces of ice would break loose and crash against the side of the ship. Naturally, vibration was experienced, and it is an unpleasant feeling. In the carburetor scoops a quarter-inch of white ice would form, then diminish and build up again. The leading edges of the wings and the tail

group were perceptibly coated, although control was at all times excellent. As for the radio aerial, it looked somewhat like a broom stick.

The above item furnishes a striking example of the tendency of ice to form on propeller hubs and, in connection therewith, it is interesting to note that a device for eliminating propeller ice developed by the Bureau of Air Commerce, Department of Commerce, in cooperation with the aeronautical industry, promises to be "just what the doctor ordered."

A recent issue of the Air Commerce Bulletin, published by the Bureau of Air Commerce, gives a description of the device, as very roughly sketched above, as

follows:

"What is believed to be a major advance in the campaign against one of aviation's greatest enemies - ice formations on aircraft propellers - has been made by the Bureau of Air Commerce in cooperation with the aeronautics industry, through the development of a simple device known as a 'slinger ring' which provides for continuous feeding of an anti-ice solution to the propeller blades while the aircraft is in flight.

The 'slinger ring' which measures about 12 inches in diameter, is 2 inches wide, weighs 2 pounds, and is attached to the back of a propeller at the hub, is now installed for practical service trials under actual ice conditions found in flight.

In July of this year (1935), the Bureau assigned the problem of de-icing aircraft propellers to one of its engineers, I.R. Metcalf, who prepared a program calling for a number of scientific studies on this subject. Among the subjects suggested by Mr. Metcalf was the construction of a 'slinger ring' intended for continuous feeding of de-icing solution to propellers both on test stand and in flight.

The program was submitted to competitive bidding, and the B.F. Goodrich Co., Akron, Ohio, was awarded the contract. This firm operates a refrigerated wind tunnel in which ice conditions as experienced in actual flight are reproduced. An arrangement was entered into with Transcontinental & Western Air, Inc., for the use of two 3-blade propellers, 2 engines, a test stand and 10 hours of flying under actual ice conditions. TWA has advised the Bureau of Air Commerce that it has placed an order for 60 slingers, 2 for each of its 30 twin-engined passenger air liners.

From the ring three tubes extend down the propeller along the leading edges of the blades and from these tubes the anti-ice solution is fed to the bare metal by the pilot, who can control the flow from the cockpit. In the refrigerated wind tunnel, ordinary alcohol was employed both to break up ice that had formed and to prevent the formation of additional ice. The device is so constructed as to provide for the continuous application of alcohol or any other de-icing solution to the blades for 5 hours of continuous flying, if necessary. Otherwise, the de-icing solution may be released by the pilot only for periods sufficient to break up the ice as it begins to form on the blades.

The development is available to the owners and operators of all United States aircraft as a contribution to the further safety of all who fly. The device needs to be constructed to fit a particular propeller, but this is in no way a difficult task."

ARMY AIR CORPS MID-WINTER TEST FLIGHTS

Plans have been approved for a series of mid-winter test flights in Northern New England by units of the GHQ Air Force. The test will be made from Concord, N.H., and Burlington, Vt., with a base at Mitchel Field, N.Y., from February 1st to 15th, inclusive.

Lieut.-Colonel Millard F. Harmon, of Barksdale Field, La., will lead the composite group participating in these tests, consisting of one Bombardment Squadron of 10 airplanes from Langley Field, Va.; one Attack Squadron of 20 airplanes and one Pursuit Squadron of 20 airplanes, both from Barksdale Field; one Provisional Service Squadron of 9 officers, 183 enlisted men and 6 cargo ships.

These flights will be made for the purpose of testing the ability of combat units to operate in extremely cold temperatures without heated hangars or other airdrome facilities, of testing the ability of service squadrons to service and maintain combat units under such conditions and of service testing Air Corps equipment, such as skis, sleeping bags, engine heaters, fuel, oils, lubricants, electrical systems, bomb release mechanisms, etc.

These tests are a continuation of those made for the last two years. Based upon the data obtained as a result of these tests, new equipment designed to improve cold weather operations will be carried on at the Materiel Division at Wright Field, Dayton, Ohio.

Six years ago, in January, 1930, the First Pursuit Group participated in what was termed the "Arctic Patrol Flight," under the command of Major (now Lieut.-Colonel) Ralph Royce, Air Corps. This flight of 21 Pursuit airplanes traversed the area from Selfridge Field to Spokane, Washington, and return, under the most severe weather conditions, during the course of which the Army pilots experienced many hardships due to the intense cold. For his leadership on this occasion, Major Royce was subsequently awarded the Mackay Trophy, this flight being considered the most meritorious one performed by the Air Corps during that year.

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3RD PURSUIT SQDN. STAGES AIR COMBAT TOURNAMENT

Recently a tournament, which is supposed by many to be the first of its kind, was staged in the skies surrounding Langley Field, Va. Teams for individual combat were selected and areas assigned to all present. The victor of one encounter would combat the victor of another, and so by process of elimination the contestants dwindled until only two remained. The final battle was fought with the defeated contestants as spectators, perched at various altitudes where each could get a proverbial birds-eye view. And who should emerge the champion but that dashing young knight of the air - with the red scarf - Cadet "Red" Elkins. "Boy, can he 'ground 'em," adds the Langley Field Correspondent.

LIEUTENANT GIOVANNOLI SELECTED FOR CHENEY AWARD FOR HEROISM

For performing an act of valor and self-sacrifice worthy of the highest commendation, the Board of Air Corps officers, appointed to select the recipient of the Cheney Award for the year 1935, designated 1st Lieut. Robert E. Giovannoli, Air Corps, recognizing his extreme bravery in the rescue of two men from a burning airplane at Dayton, Ohio, on October 30, 1935, as the most outstanding and meritorious act performed by any individual eligible to receive this award. Probably not in the entire history of the Air Corps has a more heroic action been recorded.

On October 30, 1935, a large experimental bombing airplane crashed at Wright Field, Dayton, Ohio, the wreckage immediately catching fire. Three of the five members of the crew were rescued without great difficulty, but Major Ployer P. Hill, Air Corps, pilot of the airplane, and Mr. Leslie Tower, a civilian test pilot of the manufacturer of the plane, were trapped in the pilot's all-metal cockpit. When Lieut. Giovannoli arrived at the scene of the accident, he immediately climbed upon a wing of the burning airplane and made his way to a window of the cabin through which he extricated Mr. Tower.

In spite of the fact that the metal sides were hot enough to burn one's hand, the heat and smoke practically unbearable, and with the knowledge that additional fuel tank explosions might occur at any moment, he returned, entered the compartment through the window and began the task of releasing Major Hill. With only the aid of a blanket about his head, he worked with seemingly superhuman energy for a period estimated at between four and five minutes. He succeeded in cutting loose with a pocket knife the pilot's shoe which had become wedged in the wreckage and then raised the pilot and passed him through the window to waiting hands. His own escape from a perilous position, in which he suffered serious and painful burns, was considered miraculous. Major Hill died several hours later, and Mr. Tower several days later, after complete recovery seemed assured.

The award which will be presented to Lieut. Giovannoli was established in 1927 in memory of 1st Lieut. William H. Cheney, Air Service, who was killed in an air collision at Foggia, Italy, on January 20, 1918. The donors of the award are Mrs. Mary L. Scofield, of Peterboro, N.H., and Mrs. Thomas W. (Ruth Cheney) Streeter, of Morristown, N.J., mother and sister, respectively, of the late Lieut. Cheney. They have jointly set aside a trust fund of \$15,000, the interest accruing therefrom to be used to make the award, which is bestowed annually by the Chief of

the Air Corps for an act of valor, or of extreme fortitude or self-sacrifice in a humanitarian interest, not necessarily of a military nature, but which shall have been performed in connection with aircraft. Those eligible to receive the award are officers of the Air Corps, Air Reserve, and enlisted men of the Air Corps and Air Reserve and, in the event of a posthumous award, the widow or next of kin.

A bronze plaque is struck off yearly, the name of the recipient engraved thereon, and the memento is presented to him, together with an engraved certificate describing the act of valor performed, and either a sum of money or a suitable gift, as designated by the Cheney Award Board. Although the income from the trust fund exceeds \$500, per annum, the balance is placed in a sinking fund for possible use in the event more than a single individual is recommended jointly for the award.

The design of the bronze medal was suggested by Mrs. Streeter. It is a symbolical representation of an intrepid aviator riding the winged winds. The design was executed by the well known sculptor, Gerome Brush of Dublin. It bears on the reverse the record and date of the award. A replica of the medal was made for presentation and for permanent preservation in the headquarters of the post of the American Legion in Peterboro which bears the name of the aviator in whose memory it was created.

One of the conditions incident to the bestowal of the Cheney Award is that the announcement of the award, if any, shall be made each year on the 20th day of January, the anniversary of the death of Lieut. William H. Cheney.

The first presentation of the Cheney Award was made in 1927 to Master Sergeant Harry Chapman, Air Corps, for conspicuous bravery in the airship ROMA disaster, February 21, 1922. His photograph appears on the accompanying insert of the recipients of the Cheney Award at the top, left.

In the center of the top group is the photograph of Captain Uzal G. Ent, who was presented the Award for 1928 for heroism during the National Elimination Balloon Races, when he rode down a burning balloon, after it had been struck by lightning, in an attempt to save his companion, Lieut. Paul Evert.

Captain William A. Matheny (top group, right) was tendered the Award for 1929 for the rescue of a companion, Lieut. Dwight Canfield, from the burning wreckage of their bombing plane which had crashed in the Nicaraguan jungles while enroute to Panama.

No awards were made for the years 1930 and 1934.

For 1931, 1st Lieut. Robert D. Moor, V-6943, A.C.

Air Corps, received the Award posthumously, for his piloting of an airplane, disabled in an air collision, for a length of time sufficient for his passenger to save himself by a parachute jump. He gallantly sacrificed his life, for by the time he succeeded in getting his passenger to jump it was too late for him to resort to this means of escape. His photograph (blurred and the only one available) appears in the center group, left. The Cheney Award Medal is in the center, and directly below it is the photograph of Lieut. Giovannoli.

Private John B. Smith (center group, right) was also presented the Cheney Award for 1931 for the rescue of the pilot of the wrecked and burning airplane in which he has been a passenger.

The group photograph (bottom, left) shows the President presenting the Cheney Award to Private Arden M. Farley, for his rescue of Lieut. William H. Dum, Air Reserve, from a wrecked and burning airplane. Left to right in this photograph are shown Major-General Benjamin D. Foulois, Mrs. Ruth Cheney Streeter, Private Farley, Mrs. Mary L. Scofield and President Roosevelt.

The group photograph (bottom, right) shows the President presenting the Award to Lieut. W.L. Bogen, Staff Sgt. Doy D. Dodd and Sergeant Thomas J. Rogers, for acts of valor during the rescue of two men trapped in a burning airplane, at Fort Clark, Texas, May 4, 1933. General Foulois is shown at the extreme right.

Lieut. Giovannoli was born in the District of Columbia in 1904. In 1920, he was graduated from the Lexington, Ky. High School, and in 1925 he graduated as an electrical engineer from the University of Kentucky. His flying training in the Air Corps was taken at the Air Corps Training Center, San Antonio, Texas, in 1928, he being rated as a Pursuit Pilot, following which he was commissioned a 2nd Lieutenant in the Air Reserve. In 1930, he was commissioned in the Air Corps, Regular Army. The service experience of this officer includes several interesting assignments, including test piloting of winter Pursuit airplane equipment along the northern border and a flight to Porto Rico. After completing the course in the Air Corps Engineering School, Wright Field, Ohio, in 1934, he was assigned as an engineer in the Aircraft Engine Department, Materiel Division, at that field, where he is now on duty.

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Brigadier-General Henry H. Arnold, the new Assistant to the Chief of the Air Corps, and formerly commander of the First Wing of the HQ Air Force at March Field, Riverside, Calif., reported for duty in Washington on Jan. 17th.

THE OBSERVATION AIRPLANE OF THE FUTURE By Lieut. Ellsworth C. French

An Observation airplane that will make possible the execution of all the duties now assigned to an Observation squadron is the dream of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane, Wash.

The impossibility of doing more than one of the very numerous duties with which Observation aviation is now charged came forcefully to the front in a recent experiment with a Douglas O-38E, the latest type Observation airplane.

Equipped with all of the necessary radio, the pilot and observer attempted to get in the airplane with the least possible exertion and speed. The pilot was successful with a reasonable degree of both, after the customary adjustment of the glass hood. But the observer was less fortunate. Repeated attempts disclosed the impossibility of getting a K-10 camera in the rear cockpit, once the pilot, dressed in winter flying suit, has seated himself. The rear hood "just don't permit such things." So the camera was put in and the pilot after it.

And there ended the sad story, because with the hood closed the camera had no useability. Therefore, the observer became a radio operator, while the camera stuck up between his knees. And it was impossible for the observer to relieve the pilot at the stick, which had no freedom because of the camera.

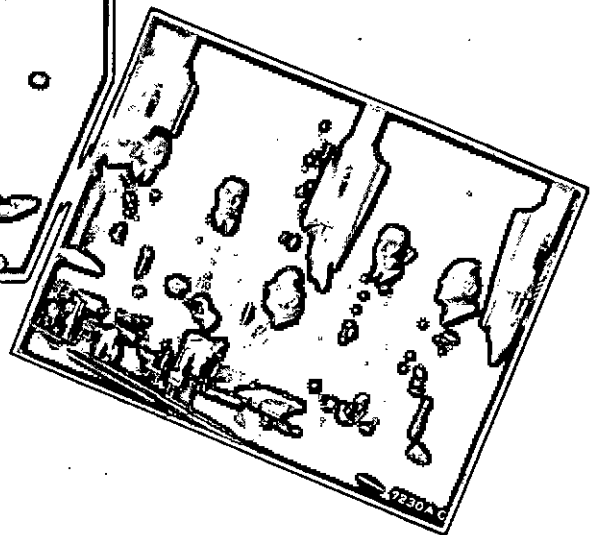
The problem of getting into the airplane was less entertaining to those on the ground when the experiment was attempted with an O-38. Oblique photographs were possible, but that was all because the camera necessarily found a resting place between the observer's knees, because of radio installation in the baggage vertical camera compartment.

All thought of operating the rear machine gun was abandoned after attempting to figure out just the kind of person an observer would have to be to maneuver himself into machine gun operations with a camera between his legs.

The necessity of radio, machine gun and camera is recognized as of extreme importance to Observation aviation. It was agreed, however, that the value of all three are lost almost entirely in the present type of Observation aviation.

Officers of the 41st Division Aviation are looking forward to the construction of an Observation airplane that will travel 200 miles an hour, with all personnel under cover, and a ship's crew of at least three persons, including the pilot. It is felt that no lone observer can perform all of his duties satisfactorily in case of an emergency, thus making it advisable to divide the duties between at least two men, who would have sufficient space in the rear of the pilot to take either oblique or vertical photo-

(Continued on page 24)



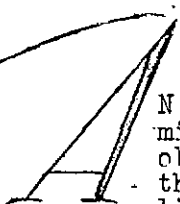
RECIPIENTS OF THE CHENEY AWARD

1944-1945

1944-1945

MILITARY AVIATION

By Lieut.-Colonel B.Q. Jones, Air Corps



N intelligent understanding of military aviation can only be obtained by an appreciation of the individual capabilities and limitations of the different classes, and of the requirements for those several classes as members of the military team.

All military men are familiar with the four general classes and their missions, i.e., Observation, Attack, Bombardment and Pursuit. But the questions can well be asked in all propriety: "How familiar are we with the military considerations that give to each class its distinctive performances?" and "Do we know the nature of those distinctive performances?"

This paper, therefore, deals not at all with war or peace organization, or with who shall be responsible for what in the grand scheme of affairs. It deals pointedly with what the military airplane is and what part it can play in war. It deals also with the development and need for the four classes of airplanes, and with the influence upon airplane performances of the military characteristics that are emphasized in one class and sacrificed in another. It also covers briefly the armament and equipment of military airplanes, personnel limitations, a basis for understanding the requirements for, as well as an indication of the present trend of development of military aviation.

All forms of transportation embody performances dealing with load, range, speed, maneuverability, structural strength and horsepower. A vehicle that features any one of them suffers correspondingly in the others. Conversely, any vehicle designed to sacrifice all but one characteristic performance, will excel all others in its particular field.

Unfortunately, new lines of development do not always recognize this principle. We may insist upon field artillery that outranges the enemy's and then complain if it has lost mobility. Attack planes are expected to be maneuverable enough to follow the contours of the ground, yet bombardment ranges, speeds and combat loads are imposed that ruin their maneuverability. A high degree of maneuverability may be necessary for Pursuit planes, yet a heavy load of fuel will be insisted upon for long cross-country flights that puts maneuverability into the discard. What is the result? Hybrid equipment! If we would be reasonable, our procuring services can provide equipment that would excel in their respective specialized fields. However, it may require war to make us "reasonable minded."

The military and performance characteristics of airplanes have their counterparts in other weapons. For combat loads, think of projectile weights. The thought of a caliber .30 bullet is associated with a light weapon that troops carry everywhere for use against a great variety of light targets. The thought of the 16-inch shell carries with it immobility, great size and cost, but great destructive power against appropriate targets. For range, think of artillery ranges. The greater the range the greater the propelling charge, and the heavier and less mobile the weapon.

For speed, think of time of flight of the projectile. The greater the velocity, the greater must be the power, hence, weight of the propelling charge, the more stable must be the projectile, and the heavier the weapon.

For maneuverability, think of mobility of weapons. Mobility carries with it the thought of light weights, and of ease of movement in all directions on and off the roads and over all kinds of terrain. The heavier the gun, the less the mobility. The heavier the airplane, the less its maneuverability.

For structural strength, think of a gun failure. If subjected to powder charges, or operating conditions for which it is not designed, the gun will break down.

For horsepower, think of powder charges. As weapons increase in power, their weights go up, and with them the horsepower and size of the tractors and trucks required to move them.

DEVELOPMENT of the four classes of military aviation from military usage.

Observation

From the beginning of time intelligent commanders have striven to learn what their opponents were doing and at the same time to prevent their opponents from learning what they were doing. What was first attempted by the early balloons was finally accomplished by the Observation plane. Counter measures against it are Pursuit airplanes and antiaircraft fire.

Were it not for the fear of these airplanes, short range observation, i.e., division and corps, would need only communication and photographic equipment and the ability to get in and out of small fields close to the units they are serving. Fear of Pursuit has increased the combat load of Observation airplanes by the weight of their defensive armament. If the air observer is to be entirely relieved of the task of defense, the combat load must be further increased by the weight of a gunner charged solely with that responsibility. Modern speed and range require-

ments add still more to the weights, correspondingly increasing the size and decreasing the maneuverability as well as the ability to get in and out of small fields.

The long range reconnaissance operations of Observation aviation emphasizes range and speed, as well as heavier communications and photographic equipment. Security emphasizes high altitude flying. Emphasis upon extreme range, or upon sub-stratosphere flying, imposes characteristics so special in their nature as to require the development of types of Observation airplanes especially designed for those purposes. If over-water observation is emphasized, then operating conditions and considerations of safety of personnel require design features that will enable the plane to land and take off from the water. Such features add to the weight of the airplane with corresponding sacrifices in performance.

Attack

Prior to the advent of the airplane, the dispositions and movements of troops and supplies in rear areas, or in areas removed from immediate contact with the enemy, had only to be secure against terrestrial observation and raids. Their concentrations in small areas and in defiles offered opportunities to inflict severe losses if they could be reached with effective fire. The airplane provided a means for reaching them. Concentrations of personnel and light material are profitable targets for machine gun fire, small bombs and chemical gases. Grazing machine gun fire and surface exploding fragmentation bombs are most effective. The most accurate bombing and machine gun firing are accomplished by flying as low as possible over the targets. Bombs dropped from these low altitudes do not penetrate below the surface. Chemicals must be released at low altitudes. Low flying planes are more difficult to detect and fire on. Personnel has to be surprised or they will disperse and be prepared to deliver counter fires. If dispersed and prepared to receive the attacking planes, they cease being profitable targets. Thus, a specialized class of airplanes, known as "Attack," has been developed that emphasizes surprise by flying low over varied country, with a large machine gun armament, a medium bomb or chemical load, with maneuverability sufficient for contour chasing, and with the greatest speed consistent with its load and maneuverability. To offset its vulnerability to Pursuit airplanes, its military load is increased by a rear gunner with machine guns.

Bombardment

The range and carrying capacity of the airplane has made possible attacks against targets beyond artillery range or deep into enemy territory. The great

er the bomb carrying capacity of the plane the greater the variety of targets that can be effectively attacked. The greater the range of the Bomber, the greater the number of targets within range, and the greater the ability to approach the targets from surprise directions. The greater the speed of the Bomber, the greater the surprise; and the greater its security against pursuit and anti-aircraft fire, the less strain on its operating crews and the greater the number of attacks that can be launched in a given period of time. Need for particular emphasis upon bomb loads, range and speed have developed a distinctly specialized type for bombing operations. The most accurate bombing is obtained at extremely low altitudes, but demolition bombs cannot be dropped from low altitudes due to lack of penetration and danger to the planes themselves. Delay action demolition bombs that penetrate the targets effect greatest destruction. It is impractical to provide parachutes for large bombs, and without them they bounce and ricochet away from the targets. Bombs without parachutes dropped from tree-top altitudes will neither penetrate nor "stay-put."

Bombers are too large and heavy to be maneuverable enough to fly at extremely low altitudes over hill and dale. Low altitude flying over long distances is fatiguing. Aviation over long distances is more difficult at hedge-hopping altitudes. Pursuit interception is easier, and Bombers would be within range of all calibers of small arms, and be vulnerable to bomb fragments of bombs dropped from Pursuit planes overhead that explode on contact with the ground under the Bombing planes. Hence, the Bombers seek altitude to secure bomb penetrations, for security, and for a measure of surprise. For security against Pursuit attack, gunners and defensive armament are included in the combat load. For long range aviation, avigators and special aviation equipment have also been included. Hence, bombing operations require planes that emphasize large military loads, great ranges, high speeds and operations at altitudes.

Super-bombardment airplanes emphasize military load, range and speed. Range enables it to reach very distant targets, speed decreases the strain on its operating personnel and increases its security, while capacity for large combat loads makes it a weapon of great striking power. As a weapon of war, its trend is to deny security to profitable bombardment targets anywhere within enemy territory. It is developing into a class of combat aviation whose very size and power is isolating it from economical employment with other arms.

Pursuit

New forms of attack develop new forms of defense. As Observation aviation de-

veloped, so did its counter-arm, Pursuit, which is also a counter-measure against hostile Pursuit, Attack and Bombardment.

Pursuit employment required it to have combat initiative over all contemporary types within its range of operation. To possess this initiative required specialization in speed, maneuverability, rate of climb and high diving speeds. Combat load and range had to be sacrificed to obtain them. For employment against classes other than Pursuit, speed is emphasized; for high altitude operations, speed and climb at high altitudes are emphasized; for low altitude operations speed at low altitudes is emphasized. The sacrifice that Pursuit makes in combat load and range enables it to out-perform other classes of combat aviation within its range of action. However, when employed against enemy Pursuit, different degrees of emphasis are placed upon speed, maneuverability and altitude performances. Superiority in speed gives the initiative to accept, but not always to break off combat against contemporary Pursuit models having superior maneuverability. Superiority in maneuverability gives decided advantage over contemporary models once combat is closed, but is a disadvantage in retreat. Pursuit planes designed for best performances at 15,000 feet altitude possess decided combat superiority at that altitude over contemporary Pursuit models designed for best performances at 5,000 feet. The converse is also true.

Transports.

Transport planes are a post-war development. The performances of transport planes for the movement of personnel and cargo should be judged on a transportation basis, i.e., daily passenger mile and freight ton mile basis. They involve considerations of pay load, speed and range that are most efficient for the character of service to be rendered. The problem of defensive armament will arise as soon as Transport planes begin to operate within range of hostile Pursuit.

Summary.

To sum up, Attack should emphasize maneuverability and armament; Bombardment should emphasize bomb load, range and speed; Observation, general utility; Pursuit, speed and maneuverability; and Transports, pay load and range.

MILITARY CHARACTERISTICS: influence upon performance.

The military airplane must be prepared for air combat and anti-aircraft fire every time it flies a combat mission. Acute competition between nations occasions high pressure research, development and specialization to maintain superiority in airplane performance and power. It is this competition that makes standardization difficult. Continuous progress in airplane design and

engine horsepowers brings out new models with improved performances. A model that it a satisfactory standard today will not be satisfactory two years from today.

Speed is undoubtedly the one performance characteristic most commonly employed to portray the relative powers of classes and models of military airplanes. Speed is but one of several military characteristics. All military characteristics must be considered when comparing either the performances, or the military values of the different classes, or different models of airplanes. Published performance characteristics of airplanes, and of most mechanical vehicles, are essentially theoretical. All published performance characteristics, including speed, are based upon carefully calculated performance tests. All observations are carefully calibrated and reduced to standard atmospheric conditions for purposes of comparison. The performances of all technical equipment in service, particularly under field conditions, cannot be expected to equal those attained under the mechanical care and engineering supervision necessary to engineering practices. Consequently, the engineers and procuring agencies of all nations are criticized by their pilots for exaggerating the performances of the airplanes supplied to units. Both parties are correct, but each is thinking of different conditions under which the equipment performed. Conditions of weather, poor pilotage, equipment errors, faulty mechanical condition, poor maintenance, ignorance of operating personnel, all are factors conducive to reduced performance.

The maximum official speeds are those attained under carefully calibrated conditions for those altitudes at which the airplane is intended to deliver its maximum performance. At no other altitude will the speeds be the same. The altitudes will vary from sea level to six, ten, or 15,000 feet and sometimes higher altitudes. The altitudes employed are the best estimates of the average altitudes at which the planes will operate under service conditions. Such altitudes are known as the operating altitudes. By super-charging and by propeller and airplane design, the plane's performances are made to be best at the altitudes selected. By these means, plus the fact that air resistances decrease at higher altitudes, sub-stratosphere planes can attain higher speeds than are possible at lower altitudes. In spite of the difficulties and handicaps of the use of oxygen, the added security of high speeds and high altitude operations considerably improve the combat power of high altitude planes.

Airplanes are not flown at their maximum speeds except in emergency or in combat. Formations of airplanes cannot be

flown at maximum speeds without scattering the formations and destroying tactical unity. The only combat airplanes which are designed and expected to attain super-speeds in dives are the Pursuit types. None of the other types have the structural strength to withstand such speeds.

Cruising speed is employed when a plane's maximum range is being emphasized. It is that speed at which maximum range is obtained from the airplane's fuel supply. This speed is too slow for the practical flying of individual planes. It is impossibly slow for any character of formation flying.

Operating speed is an airplane's speed at around 75% maximum horsepower. It approximates the flying speeds normal to both individual and formations of planes.

Combat speed is the speed at which the planes are actually flown over the lines and in combat. What it is varies as much as the proverbial situation. The combat speeds of formations of all classes, except Pursuit, will approximate operating speeds.

As horsepower increases, speeds increase, if the ratio of power to weight decreases. When one engine cannot furnish enough horsepower, multiple engines are resorted to. A plane with a multiplicity of engines can be designed to exceed the best speeds of a single engine plane, but no such planes have yet been built for military use.

The superior speeds and maneuverability of Pursuit, except when operating against its own class, give it the tactical initiative over an opponent and, when it has the "altitude gauge", it can take advantage of its high diving speeds to close with an opponent. To illustrate:-the operating or approximate combat speed of a formation of Bombers may be 200 miles an hour at 10,000 feet. The corresponding operating speed of contemporary Pursuit models may be 250 miles their high speed, 300 miles, and their safe diving speed, 450 miles. Hence, the difference in their combat speeds may vary from 50 to 250 miles an hour.

A combat speed seldom explained is the "dog fighting" speeds of Pursuiters, or the speeds at which Pursuit planes are flown when engaging in a typical locked dog fight wherein each pilot is striving desperately to keep the opponent from getting his gun sights on him and is also desperately trying to get his own sights on his opponent. Both are striving for the "altitude gauge". The centrifugal forces are terrific. Each is flying with wide open throttle, forcing his plane into the shortest possible turn, climbing if possible, and at the maximum speed that can be maintained in such short turns. Each pilot is "shading" the verge of "blacking out". The centrifugal forces will approach 8 times gravity; the pilot's feet cannot

be raised from the cockpit floor, his head is drawn down and locked on his shoulders to keep it from snapping forward. They literally need eyes on the tops of their heads. The only way they can see each other is relatively up and back. Their planes are often on the verge of stalling, due to the shortness of the turns and to their efforts not to lose altitude. In such dog fights the speeds are low. The minimum dog fighting speed of the Pursuit plane is far below its maximum speed, and very close to its stalling speed. When, for purposes of speed, Pursuit maneuverability is sacrificed, dog fights should not be attempted. The high wing loadings will make the high speed planes squash or snap roll in tight turns, placing the pilot at a serious disadvantage in a dog fight, even to the point of not being able to regain control before it is too late. The best dog fighting plane is one that emphasizes low stalling speeds and high rates of climb at low speeds. Its low stalling speed enables it to turn inside the faster and heavier planes. Its better climb at low speeds enables it to climb above its opponent which gives it the tactical advantage.

The higher the speed, the greater must be the radius of turn to avoid excessive structural stresses and the "blacking out" of the pilot and crew. Sharp maneuvers of multiplace planes induce centrifugal forces too great for the physical powers of the crew, except the pilot, to perform their duties. The pilot has only the airplane and gun controls to operate, both of which he can do as long as he is conscious. He has nothing to lift that require physical effort. Such maneuvers by multiplace planes are only resorted to in dire emergencies when desperate measures are necessary to avoid destruction. This brings out two limitations of all biplane and multiplace fighters. Their greater size and weights place them at a disadvantage with respect to the superior speed and maneuverability of the single place Pursuit. This inferiority forces them to defensive rolls against single seaters. That is the first limitation. The second is that, as soon as a situation forces the biplane and multiplace planes to radical maneuvers to defend themselves, the centrifugal forces developed are so great as literally to glue all personnel to the bottom of their cockpits with only the fire power of the forward or pilot's guns available for combat. They are then reduced to the fire power of single seaters, but at a great disadvantage in speed and maneuverability.

Combat load is the crew, armament and equipment necessary for the airplane to perform its military mission. Large combat loads and ranges require large structures with corresponding sacrifices in speed and maneuverability. To offset losses in speed, multiple engines are re-

sorted to which add still more to weight, size and production costs, and reduce maneuverability to a negligible quantity compared to smaller types. As super-sizes and large combat loads are developed, their methods and expense of operating preclude their economical employment in close combat support of the other arms. Like artillery, the bigger the calibers, the farther back they go and the less frequent their tactical employment.

Range is the total distance an airplane can fly on its fuel supply. It varies with the speed flown because different horsepowers at different speeds consume gasoline at different rates. One Pursuit plane with a normal combat load of 52.3 gallons of gasoline consumes 24.4 gallons an hour at cruising speeds, 36.5 gallons at operating speeds, and 84.2 gallons at maximum speeds. It has a cruising range of 380 miles, an operating range of 296 miles, and, at maximum speed, it can fly only 146 miles. One new Bomber's maximum speed at 10,000 feet altitude is said to be 250 miles an hour, its operating speed, 200 miles, while its cruising speed is 140 miles. Its formation combat speed may average 200 miles an hour. The range at operating speed is 2,000 miles, at cruising speed, 3,000 miles; but at combat speed, only 1,500 miles. A plane cannot fly to the theoretical limit of its range in practical operations. A margin of safety must be allowed for head winds, for getting lost, for difficulty in finding the target and strange airdromes, adverse weather, detours to avoid enemy air defenses, etc. A 25% reduction is a safe margin for all types except Pursuit. Single place Pursuit planes require a 66-2/3% margin because of the amount of time Pursuit may be called upon to fly at maximum power.

Maneuverability is the facility possessed by an airplane to move rapidly around a point outside the airplane. It should not be confused with controllability which is mechanical control. A draft horse and a polo pony may be equally controllable, but not equally maneuverable.

An Observation plane, a two-seater Pursuit and a single-place Pursuit may all have the same range. But the greater combat loads of the first two require larger and heavier airplanes with corresponding sacrifices in speed and maneuverability. Hence, the single-seater will out-speed and out-maneuver them.

An Attack plane must carry a considerable combat load in armament and must possess maneuverability to fly its hedge-hopping missions successfully. Hence, it suffers in speed and must increase its size in wing area to retain necessary maneuverability. The tendency today to increase the combat load,

range and speed of Attack planes is having a bad effect upon maneuverability. They are becoming light Bombers and less pure Attack.

Altitude has a very marked effect upon maneuverability. So much so, that experience has raised the question of the advisability of providing special models to excel in maneuverability at selected altitudes. This applies to Pursuit as well as to those strategic Observation planes that generally operate on long individual missions.

Maneuverability not only involves movement in the three dimensions but is concerned with acceleration, or rate of change of movement. Expressed in maneuver terms, they involve diving speeds, rates of climb and radii of turns. For short turning radii, light wing loading (that is, light weights) are the prime essentials. No Pursuiter will attempt to close with a small light plane in a dog fight. The latter would be on his tail in no time. The Pursuiter's only recourse in such combats is to exploit his greater speed and climb and attack by repeated dives. While the maximum velocities of heavy, high speed planes may be greater than those of planes that accelerate rapidly, the better maneuverability and more rapid acceleration of the one especially designed for maneuverability will enable it to close and deliver effective fire before the heavier but slower starting plane can get out of range.

The performances of military airplanes are affected by structural strength, or factors of safety. Every ounce that can be saved from structural weight increases the pay load and performances. The military requirement for large loads and high performances reduce structural strength and maneuverability of large planes. Restrictions have therefore been placed upon the flying of the several types commensurate with the reasonable, safe performance of their missions. The official Air Corps restrictions upon diving speeds of all Bombers and Transports is 20% in excess of their maximum speeds; upon Attack and Observation, 25%. The restriction placed upon Pursuit is 60%, not only for safety reasons, but due to the fact that the engines at present cannot stand the high diving speeds the Pursuit planes are capable of. While these restrictions are certain to be forgotten in the stress of combat, they nevertheless afford an idea of the relative structural strengths of the four classes of aviation and of the flying limitations they impose.

Summary.

Larger combat loads, longer ranges and higher speeds, each inflicts its individual penalty by imposing greater weights, greater horsepower, higher costs and poorer maneuverability. Combined, they inflict cumulative penalties.

The range and speed of airplanes must be viewed from their several applications, i.e., speeds and ranges at altitudes, cruising speeds and ranges, maximum horizontal speeds and combat diving speeds.

Both weight and size have to be kept down to retain maneuverability.

Horsepower must be considered in relation to weight. It is the ratio of horsepower to weight that determines performances. To secure large horsepower, multiple engine units must be resorted to. Multiple engines will improve combat loads, or ranges or speeds, or all of them, but maneuverability again suffers.

Structural strength must be viewed from an appreciation of normal safe maneuvers. By limiting maneuvers, excessive stresses are avoided, which makes lighter structures possible with corresponding improvements in performances. A modern heavy Bomber could probably attain as high, or possibly a higher diving speed than a Pursuit plane, but it would go to pieces at such speeds, where as Pursuit planes will not.

Costs should be viewed in the light of utility. Utility means cheap operation, cheap maintenance and continuous service.

Ed. Note: A further discussion of Military Aviation by the same writer will appear in an early issue.

One of the purposes of the News Letter is to serve as an open forum for the discussion of various subjects pertaining to military aviation. It is presumed that possibly other views on the subject discussed by Col. Jones may be entertained in some quarters. The contribution of articles from Air Corps officers dealing with the particular subject under discussion, or on some other phases of military aviation, will be gladly welcomed.

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DEFENSE DEMONSTRATION IN THE NORTHWEST By the News Letter Correspondent

The importance of adequate national defense will be presented effectively to thousands of people throughout the Northwest in a three-day combined Air Corps, Field Artillery and Infantry military defense demonstration on May 29, 30 and 31, 1936, at Felts Field, Spokane, Washington, home station of the 41st Division Aviation, Washington National Guard.

Plans for the demonstration have been started by the officers of the 41st Division Aviation, fathers of the idea; the 148th Field Artillery, Coeur d'Alene, Idaho, and the 161st Infantry regiment, Spokane.

In this demonstration it is proposed to stress military aviation, and toward this end the Regular Army Air Corps is to be called upon to provide as many

Bombardment, Attack and Pursuit airplanes as possible. Civic organizations in both Spokane and Coeur d'Alene have endorsed the demonstration, which they pronounce "as the most timely public presentation that could be staged in the Northwest."

Colonel Thomas G. Aston, commander of the 161st Infantry; Colonel Edwin Powell, commander of the motorized 148th Field Artillery, and Major Robin A. Day, commander of the 41st Division Aviation, are uniting in their efforts to put under canvas on Felts Field as many troops as possible, in addition to bringing to the demonstration the Adjutants General of Washington, Idaho, Oregon, and high ranking officers at Fort Lewis and at the Headquarters of the 9th Corps Area.

Colonel Lewis Farrell, commander of the 4th Infantry regiment at Fort George Wright, Spokane, and Major Allan Johnson, Instructor, attached to the 384th Infantry Reserve, Spokane, have promised their cooperation in putting troops and officers in the demonstration.

"It will be the greatest military demonstration ever held in Spokane during my association with the military service," said Colonel Aston, "and will attract thousands of persons from all parts of the Northwest. Coeur d'Alene and Spokane people have not seen their troops under canvas in the field since before the war, because our annual encampments are always held elsewhere. In this time of international arguments and war, the people like to know that they are secure to some degree at least, and they will turn out by the thousands for such a demonstration."

Newspapers and radio have received the announcement of the demonstration with enthusiasm and have promised their support.

Works Progress Administration officials have given assurance that the improvement of Felts Field by the construction of runways will be completed reasonably early in advance of the demonstration.

The work of planning the demonstration has been started early so that the best possible program can be arranged. It is the belief of the committee that the demonstration will rival the 1927 National Air Races held on Felts Field in interest, enthusiasm, attendance and beneficial results. Over 115,000 persons witnessed the National Air Races. The coming demonstration, however, will be of a purely military nature.

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AN ACKNOWLEDGEMENT

Sincere thanks are extended to Major William J. Hanlon, Director of the Army Aeronautical Museum, Wright Field, Dayton, Ohio, for his very helpful cooperation in making possible the use of the two illustrated inserts in this issue of the News Letter, as well as the cover page. Mr. Bob Fitzgerald, the handy man in the Statistical Dept. of the Museum, is responsible for the attractive lay-out of these illustrations. The plates were made and printed in the Printing Unit of the



THE WORK OF THE 59th SERVICE SQUADRON IN THE FLORIDA MANEUVERS
By the Langley Field Correspondent

On November 23, 1935, the 59th Service Squadron of the GHQ Air Force embarked on a rather unusual expedition. For something like one month previous to this, the Squadron personnel had been engaged in drawing and checking equipment and supplies and organizing for the problem on hand, which was in brief as follows:

To mess, service, supply and maintain the 1st Bombardment Wing at Vero Beach, Florida, from December 2nd to 12th, also the 3rd Attack Wing at Fort Pierce during the same period, thence to proceed to the Miami Municipal Airport, Miami, Florida, for the same purpose at that place until December 15th.

The above Wings were required to engage in communications exercises during this period. This Service Squadron had been organized into the proper sections under the table of organization, but for the purposes of this maneuver it was temporarily reorganized, as follows:

Instructions were issued to the effect that upon arrival at Vero Beach the organization would be divided into two detachments, as shown below:

COMMANDING OFFICER - Major H.H. Holland
Vero Beach

Headquarters Section

Adjutant: Captain E.R. Todd.

Operations and Engineering Officer:

Captain H.C. Downey, (Acted as Det. C.O. in absence of Major Holland).

Fort Pierce

Headquarters Section

Det. Commander: Capt. C.B. DeShields.

Adjutant: Captain J. Greer.

Operations and Engineering Officer:

Captain W. Bentley.

The Engineering Section was composed of men from Flight, Armament and Engineering Sections combined; at Vero Beach under Captain H.C. Downey and at Fort Pierce under Captain W. Bentley.

TRANSPORTATION SECTION

Vero Beach

Lt. E.R. Armstrong

Lt. D.R. Gibbs*

Captain O.L. Beal**

* Mess Officer

** Supply Section

Fort Pierce

*Lt. J.B. Stanley

**Capt. D.D. Fisher

Medical Section (Att.)

Major Brown, M.C. (1st Wing).

Captain E. Kendricks, M.C.

Enroute to Florida, however, the following officers had charge of Sections: Captain Todd, Hqs. Section; Captain Downey, Flight, Armament and Engineering Sections; Captain DeShields, Transportation; Captain Beal, Supply.

Total officers, 12; total enlisted men, 190, A.C., 2 M.C.

A great deal of equipment was necessary in order properly to accommodate these organizations in the field. For example, there were 87 tents, not including flies, needed at Vero Beach, and 56 tents, not including flies, needed at Fort Pierce. The proper signs, bulletin boards, shelving, mess tables and latrines were made up beforehand whenever possible.

The necessary tools were drawn and made up into kits, as follows:

- 5 sets of airplane mechanics tools.
 - 1 wire working kit
 - 1 parachute working kit, including two 40 ft. canvases for repacking purposes.
 - 1 metal working kit.
 - 1 welding kit with tanks, hose, regulators, etc.
 - 1 squadron kit, containing jacks, prop wrenches, spark plug tester, high pressure booster pumps, etc.
 - 1 kit of Technical Orders, A.C. Circulars and necessary operations and engineering forms.
 - 1 kit of accessories, such as magnetos, carburetors, starters, generators, control hoses, etc.
 - 1 kit of emergency airplane supplies, such as wheels, tires, tubes, spark plugs, cable, fabric, dope, pressure relief valves, gaskets, etc. Also, two energizers were carried along.
- The Headquarters Section carried the necessary forms and office equipment. The Mess Section was organized for the trip down and back into two units, which would alternate as advanced echelons during the day while the convoy was on the road, this advance echelon going ahead to make lunch at a specified place. At night and in the morning both units cooked dinner and breakfast.

The Supply Section worked day and night drawing and cataloguing supplies and finally in loading same on trucks. Everything from field ranges to office stationery was needed. Bedding rolls were supplied for all officers of the 59th Squadron as well as for officers of the 1st and 3rd Wings.

A large number of vehicles were required for this mission. There was a total of 70 on the road, as follows: two panel body trucks for Headquarters Section, 2 Plymouth passenger cars for use of General Andrews and General Pratt, nine $\frac{1}{2}$ -ton trucks with mess equipment, twenty-four $1\frac{1}{2}$ -ton trucks carrying tents, poles, etc., eleven $2\frac{1}{2}$ -ton trucks carrying tables, latrines, tools, signs and various other items, one $2\frac{1}{2}$ -ton truck with a winch and boom for salvaging wrecks, one ambulance, seventeen reconnaissance cars for personnel, one 1200-gal. refueling truck and, finally, two motorcycles. The job of organizing and conveying this transportation was really a problem.

At 7:30 a.m. on November 25th, the convoy, led by Major H.H. Holland, left Langley Field and proceeded to Fort Bragg, stopping at Rocky Mount for lunch. The lighter cars were made up into a 1st Section and the remainder into a 2nd Section, with the ambulance, wrecking truck and a party of mechanics in a reconnaissance car bringing up the rear. Captain C.B. DeShields, the Transportation Officer enroute, and Capt. Kendrick, the Medical Officer, also rode at the rear in a Plymouth.

It soon developed that the problem of conveying 70 miscellaneous vehicles for 1100 miles is a problem that requires very good organization and previous planning. Major Holland had had considerable experience at this sort of thing, and this was fortunate, since he was able to foresee some of the eventualities. Captain DeShields had his hands full looking after difficulties with repairs on the road and general handling of the convoy. The 1st Section of the lighter vehicles was held at 35 m.p.h., with considerable interval between cars. The 2nd Section proceeded at not to exceed 25 m.p.h. with good intervals.

It was 1100 miles by road to Vero Beach and another 150 to Miami Municipal Airport. On the whole, these cars and trucks and their drivers did exceptionally well. All cars, including gas truck, made the trip, although the gas truck gave some transmission trouble.

At Fort Bragg, the personnel slept in one of the hangars, which arrangement turned out fairly well. In the morning after breakfast, the trucks gassed and the convoy left about 9:00 a.m. Messing and gassing were taken care of very efficiently by the Fort Bragg personnel. Pictures of the train were taken on the way to Fort Bragg.

On the 26th the convoy made Sumter, S.C., escorted by the South Carolina Traffic Police. An advance party under Captain Downey went ahead to erect camp. Part of the men slept in the Armory at this place, by the courtesy of the South Carolina National Guard. The weather was quite cold this night, and the men in tents were somewhat uncomfortable.

Promptly at 8:00 a.m., the convoy left Sumter for Savannah, where the cars gassed and the men had lunch, whereupon it was decided to make Jacksonville, since the weather was somewhat cold for camping overnight.

At 3:00 a.m., the last truck arrived at the Armory at Jacksonville, where arrangements had been made beforehand by Lieut. Gibbs, with Lieut. Fritot of the Florida National Guard, for sheltering the men. The next day being Thanksgiving Day, the Squadron remained at Jacksonville to rest the men. The following day, the 29th, the convoy arrived at Vero Beach airport about 6:00 p.m. Captains Downey and Bentley with an advance party of men arrived beforehand and started camp erection. Considerable rearrangement by Maj. Holland was necessary, since the required facilities would not fit into the location as laid out by the City of Vero Beach. The City, however, and, in particular, Mr. Damerow, the City Engineer, gave every assistance. Power lines for lights and water lines for showers were already installed. Mr. Bud Holman, the airport manager, was very helpful.

By 12:00 noon on December 1st, the camp was completed. The whole organization, minus a few mess and transportation men and guards, left then for Fort Pierce to erect that camp. This camp was completed by 10:00 a.m. on the 2nd. It was at the Fort Pierce airport.

At this time the organization was split up into detachments, as before noted. At Vero Beach, there were seven 59th officers and 100 enlisted men. At Fort Pierce there were five 59th officers and 90 enlisted men.

The 1st Wing and 3rd Wing Headquarters arrived at 1:00 p.m., December 1st. General Arnold commanded the 1st Wing and Colonel Brant the 3rd Wing. Both officers seemed satisfied with camp arrangements in general, but certain additional facilities were installed after their arrival.

The 1st Wing had 70 officers and cadets and 88 enlisted men. The 3rd Wing had 38 officers and cadets and 58 enlisted men, making a total, with the 59th Squadron, of 458 men and officers to be cared for.

The 31st and 32nd Squadrons of the 1st Wing arrived at 9:00 a.m., December 2nd, after a brilliant flight from the West Coast. The 90th Attack Squadron of the 3rd Wing arrived at the same time.

The Engineering Section at Vero Beach made 38 mechanics available to the 1st Wing, and the Engineering Section at Fort Pierce had 31 available for the 3rd Wing:

However, out of these totals, a certain number were detailed to guard and camp utility each day, which reduced the quota on the planes to an average of 25 at each place actually working on air-planes.

The shop force, consisting of welders, sheet metal workers, fabric workers, ignition specialist, wire worker, etc., operated at Vero Beach, since there was only one set of this equipment. This arrangement worked out very well, although some time was lost in bringing parts from Fort Pierce, and the men worked long hours in order to keep up with the jobs. A considerable volume of work was required by visiting airplanes.

The 1st Wing had thirty-two B-10's and B-12's and two C-14 Transports, which later were turned over to the 59th at Vero Beach for utility purposes. The 3rd Wing (Attack) had thirty-one A-12's and two C-14 Transports. One Transport was turned over to the 59th at Fort Pierce.

The general method of operation for the combat squadrons was to run one rather long mission per day, using all airplanes excepting four in reserve in each squadron. The Service Squadron assisted in first echelon maintenance.

The 1st Wing had 36 mechanics, 27 radio men and one armorer. The 59th supplied 25 to them, making a total of 61 mechanics. The 3rd Wing had 25 mechanics. This with 25 from the 59th made a total of 50.

Although it was necessary to work the men long hours with little or no time off for the 59th men, nevertheless the planes were all maintained for the ten days at Vero Beach and Fort Pierce.

This same thing applies to the mess and supply, also transportation personnel, who worked long hours. Transportation men especially were busy driving personnel from hotels and other places early in the morning and late at night. Considerable driving was required to have personnel and equipment to and from planes during missions, also much trucking was necessary to handle supplies.

During these ten days, the mess section did a splendid job of feeding the personnel, which totalled almost 470 men and officers, including visitors. They were required to give service at practically all hours, since the pilots and mechanics were returning from missions at odd times. The meals were in general almost as good as what one gets at home. The Advance Depot was located at Chapman Field. This organization, under Captain Hopkins, supplied the two Wings with airplane parts and other supplies, including rations, with promptness. They undoubtedly had a big problem and did very well with it.

On December 11th, orders were given to break camp early on the 12th, and

proceed to Miami. Although this required much work in packing and loading tents and equipment, the trip was completed without incident. Captains Downey, Bentley and Lieut. Gibbs proceeded to Miami Municipal Airport in advance to erect camp and prepare messes. The convoy got in rather late and ran into a howling rain storm, which made parking rather unpleasant. Trucks were parked at the Naval Air Station. The Wings had already arrived at the Airport.

On the 13th and 14th, the Wings participated in demonstrations during the All-American Air Maneuvers at Miami, and on the 15th the exercises ceased. All organizations left this date for the home stations.

The 59th, under Major Holland, left at 9:00 a.m., with Capt. DeShields as Transportation Officer and Capt. Jack Greer as assistant. Lunch was had at Vero Beach, and at 4:00 a.m., the last man was in bed at the Armory at Jacksonville. This was a long hard grind for the drivers. It is some 360 miles by road from Miami to Jacksonville. The mess personnel did their job handsomely and so did the drivers, but the men were pretty well all in by the time they had eaten and made their beds in the Armory. The next day was used to check up on transportation and rest up the men.

On December 17th the convoy left Jacksonville and proceeded to Charleston, S.C., stopping at Savannah, Ga., for lunch. Arriving at Charleston at 6:00 p.m., the organization bedded down for the night in the Old Washington Light Infantry Armory. The City of Charleston very unexpectedly gave the officers a dinner at the Fort Sumter Hotel, which was as pleasant as it was unexpected. The city officials and some Army and Navy officers, including Admiral Pender and Lieut.-Colonel Welshmer, made addresses of welcome.

On December 18th, the organization left Charleston with some regret and proceeded to Fort Bragg, N.C., stopping at Florence for lunch. At 6:00 p.m., the convoy arrived and refueled, Fort Bragg performing the usual good job of handling the personnel.

The following day the convoy proceeded to Langley Field, arriving there at 7:00 p.m., with everyone well pleased to get home after a somewhat arduous campaign in the field for 25 days.

It should be pointed out in closing that the problem presented to the 59th Service Squadron was almost twice what would normally be expected of it, since the strength of the two Wings was greater than that of one Bombardment Group.

Some of the recommendations made by the squadron commanders were as follows:

1. That personnel and equipment be reduced by, eliminating tentage, and housing men in hotels.

2. That combat squadrons operate own messes.

3. That busses and trailers with emergency bunks be used instead of the present miscellaneous vehicles.

4. That the service squadron do the second and third echelon maintenance but not first.

5. Electric light lines should be available for night maintenance on airplanes.

6. Advance agents should always precede convoys to arrange for servicing and other matters.

7. That mechanics be not required to do kitchen police and guard.

8. That civilian kitchen police be used, thus releasing men for other duties.

9. That all officers keep in their possession bedding rolls for use in the field.

10. That the supply officers of organizations serviced by a service squadron be required to sign a consolidated memorandum receipt for all equipment issued to their organizations.

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COMMAND & GEN. STAFF SCHOOL ASSIGNMENTS

Special Orders of the War Department, recently issued, announced the assignment of 39 Air Corps officers as students at the Command and General Staff School, Fort Leavenworth, Kansas, for the 1936-1937 course. They are directed to proceed at the proper time to Fort Leavenworth and report to the Commandant of that school between August 17th and August 26th, 1936, for duty accordingly.

Of these 39 officers, 27 are at present on duty as students at the Air Corps Tactical School, Maxwell Field, Ala., as follows:

Majors:

Joseph H. Davidson	Ira C. Eaker
Harold M. McClelland	William E. Kepner
Edgar P. Sorensen	

Captains:

Charles H. Caldwell	Harry A. Halverson
John K. Cannon	Don W. Mayhue
Lawrence J. Carr	Ernest S. Moon
Benjamin W. Chidlaw	William D. Old
Harold L. Clark	Augustine F. Shea
Alden R. Crawford	Ralph A. Snavely
James T. Cumberpatch	Bernard J. Tocher
John H. Dulligan	Nathan F. Twining
Homer W. Ferguson	Kenneth B. Wolfe
Dale V. Gaffney	Ford L. Fair
Albert F. Glenn	Carlisle I. Ferris

Other officers detailed from the Air Corps Tactical School are Lieut.-Col. Harold L. George (Captain), instructor and Chief, Air Force Operations Section, and Major Emil C. Kiel (captain), chief, Communications Section.

Major John B. Upston (Captain), Hqrs. G.H.Q. Air Force, and Major Alfred E. Waller (Captain), 35th Pursuit Squadron,

Langley Field, Va.

Major Oliver P. Gethlin, Jr. (Captain) 77th Pursuit Squadron, and Captain Robert W. Douglass, Jr., 55th Pursuit Squadron, from Barksdale Field, La.

Major Westside T. Larson (Captain), 19th Bombardment Group, March Field, Calif.

Major William H. Crom, Office of the Assistant Secretary of War, Washington.

Captain Robert C. Oliver, Selfridge Field, Mich.

Captain John M. Weikert, A.C. Primary Flying School, Randolph Field, Texas.

Captain Lysan P. Whitten, A.C. Materiel Division, Wright Field, Ohio.

Captain Robert B. Williams, 30th Bombardment Squadron, March Field, Calif.

Officers holding temporary increased rank are relieved therefrom effective at the time of compliance with their orders.

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ADVANCED STUDENTS NEARING END OF TRAINING

The present class of students at the Air Corps Advanced Flying School, Kelly Field, Texas, is nearing the end of its training. Ground School has been completed with the exception of a lecture on the GHQ Air Force by Brigadier-General Brant, and practical instruction and demonstration in squadron administration and duties of junior officers therein.

Flying training is progressing satisfactorily, and with the recent excellent weather the sections are slightly ahead of their schedule. Student cross-country maintenance flights are now being made in accordance with the schedule listed below:

The Bombardment flight departed from Kelly Field January 20th for Fort Sill, Okla., and Fort Bliss, Texas, with several intermediate stops. The Pursuit Section will depart on January 27th; the Attack Section, February 3rd, and the Observation Section, February 4th. Each section will follow the same general itinerary, remaining overnight in the same places. Their intermediate stops and routes, however, will be different. With continued good weather, it is believed that graduation exercises for the present class can be held between February 15th and 22nd.

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COLD WEATHER SHOOTING BY THE 37TH ATTACK

The first pistol (.45) marksmanship meet of the 37th Attack Squadron, GHQ Air Force, Langley Field, Va., was held recently in freezing weather. Although the participants were handicapped by cold and stiff fingers, over 70 percent qualified. There were 14 Experts, 13 Sharpshooters and 19 Marksmen. Lieut. Qualm held high score with 95%.

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COMMENDATION FROM THE NATIONAL GEOGRAPHIC SOCIETY

Under date of December 20, 1935, Dr. Gilbert Grosvenor, President of the National Geographic Society, addressed the following letter to General Westover:

"The Board of Trustees and the Officers of the National Geographic Society desire to express to you a full appreciation of the association and support you have rendered the National Geographic-Army Air Corps Stratosphere Expedition, culminating in the flight of November 11, 1935, at which time the Expedition's balloon, EXPLORER II, rose to an officially recognized world record height of 72,395 feet.

The scientific program of the Expedition, ambitious and pioneering in scope, was completed in a manner most gratifying to us, and, although months will be required to finally reduce the observations and recordings into factual data, the preliminary studies of the records assure us that the plans and hopes of the scientific group will be wholly fulfilled and that much data of interest and great value to science will result therefrom.

As War Department representative to the project, as a member of the Advisory

Committee, and as Acting Chief of the Air Corps, you have contributed much of your time, energy and ability which is directly reflected in the ultimate complete success and the magnificent achievements of the Expedition. Your presentation to the War Department of the Expedition's problems and the subsequent official approval bespeaks of your able and enthusiastic support. The selection of the flight personnel and the detailing of airplane pilots, mechanics and balloon-riggers is a tribute to your judgment, and the issuance of official orders for men and the materiel is indicative of the highly efficient business organization under your direction. Despite several major disappointments, your confidence in the personnel and in the project continued steadfast. Your unswerving support was a material factor in the eventual success.

For your important part in the extraordinary accomplishments, achieved in rich proportion despite many discouragements, the National Geographic Society sends you this letter of sincere appreciation, and our best wishes for a happy New Year."

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CITATIONS FOR STRATOSPHERE GROUND CREW

Eight enlisted men, stationed at Scott Field, Belleville, Ill., received citations for their work in South Dakota with the Third National Geographic Society-Army Air Corps Stratosphere Expedition. The cited men are: Master Sergeant Joseph H. Bishop, Sergeant Glenn W. Money, Corporals George Mihalchak, Joseph Van Agtmael, Private, 1st Class, Louis D. Laurin, of the 9th Airship Squadron; Master Sergeant William J. Bennett, of the 21st Airship Group Headquarters; Staff Sergeant Oluf T. Jensen and Private Franklin E. Hunt of the Station Complement.

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FLYING ACTIVITIES AT THE BOSTON AIRPORT

The officers at the Boston Airport, Regular Army and Reserve, also one enlisted pilot, have taken advantage of the wonderful weather prevailing in that section of the country for the last six months to put in 2,253 hours of flying time, of which 1,086 hours were flown by Regular Army officers and 1,167 hours by the Reserves. Of the total amount of flying time, 479 hours were PT time, and 93 hours were under the hood,

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Captain Lewis R.P. Reese, Air Corps, was placed on the retired list Jan. 31, 1936, for disability incident to the service.

GHQ STAFF OFFICERS VISIT BOSTON AIRPORT

Due to the coming winter maneuvers in New England, there has been an increase in the number of visitors at the Boston Airport. Notable among recent visitors were General Andrews and his staff in his "flying office" - the Douglas XC-32. Captain Joseph C. A. Denniston and Lieut. Charles B. Dougher, of Mitchel Field, stopped at the Airport on the return trip from Concord, N.H., after completing arrangements there for the housing of men and equipment during the aforementioned maneuvers. Captain D.P. Lambach and Staff Sergeant Lapsley, of Mitchel Field, stopped over for a few minutes enroute from Concord, N.H. On January 9th, Major Wooten, Colonel Cooper and Captain Denniston, in an OA-4A, arrived at the Airport on their way to Burlington, Vt., and Concord, N.H., to look over the ground for the maneuvers. At the same time, Captain Paul M. Jacobs, stationed at Selfridge Field, arrived from Mitchel Field.

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Lieut.-Colonel Arnold N. Krogstad, Air Corps, who is nearing the completion of four years of duty as Chief of the Personnel Division, Office of the Chief of the Air Corps, is assigned to duty with the GHQ Air Force, Langley Field, Va., effective April 27, 1936.

Captain Fardoc Martin, now attending the Army Industrial College, goes to the Materiel Division next June. He was on duty in the Personnel Division for three years prior to his present assignment as student officer.

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The Observation Airplane of the Future (Continued from page 12)

graphs, handle the radio, observe information sought on the mission, serve as emergency pilot and defend the aircraft in case of attack.

While opinions differed, it was generally believed that Observation aviation has no use for bombs and should carry only sufficient armament in case of attack.

Observation aviation, as viewed by the 41st Division Aviation, has the specific duty of gathering desired information and returning it to the proper headquarters as rapidly as possible. To carry out this purpose, fast airplanes are deemed necessary, as well as airplanes built so as to permit the highest possible degree of efficiency on the part of the personnel. What the next Observation airplane will be like is a subject of considerable interest.

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Army Air Corps Mid-Winter Test Flights (Continued from page 10)

Engine heaters, sleeping bags, skis, standard fuel and oils, electrical systems and bomb release mechanisms are among the items under service test.

Lieut.-Colonel A.H. Gilkeson, commanding 8th Pursuit Group at Langley Field, Va., will command the provisional group on these winter tests. This group is composed of the 8th Pursuit Group Headquarters, with 6 officers, 11 enlisted men and 6 airplanes; one Bombardment squadron from the 2nd Bombardment Group, Langley Field, Va., with 20 officers, 20 enlisted men, and 10 Martin Bombers; one Attack squadron from the 3rd Attack Group, Barksdale Field, La., with 20 officers, 20 enlisted men and 20 Curtiss Attack planes; one Pursuit squadron from the 20th Pursuit Group, Barksdale Field, La., with 20 officers and 20 Boeing Pursuit airplanes; one service detachment each from Selfridge Field, Mich.; Mitchel Field, N.Y.; and Langley Field, Va., consisting of 9 officers, 90 enlisted men and 6 cargo airplanes.

Colonel Gilkeson has established his headquarters at Mitchel Field for the first phase of the maneuver from February 1st to and including February 3rd. He has announced the following staff assignments for the period of the maneuvers:

Major Alfred E. Waller, Personnel and Intelligence.

Major Harold H. George, Operations.

Captain Melvin B. Asp, Supply.

Captain Donald F. Fritch, Engineering.

1st Lieut. Dudley D. Hale, Communications.

All members of his staff are stationed at Langley Field, Va.

The conditions of this maneuver offer sharp contrast to the mild weather encountered in the December concentration

in Florida, and this test conforms to the policy of General Andrews to make the new Air Force a highly mobile unit capable of operating under any conditions which might be encountered in the defense of the United States. Under this policy the personnel of the Air Force find they do not have time to get into the rut of garrison life, as they are constantly being confronted with new situations which take them away from their home stations in all kinds of weather.

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DISTRESSING ACCIDENT AT LUKE FIELD

The Air Corps suffered the loss of one officer and five enlisted men as a result of the aviation accident which occurred at Luke Field, Hawaii, at 7:10 p.m., January 24th, when two Bombing planes collided in mid-air. One officer and one enlisted man, 2nd Lieut. Charles E. Fisher, Air Reserve, of East Marion, N.C., and Private Thomas E. Lanigan, of Richmond, Va., escaped death by parachute leaps. Both Bombers were completely demolished.

The dead are 1st Lieut. Wm. Gordon Beard, Palo Alto, Calif.; Staff Sergeant Bernard T. Jabonsky, Williamsport, Pa.; Privates John B. Hartman, Chicago, Ill.; Truman J. Gardner, Olney, Ill.; Bruce E. Taylor, Puyallup, Wash.; and Gordon M. Parkhurst, Yorkville, N.Y.

Lieut. Beard, who was in command of the crew of one of the Bombing planes, was born in Atlanta, Ga., January 23, 1908, the son of Major Stephen R. Beard, Finance Dept., U.S. Army, at present on duty at Philadelphia, Pa. Lieut. Beard was graduated from the U.S. Military Academy in 1932, appointed a second lieutenant of Infantry, but was assigned to duty with the Air Corps. Lieut. Beard's first service was at Randolph Field, Texas, where he was a student at the Air Corps Primary Flying School. After completing the course, he went to Kelly Field, Texas, as a student in the Bombardment Section of the Advanced Flying School. He remained there until he was transferred to Luke Field, Hawaii, in April, 1934. He was promoted to 1st Lieutenant on August 1, 1935, and remained on duty at Luke Field as Adjutant and Communications Officer of the 23rd Bombardment Squadron.

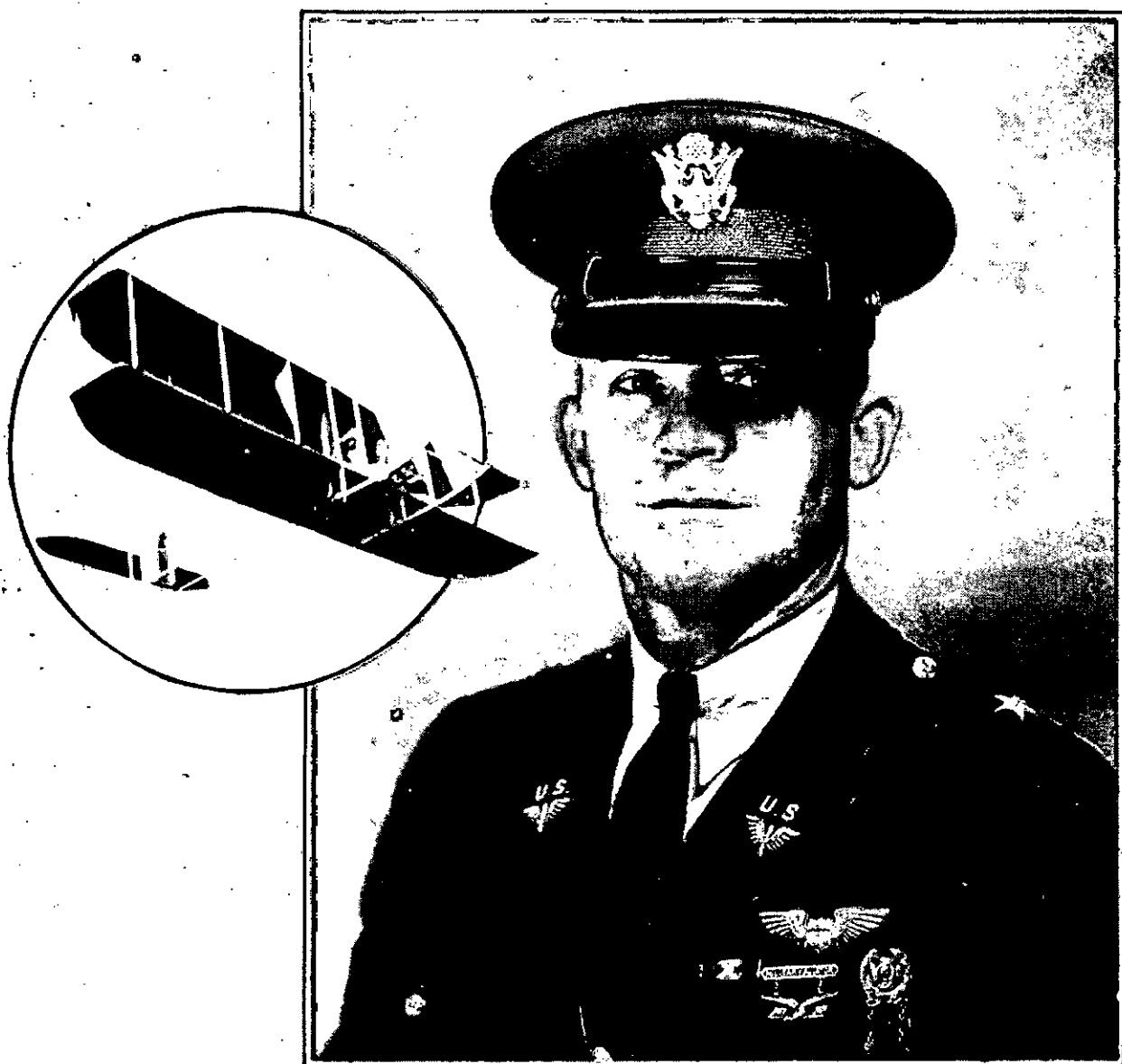
The heartfelt sympathy of the Air Corps is extended to the bereaved families of these men who died in the service of their country.

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Effective January 30th, Major William O. Ryan, Air Corps, was assigned to duty as station complement commander, station complement, Bolling Field, D.C., with the temporary rank of Lieut.-Colonel.

Effective Feb. 15, 1936, Lieut.-Colonel Arthur E. Easterbrook (major), Air Corps, is relieved from duty and temporary rank as Executive Officer, A.C. Training Center, Randolph Field, and assigned to duty in the Office of the Chief of the Air Corps.

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----- BRIGADIER GENERAL HENRY H. ARNOLD -----

The new Assistant to the Chief of the Air Corps.

He piloted the early Wright biplane and the modern Martin Bomber.

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Langley Field, Va.

33rd Pursuit Squadron, GHQ Air Force. On December 20th, 1935, 1st Lieut. A.J. Hanna returned to Langley Field from his period of convalescence at Walter Reed General Hospital and on Jan. 3, 1936, was assigned to 8th Pursuit Group Headquarters. Congratulations, Arch, on the quick recovery.

The close of the year finds us at the end of our fall gunnery practice with all pilots qualified as "Expert Aerial Gunners." Many new theories on approach and sighting were developed, as is always the case but, nevertheless, the record is there.

Recently a tournament, which is supposed by many to be the first of its kind, was staged in the skies surrounding our fair field. Teams for individual combat were selected and areas assigned to all present. The victor of one encounter would combat the victor of another, and so by process of elimination the contestants dwindled until only two remained. The final battle was fought over the sparkling water of BIG BETHEL with the defeated contestants as spectators, perched at various altitudes where each could get a proverbial birds-eye view. And who should emerge the champion but that dashing young knight of the air - with the red scarf - Cadet "Red" Elkins. Boy, can he "ground 'em!"

37th Attack Squadron, GHQ Air Force: Cadets J.W. Graham and P.P. Fender were recently attached to the squadron, the former coming from the 20th Bombardment Squadron and the latter from the 8th Attack Squadron, Barksdale Field, La.

The 37th Squadron lost two of its pilots recently when Captain Barcus was transferred to the 35th Pursuit Squadron and Cadet Bennett to the 36th Pursuit Squadron.

Advanced Flying School, Kelly Field, Texas.

Captain Orvil A. Anderson, who has been absent from this station on duty in connection with the Army Air Corps-National Geographic Society Stratosphere Flight for almost a year, returned to his home station for duty. The entire personnel of the field congratulate Captains Anderson and Stevens on their record-breaking flight, and are pleased to have Captain Anderson with us again.

The Inter-Squadron Basketball League was recently formed at Kelly Field, being composed of the following teams: West End Team, consisting of the 40th, 42nd and 81st Squadrons; East End Team (41st, 43rd and 68th Squadrons); Center Team (Detachment, QMC, and 39th Squadron); Flying Cadet Detachment Team; and the team composed of members of the ACAFS Detachment and Photo Section; known as the ACAFS Detachment Team.

These five teams began play on January 6th, and including their last game, played January 20th, their standing is as follows:

Detachment, won 5, lost 0, Pct. 1000;
Cadets, won 4, lost 1, Pct. 800; East, won 2, lost 4, Pct. 333; West and Center Teams, each won 1, lost 4, Pct. 200.

Boston Airport, East Boston, Mass.

Our C8-A airplane, which has been used almost exclusively for weather flights in conjunction with M.I.T., at Cambridge, Mass., and the Weather Bureau, will be sent to the Middletown Air Depot for overhaul. This will be somewhat of a relief to Pvt. A.V.R. Marsh, our weather pilot.

December 21st was a memorable day for the children of the officers and men of the First Corps Area, for Santa, in his snow-white whiskers and red suit, stepped out of an airplane and greeted them with a smile and a handshake. Santa and the children then proceeded to the hangar where, with his ruddy cheeks bitten by the cold north winds, and with his merry speech, he presented each and every one with an appropriate gift. After the presentation, there were refreshments for all. The success of the party was due to the untiring efforts of Capt. Walter E. Richards, Air Corps, and a committee composed of enlisted men and their wives.

We are in receipt of another PT, which Lt. Cobb flew back from Langley Field. Captain Richards flew Lieut. Cobb to Langley in an O1-E.

Private Flaherty transferred to this detachment from Mitchel Field, N.Y. - Private, 1st Class, R. Fancher, reenlisted Jan. 3d for another 3 years; Private Zeigler reenlisted here after standing the rigors of civilian life for a while, and is crewing a PT-3 again.

Lieut. Crocker Snow, Air Reserve, was on 14 days' active duty, beginning January 5th.

1st Lieut. W. Harlow, Air Reserve, was assigned as Operations Officer.

Chanute Field, Rantoul, Ill., January 14th.

Despite an unusually rainy autumn and a promise of a winter that no California meteorologist would tolerate for an instant, Operations cheerfully reports that the Training Directive has managed to keep well ahead. Our O1-E's and A-3's have averaged well over 100 hours' flying time each month, due largely to the co-operation of the night crews whose "day" begins at taps, and whose labors usually wind up when the ships are rolled back to the line at daylight. All of which - we trust - may be worthy of comment.

New arrivals during the month: Chaplain Benjamin J. Tarskey, from the Office, Chief of Chaplains, Washington; Lieut. Dick Reeves, who dropped in from Zamboanga, Indo-China and points east, accompanied by some sort of animal whose name slips your correspondent's mind, and which you wouldn't believe, even if we remembered it.

On December 10th, a flight of three ships, piloted by Colonel Junius W. Jones, Captain Albert Boyd, and Lieut. Charles W. Haas, flew to Miami, Fla. Upon their return, December 17, Colonel Jones explained to the assembled officers the various phases of the GHQ Air Force maneuvers, emphasizing certain technical problems, particularly with reference to communications, with which the Air Corps Technical School may be called upon to deal.

Selfridge Field, Mich., January 17th.

Majors Floyd M. Showalter, Kenneth E. Griffith, and 1st Lieut. Paul Hinds, Air Reserve, reported for 14 days' active duty on January 6th. Second Lieut. Joe S. Irvine, Air Reserve, reported for active duty January 15th, to be relieved about May 30th.

Snow covered terrain in the vicinity of Selfridge Field afforded an ideal condition for the old fashioned hay ride party enjoyed by the officers and ladies of the command on the evening of January 6th.

Ice skaters of Selfridge have an excellent opportunity to prove their skill on the recently completed ice skating rink on the post; on Lake St. Clair, and the canal at the southeast end of the field.

A number of enlisted men have been enjoying "shanty" fishing on Lake St. Clair northeast of the barracks, where "Shanty Town" boomed as soon as the ice was thick enough to hold automobiles and fishing shanties. Several members of the garrison have established "permanent residence" there by placing their shanties on the lake in that vicinity. An enterprising civilian maintains a store where fishing equipment may be purchased, and "Shanty Town" also boasts a restaurant. So far, only one of our officers has caught the "fever." He is none other than that inimitable fisherman, Captain Norme D. Frost. He has built himself quite a palatial cubicle, which indicates some preliminary training in the dark past along the lines of the "Specialist," but nevertheless provides a warm abode for patiently sitting over a hole in the ice with a live minnow dangling from one hand and a poised fish fork in the other.

Representatives of the Jam-Handy Motion Picture Company recently visited the post and obtained sound effects of airplanes in formation, on take-off, and landing, for use in future motion pictures, or in the movie recently filmed at Randolph Field, Texas.

Barksdale Field, Shreveport, La., Dec. 7th.

The 71st Service Squadron furnished the air base troops for the Miami maneuvers, augmented by trucks from the 60th Service Squadron and personnel from that organization and the Barksdale Field Station Complement. Two echelons of the truck train made the trip successfully, the first under command of Captain Joseph G. Hopkins, and the second under Major Roy Camblin. The first echelon will remain at Chapman Field during gunnery exercises by the tactical squadrons until approximately March 15, 1936.

All tactical units of the Third Wing Headquarters, the Third Attack Group Headquarters, the 8th, 13th and 90th Attack Squadrons, the 20th Pursuit Group Headquarters, and the 35th, 77th and 79th Pursuit Squadrons attended these maneuvers. Only a small nuclei of the Third Wing components remained at Barksdale Field, and these augmented the work of the station complement.

Note: The News Letter Correspondent submitted a cartoon depicting various styles of flight caps. This will appear in an early issue.

Scott Field, Belleville, Ill., January 16th.

Sixteen Scott Field enlisted men are attending night school in Belleville, Ill. Oddly enough, most of these students, who are taking clerical and typing courses, are high school graduates.

The Station Complement is leading the intersquadron cage championship games with three wins and no defeats. The first round was completed, and another round is about to begin.

Scott Field will have a few boxing bouts in the near future. A number of men are training at present.

San Antonio Air Depot, Duncan Field, Texas.

During December, 1935, the Engineering Department of the Depot overhauled a total of 21 airplanes and 48 engines, and repaired a total of 8 airplanes and 14 engines.

On January 2nd, the Depot dispatched civilian mechanic P.D. Smith, piloted by Staff Sergeant T.K. Dorsett, to Guadalupe Pump Station Field, near Fort Bliss, Texas, for the emergency repair of the engine in an O-25C plane, piloted by Lt. Halverson, of Crissy Field, forced down with engine trouble on an air navigation flight.

Major Morris Berman, Executive Officer of the Depot, was on 21 days' leave of absence since January 6th, visiting at Marlin, Texas.

The monthly Control Area supply and engineering conference and luncheon at this Depot was held on January 7th. Some 22 officers of the Air Corps stations in this Control Area and of the Depot were in attendance. The conference had the privilege of hearing from Captain J.M. Gillespie, Assistant Chief of the Power Plant Branch, Engineering Section, Materiel Division, Wright Field, on the subject of the latest developments in airplanes and engines. Captain Gillespie was at the Air Corps Advanced Flying School, Kelly Field, during that week, delivering a series of lectures on this subject.

March Field, Riverside, Calif.,

Filling a long felt want, 22 stalls for single enlisted men's automobiles will be available when the new hacienda type garage, now under construction, is completed early this coming summer. The garage will be located at the rear of the 19th Bombardment Group's Barracks and will replace the unsightly green temporary structures formerly located at that spot. In conformity with the Spanish colonial architecture of the rest of the post, the building will have adobe colored concrete walls with a red roof. Bachelor bombardiers welcome the change.

The garage is the only building project in the entire \$231,000 Works Progress Administration program. This program, which has employed a great number of Riversiders and Angelenos during the past few months, has effected many improvements to March Field, but the garage is the only concrete structure.

Major James S. Clarke, March Field's constructing quartermaster, announced that approximately \$69,000 had been expended out of the \$174,000 allotted to the Constructing Quartermaster's department. Of this figure, over \$40,000 was used for skilled and unskilled labor, and nearly \$29,000 for materials, most of which was manufactured in

Riverside County. Of the \$57,000 allotted to the post quartermaster, about \$23,000 has been used for labor and material in making necessary improvements to the post.

The new post quartermaster, Major John B. Casseday, recently arrived from Fort Leavenworth, Kansas, and is in charge of expending this part of the appropriation.

A most important project has been the erection of a six-foot fence around the reservation. It consists of ordinary fencing with barbed wire on top. This enables the one sentry to check all persons entering the post during hours of darkness. Work is nearing completion on the road on the west side of March Field and drainage ditches. One of the most important of future projects is the concrete road to be built in front of the hangar line.

Hawaiian Air Depot, Luke Field, T.H.

With summer on the way, a large portion of the personnel are beginning to think longingly of their vacations. Many plan to go to the mainland to visit their families and friends whom they haven't seen, perhaps, for years. Leave schedule being worked out by the Engineering Section indicates that approximately 20 employees from this Depot will be touring the mainland sometime during this year.

The Dope and Fabric Shop, which was in imminent danger of collapse from the inroads made by termites, is being retrussed and strengthened throughout. The Depot Supply is doubling the storage space of one of the sea-plane hangars by building a yard and shed alongside.

Mr. W.H. Beers, Jr., Lt. U.S.N., retired, recently resigned his position in the Supply Section as Purchasing and Contracting Agent to take a position in civil life.

Mr. Henry C. Clark, formerly with the Lockheed Corporation, arrived from the mainland during December to begin work in the Engineering Section of the Hawaiian Air Depot.

A bulletin has been prepared by the Engineering Section, covering in detail the living costs and conditions in Hawaii, together with all information that might be of value to personnel considering transfer to or employment by the Hawaiian Air Depot. These bulletins will be forwarded to the Personnel Office, Materiel Division, and to the Manager of the 12th Civil Service District in San Francisco.

In connection with the recent bombing expedition to Hilo, the Supply Section of the Hawaiian Air Depot is able to adjust another feather to its cap by virtue of its smooth and efficient operation under the direction of Captain C.P. Kane, who was Purchasing and Contracting, Supply and Public Relations Officer. Fifty drums of gasoline were shunted from the original destination and landed at the Hilo Airport; sand was procured for the sighting bombs and heavy flying equipment was issued. In spite of the spontaneous conception and completion of the expedition, the Supply functioned so well that the expendi-

ture of a minor amount only of extra funds was necessary.

By reason of this recent expedition to Hilo, the need has been recognized for a permanent allotment of Air Corps gasoline to be stored at the Hilo Airport. The landing field is excellent, and housing facilities are immediately available at the Kilauea Military Camp; furthermore, the landing field at Hilo is more centrally located than any other on the Island of Hawaii.

Luke Field, T.H., January 2nd.

50th Observation Squadron: Lieut. J.M. Chappell received orders for change of station to Fort Sill, Okla., and will leave for the mainland on the February boat.

Major H.G. Peterson, now on leave on the mainland, has been ordered to report for duty at Brooks Field Texas.

The Quarterly Service Test, with full military equipment, for the second quarter, was successfully accomplished on December 20th.

With the approval of the Squadron Commander, the noncommissioned officers contributed to a fund for the purpose of buying Christmas presents for the noncommissioned officers and the members of their families. The problem arose over eligibility to play Santa Claus, both 1st Sgt. Tilton and Tech. Sgt. Williams being candidates for the job. The affair was amiably settled by appointing the Squadron Sergeant Major (Private Bach) for the post, with Sgts. Tilton and Williams as assistants. Private Bach proved to be a real actor in the portrayal of the role, and the party was brought to a successful conclusion when the members of the squadron and their families gathered around the Christmas tree and the presents distributed.

The officers and noncommissioned officers and their families were invited to the dining room, where the able Chief-of-the-Culinary Department, with his able staff of assistants, were waiting with a dinner that should have cured all thoughts of home, the mainland, etc., for a long time. To quote from Walter Winchell, "a swellegant time was had by all."

Major Beau, our present and popular squadron commander, commended the enlisted men of the squadron for their untiring efforts during the year, and extended his sincere wishes for a Merry Christmas and Happy New Year to all members of the squadron.

Lieuts. Stewart and Cochran took advantage of a privilege covered by Army Regulations and took their wives for a ride in the clouds on December 21st. We are sure they enjoyed the Hawaiian scenery over the Island of Oahu, and we wonder if the Lieutenants were bothered with back-seat driving during the duration of the ride.

Our Mess Sergeant (Chief-of-the-Culinary) and Mrs. Johnson are taking suitcase drill preparatory to embarking for change of station to Brooks Field, Texas. They will sail for the mainland on the February boat. Happy landings, Johnson, and success at your new station. You can be assured that we will miss you here.

Staff Sergeant Fowler is charting the fishing grounds in the Territory, and there is some fear that the fishing industry will suffer untold

injury. Sergeant Fowler's motto (very anti-Isaac Walton) is get them all now!

The 5th Composite Group Commander, Lieut.-Colonel Duncan, was restored to flying status on the 20th, after a long illness, and spent the holiday period catching up with his flying time..

23rd Bombardment Squadron: Eight new privates arrived in the organization on January 2nd, and were welcomed with open arms by the clean sleeves of the squadron, who now hope for more time on the airplanes and less on fatigue.

Private James Monroe rejoined the squadron during the holidays. He has been in Tripler General Hospital since August 24, 1935, as the result of an airplane crash during night flying.

Chanute Field, Ill., January 14.

The Station Hospital Staff is once more intact. Major Eugen G. Reinartz returned just before Christmas from detached service at Carlisle Barracks, having graduated from the Advanced Field Officers' Course.

Captain Walter F. Heine reported in a few days later from the School of Aviation Medicine at Randolph Field, from which he just graduated. During the absence of these officers, Captain Dan C. Ogle was assisted by Lieut. H.F. Chwatal, Medical Reserve, who left to resume duty with the C.C.C. at Jefferson Barracks, Mo.

Fellow employees of the Information Division of the Office of the Chief of the Air Corps gathered at the home of George Ondusko on the afternoon of January 31st to pay him their last respects. The funeral services were very impressive.

Mr. Ondusko was ill for a number of months, his condition growing worse as time went on. It was found that an operation was imperative but, unfortunately, he did not survive it.

Mr. Ondusko had been with the Air Corps since April 1, 1918, and with the Information Division ever since it was established. During his assignment in the Publication Section of that Division, he was an unusually industrious and conscientious worker, operating the multigraph, mimeograph and addressograph, maintaining the distribution list for all publications disseminated by the Information Division, and contributing largely to the efficient functioning of that section. The News Letter is one of the publications to which he contributed his efforts to send out on time.

Mr. Ondusko is survived by his widow, two young children, his mother, two brothers and two sisters.

The heartfelt sympathy of the Office of the Chief of the Air Corps is extended to his bereaved family.

THE WING NAVIGATION SCHOOL AT LUKE FIELD

"Hats off to the two instructors, Lieuts. Curtis Lelay and John Egan, and to the crew chief and mechanics," says the Luke Field Correspondent, "for their excellent work in keeping the OA-3A in flying condition. These men worked night and day, Saturday afternoons and Sundays, giving 40-hour inspections, engine changes, etc., to keep the airplane off the ground so that the school could complete its schedule on time."

The class consisted of Captains R.L. Winn, J.N. Stone, Lieuts. F.H. Griswold, W.B. Offutt and P.S. Freeman, of Wheeler Field, and Captains W.C. Sams, W.R. Warren, Lieuts. J.G. Fowler, T.M. Hetherington and J.G. Armstrong, of Luke Field.

The course was completed by the preparation of a flight from California to Manila, P.I., over the route the "China Clipper" took. Each student was assigned one leg of the flight, and was required to prepare the sun curves, stars and moon curves, Great Circle course, distance, Mercator courses, and distances for every five degrees difference in longitude for the trip.

The wind currents near and around the Hawaiian Islands prove very changeable. At times the changes are 90 to 180 degrees in a period of five minutes. This requires the navigator to be constantly on the alert for any change of wind and ground speed. In spite of this fact, very good results were obtained.

---cOo---

A VERY AIR MINDED FLIGHT SURGEON

Airplanes, airplanes; morning, noon and night. But the "Doc" loves 'em. So does Mrs. John Walter, wife of Captain Walter, Flight Surgeon for the 41st Division Aviation, Felts Field, Spokane, Wash.

If there's anything "Doc" loves better than an eye, ear, nose or throat, it is an airplane. He wasn't satisfied to be just a Flight Surgeon, so he became a pilot soon after joining the Squadron.

Then, in search of a wife, his airplane instinct came to the front again, and he selected a licensed pilot for his better half. But the climax to his flying enthusiasm came recently, when Captain and Mrs. Walter selected a site on which to build their new home.

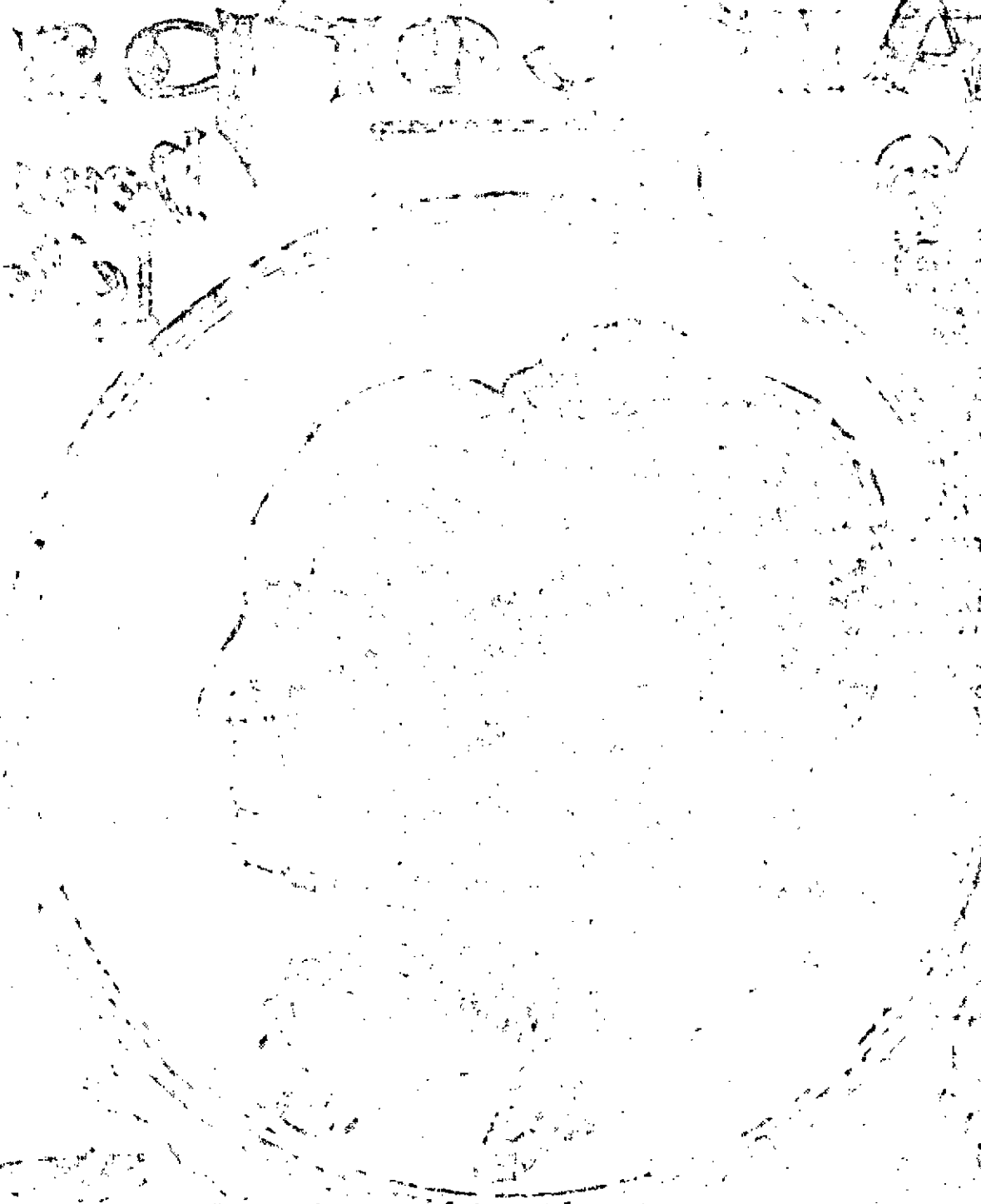
Surrounding Felts Field are many vacant pieces of property. However, only a street separated some of the lots from Felts Field. And it was on one of these lots that the Walters built their new home. The home is in a direct line with 75 percent of all take-offs and landings. At night the lights in the Walters' windows serve as a perfect beacon for departures.

---cOo---

Air Corps News Letter



ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.



DRAWING BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]
 DATE: [Date]
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 SHEET NO. [Number] OF [Total]

Information Division
Air Corps

February 15, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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MATERIEL DIVISION DEVELOPMENTS AND ACTIVITIES DURING 1935

By Brigadier-General A.W. Robins, Air Corps
Chief of Division

The past year was marked by greatly increased activities in the Materiel Division along all lines of administration, procurement and engineering. Replacement of personnel for the first time in several years has been possible. Increased procurement funds and the application of a new procurement policy have occupied the full capabilities of the personnel engaged in this function. And with the increased procurement and higher military requirements of aircraft, basic engineering problems have also increased. Demands for engineering research and test necessitated a more efficient grouping of engineering talent and the creation of additional testing facilities to keep pace with the advances in the design and development. The shortage of personnel, acute the past few years due to government economy programs, was partially relieved by availability of funds in May, 1935.

Administration of Wright Field

The principal changes made in the functional organization of the Materiel Division during the year were:

1. The transfer of radio aids to navigation from the Air Corps to the Aircraft Radio Laboratory at Wright Field, which is under the supervision of the Signal Corps;

2. Creation of a Physiological Research Unit, under the supervision of an officer of the Medical Department, for study and investigation of the effect of flying equipment and flight upon the normal mental and physical conditions of personnel.

New construction under the Public Works Program included the Static Test and Army Aeronautical Museum buildings, and an addition to the heating plant. A new high-power radio telephone station was installed at Patterson Field to facilitate service over the Army airways.

The Army Aeronautical Museum Building was completed, furnishing adequate permanent filing space for the valuable exhibits, documents, and books of the Technical Data Branch. In the basement are the shops, engine exhibits, and some offices. On the first floor is the main Museum Hall, in which many significant exhibits are preserved for examination by interested parties. There are also the administrative offices and the

Library reading room. On the second floor are the document room and quarters of the Air Corps Engineering School.

Air Corps Engineering School

This school gives a year's course in aeronautical engineering to specially selected Air Corps officers and serves as a source of commissioned engineering personnel for the Materiel Division. It is operated by a staff of four, augmented by Materiel Division engineers who serve as lecturers, using the Materiel Division laboratories as bases for their instructions. Seven officers took the 1934-35 course, as against 6 and 11 the two previous years, and four of these were assigned as replacements within the Division.

Field Service

An interesting function of this section during the year was the Depot Transport Service which, with its organizations located at five different fields, carried during the fiscal year 876 tons of freight, 402 passengers, making 661 trips and flying 411,782 miles.

For the general purpose of disseminating educational material, when same could be spared from the Air Corps uses, 831 loans and 83 transfers of property were made to schools and museums.

The Air Corps, in the fiscal year, issued to the National Guard equipment and services amounting to \$467,650.15 among its 19 squadrons and 18 photographic sections.

Flying Activities

Official Performance Tests and incidental flying aggregated 13,132 flying hours for the fiscal year, 13½ percent over 1934. The average number of military airplanes on test per month was 26.

Procurement

Procurement of aircraft is influenced by the rapidity of aircraft design evolution. There has been a steady advance in materials, in aerodynamic refinement, in engine power, and propeller efficiency. A modern airplane requires 3 to 5 years for development, commencing with design and construction of an experimental article; testing of engineering, performance, and specific military requirements; service testing for the purpose of obtaining its special tactical

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military value; and finally procurement in quantity for use in the tactical organizations of the Air Corps.

A consideration of experience and statistics leads to the conclusion that the first airplane purchased from a completely new design has small hopes of being placed in production as received. Problems of arrangement, aerodynamics, strength, flying qualities and performance are still so complicated in their inter-relations that it is difficult to calculate exactly the effect of each on the others.

Aerodynamics and Aircraft

In the raising of specification requirements for all types of aircraft, aerodynamic improvements were mandatory. Extensive wind tunnel tests were conducted on model aircraft to obtain data on which to base performance specifications in future procurement. The coordination of calculation with flight test results was furthered, especially in connection with controllable or automatic propellers. Field equipment for photographically measuring take-off and landing was developed in this connection.

The year 1935 found the low-wing monoplane established as typical in military aircraft. The advantage of compactness, held by the biplane, is of no great importance for land operations, and the structural strength of the biplane is no longer preeminent in view of the recent developments in stressed-skin wing and fuselage construction.

The airplanes contracted for in the Fiscal Year 1935 were:

50 two-place Consolidated Aircraft Corp. PB-2A Pursuit airplanes.

110 Northrop 2-F Attack; all-metal low-wing cantilever monoplanes, with trailing edge flaps and fixed landing gear.

103 B-10B Martin Bombardment airplanes.

71 Douglas O-46A Observation planes, with trailing edge flaps

30 Seversky basic training airplanes.

In this total of 364 airplanes, no biplane appears.

During the calendar year 1935, development was particularly demonstrated in the Bombardment types. Outstanding were the Martin, Douglas and Boeing airplanes submitted on procurement competition. This latter airplane represented an interesting step in Bombardment design in both performance and arrangement. Fortunately, a large amount of engineering as well as some flight test data were obtained prior to the time it crashed on October 30th, so that the invested effort was not lost for military purposes. Recent awards of the War Department will result in contracts for 82 Douglas Bombardment and 13 Boeing Bombardment airplanes.

The autogyro was given serious military consideration, and a contract was

let for one each of two types, for study and testing to determine their tactical value. The evaluation of data on airplanes and designs submitted in competition during the year absorbed a large percentage of the available time of the engineering personnel.

Considerable success was had in eliminating from aircraft structures the causes of destructive vibration. The control of conditions governing flutter and vibration has become increasingly important as the speed and size of aircraft have mounted. The search for lower speeds and steeper angles in landing is being continued through the medium of different types of flaps which have become almost universal on military airplanes as a means of improving landing and take-off characteristics.

Propellers

The propeller test rig, the largest plant of its kind in the world, continued to serve the Air Corps, the National Advisory Committee for Aeronautics and the Navy. With the improved methods used by the Air Corps for testing vibration qualities of propellers, important advances were made to keep propeller design abreast of the increasing horsepower of engines. Since it was found that practically all the Air Corps propeller failures could be attributed to vibration, a vibration study was included as part of the Army acceptance tests. A magnetic pick-up for mounting on the blade, for vibration recording in flight, is under development.

Structural Development and Research

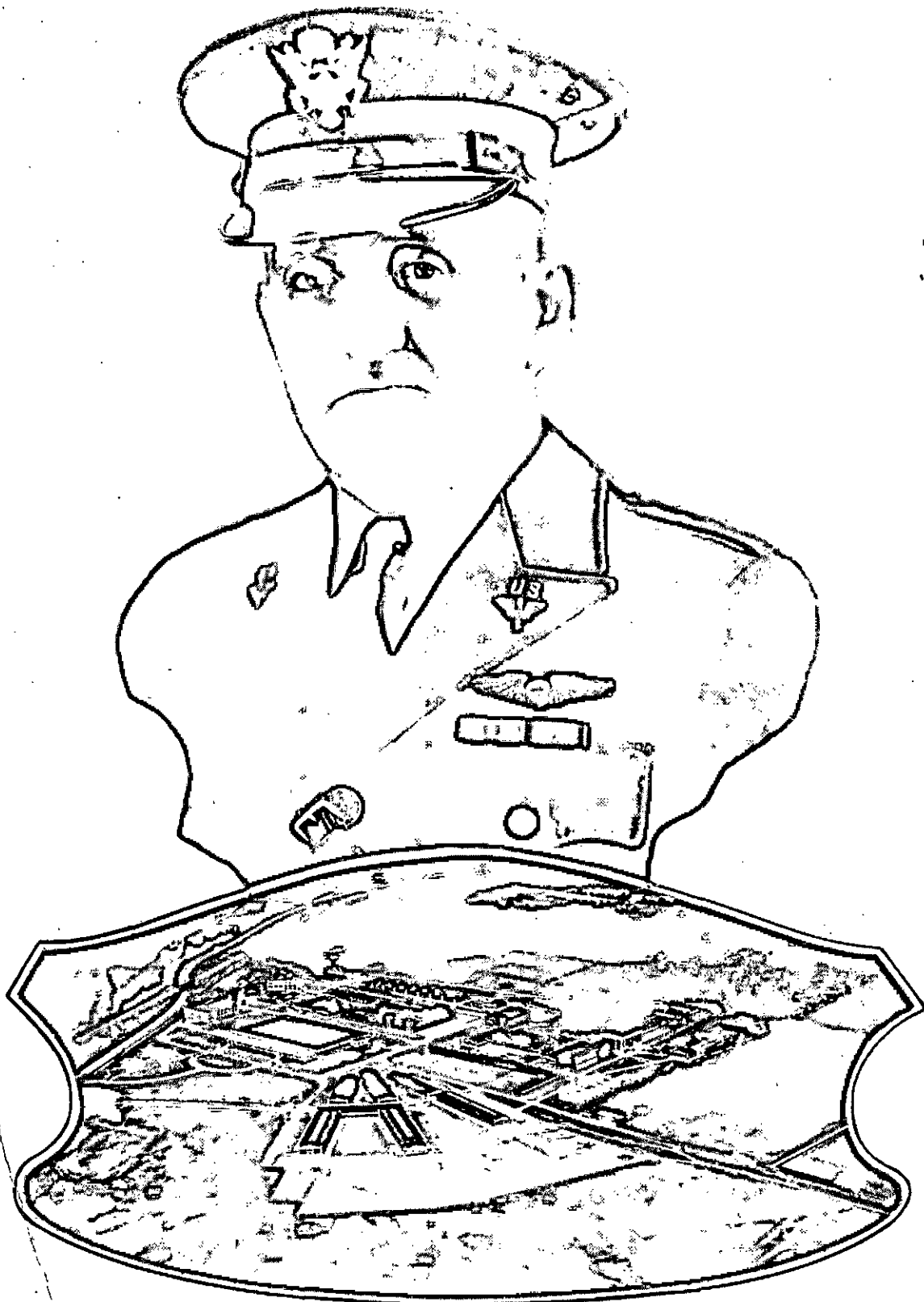
The use of symmetrical airfoils and stable airfoils having very low and relatively constant moment coefficients was encouraged and incorporated in all new designs to reduce the possibility of flutter due to aerodynamic instability at high speeds. This use also makes possible a saving of weight due to the smaller torsional moments to be handled by the wing structure.

The static test laboratory continued its development of improved test methods. This laboratory, with its massive testing stands, its special light portable scaffolding, and its precise apparatus for measuring bending and torsional deflections, affords modern facilities for the sand loading of aircraft structures. Three complete airplanes were tested to destruction under loading conditions simulating the most severe flying and landing conditions likely to be encountered in service.

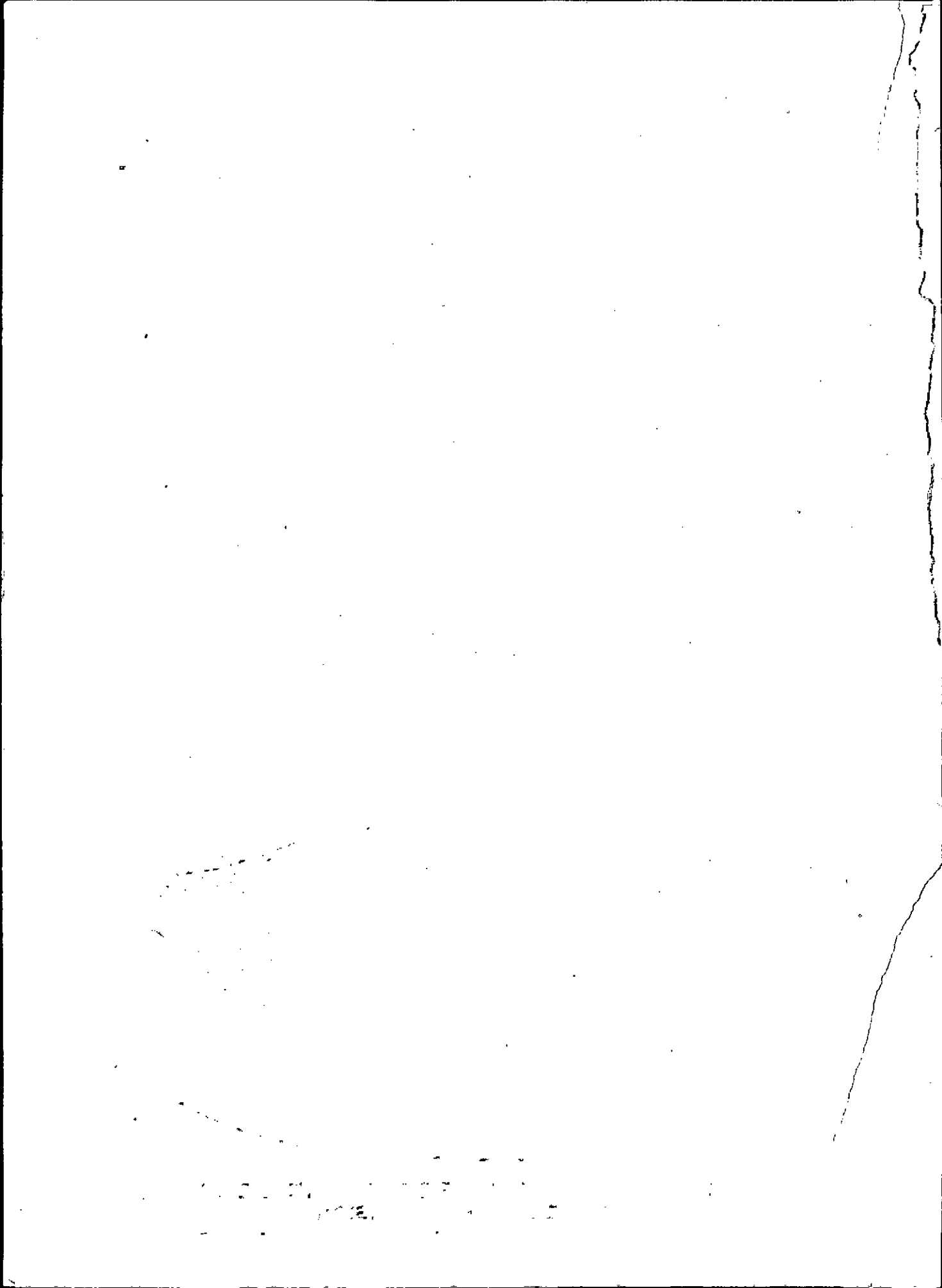
Lighter-Than-Air

The TC-13 non-rigid dirigible airship has continued in service, with additional equipment including a radio compass and an automatic directional pilot. One of the most important developments in this category is the construction of an observation balloon envelope entirely from synthetic rubber. The balloon has been made ready for test.

An extremely light portable airship moor-



BRIGADIER GENERAL A. W. ROBINS, AIR CORPS
CHIEF OF THE MATERIEL DIVISION

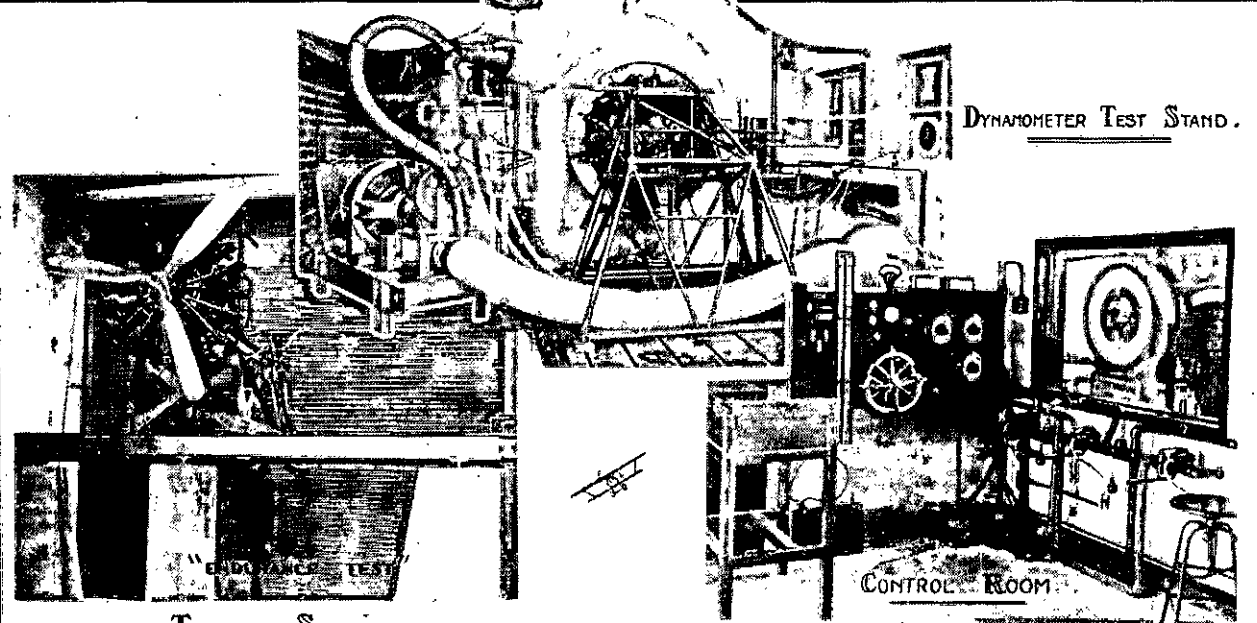


POWER PLANT LABORATORIES

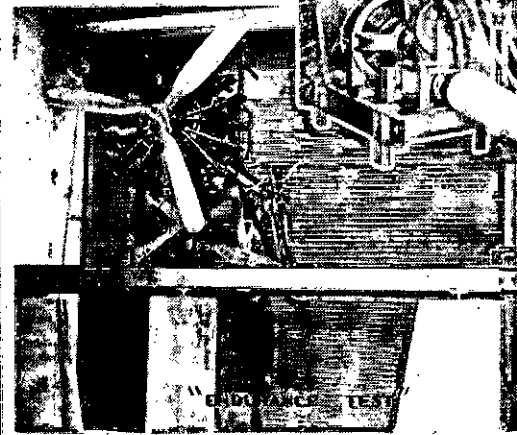
AIR CORPS • MATERIÉL DIVISION • WRIGHT FIELD



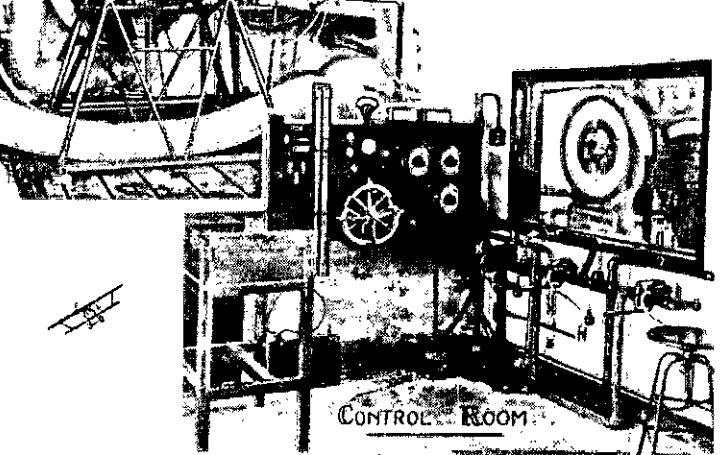
EXTERIOR
LABORATORY BLDG.



DYNAMOMETER TEST STAND.

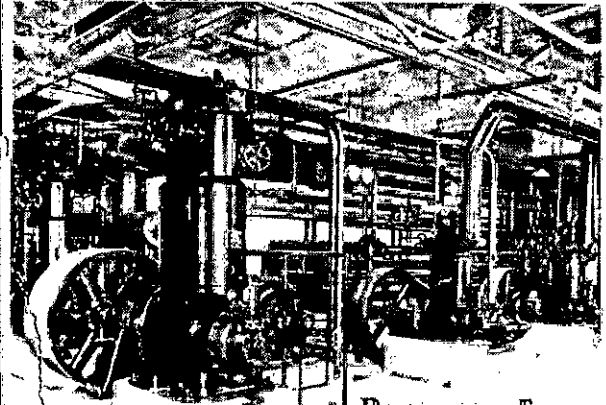


TORQUE STAND.

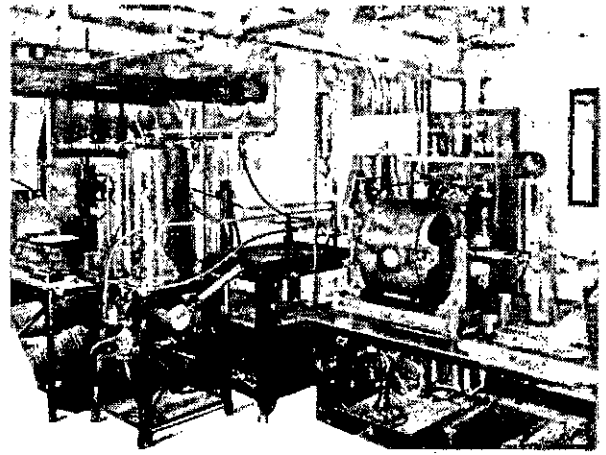


CONTROL ROOM

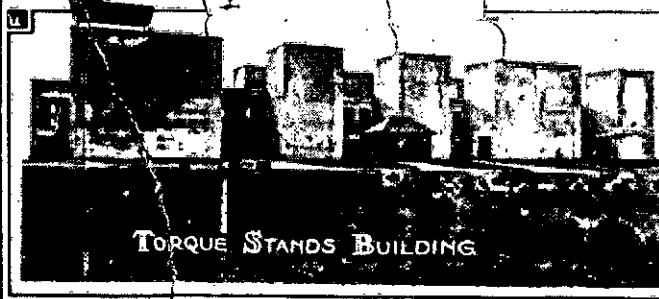
IN TORQUE STAND BUILDING.



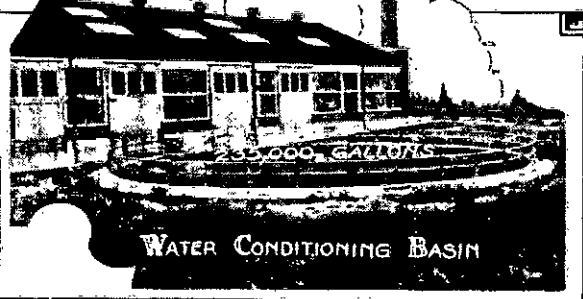
REFRIGERATING EQUIPMENT
IN POWER PLANT LABORATORY BLDG.



FUEL SYSTEM TEST, ALTITUDE COLD ROOM



TORQUE STANDS BUILDING



WATER CONDITIONING BASIN

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ing mast of a type suitable for transport by airplane was tested.

Power Plant Development

Power plant activities were devoted to the development of aircraft engines of the radial, vee, and horizontal types, principally in the 900-1000 horsepower category. Considerable attention was also given the problems of introducing new models of service engines having higher output and increased altitude ratings.

Marked progress featured the development of engine accessories, including fuel injectors and their application to engines; devices for the automatic control of carburetion (including fuel injection); magnetos; vacuum pumps for operating gyroscopic instruments and de-icer equipment; accessory drives; lubricants for improving all-weather operation. New superchargers of increased size and weight, and greater flexibility were studied. Two turbo superchargers were procured for 600 to 1200 h.p. engines. Center air-intake was provided to obtain ramming effect, and arrangement was made for varying the relation between the inlet and outlet of the compressor. Fuel of 100 Octane rating was procured to the amount of 100,000 gallons for test at Hamilton Field, a specification having been prepared for this fuel. Ice-forming tendencies of various fuels available commercially were investigated.

Synthetic rubber was found satisfactory for refueling hose and fuel, oil, and water connections.

Work in aircraft armament for the year included study and development of high caliber aircraft guns utilizing explosive shells; electrically operated bomb racks and mechanically operated flexible gun mounts. Studies leading toward the electrification of all bomb control and releasing mechanisms were instituted. Reduction of gun cameras from 35 to 25-mm. size film was made a project.

Material Development

The Air Corps adopted a policy requiring the use of "Alclad" for all combat planes designed with a non-corroding metal stressed skin, to the end that painting of the surfaces may be obviated. The Alclad metal offers the advantage also of giving satisfactory results in the tide-water stations where salt corrosion is troublesome.

Study was made of a new aluminum-magnesium-chromium alloy offering resistance to tidewater corrosion, and having good welding characteristics. It has been recommended for cowling, fairing, leading edges, etc. Considerable progress was made in the laboratory on spot welding of various aluminum alloys.

The Air Corps has been cooperating with other Government bureaus on development of corrosion-resistant electro-

lytic surfaces for magnesium. At present the metal is used chiefly in cast form for engine parts.

The use of spot-welded stainless steel in aircraft construction, especially for aircraft operating in the vicinity of salt water holds considerable promise. This method of welding has been approved for non-stressed parts, such as cowling, brackets, and reinforcing members attached to the skin and wing surfaces.

In materials the transition from wood and fabric to metal for the structural parts of military aircraft has been pronounced during the past 15 years. All military airplanes procured in the current fiscal year were of all-metal construction in which aluminum alloys represented 80 to 85 percent of the total weight of the structure. The use of the monocoque fuselage has drastically reduced steel requirements, while the air-cooled engine with its aluminum fuel and oil lines has almost eliminated the copper base alloys.

Equipment

Progress was made in the development and revision of navigating and engine instruments, electrical equipment, aerial photography, parachutes, clothing, and miscellaneous equipment.

Pre-focussed lamps have been specified for precluding faulty focussing in service. Revolving beacons will be equipped with these lamps in the 1,000-watt, 115-volt size.

Four portable power plants have been studied, one consisting of a small engine and generator separate from the main power plant. These are for the purpose of supplying emergency power in lighter-than-air craft and amphibian airplanes.

An experimental light-weight direct-cranking electric starter has been tested, and will be installed in an airplane for 8 months' service observation.

A new accelerometer and a sensitive altimeter have been tested, the latter under conditions of slight pressure change. This instrument reads 250 feet of altitude for one complete revolution of the pointer. A new navigation calculator for mechanically solving the astronomical triangle for celestial navigation has been developed, and ten articles ordered.

Engine synchronizing devices have undergone tests. The Sperry automatic pilot tested on the YB-12A was found satisfactory and 30 additional units will be procured.

Devices for the prevention of ice formation have been given serious study, and many tests conducted. Work on this project will be continued until completely satisfactory results are obtained.

The Army Air Corps instrument flying and landing system was adopted as standard by the Bureau of Air Commerce, and sets of the equipment were ordered with the cooperation of the Materiel Division for installation in 36 commercial air-

ports. Procurement has been initiated for installations at the Army fields.

Aerial mapping studies have continued throughout the year. A multiplex mapping machine was loaned to the Pittsburgh District Engineer Office to conduct a practical test on the mapping of the proposed Lake Erie to Ohio River Canal route.

Interesting tests were conducted, using two 5-lens mapping cameras suspended in a tandem mount, resulting in a final composite print which is octagonal in shape and gives the effect of having been produced by a 9-lens camera. Results of the practicability of this camera arrangement have not yet been determined.

Development continued in electrically heated winter clothing.

A flash steam generator was studied for heating engines mounted too high above the ground for application of ordinary engine heater.

An acceleration machine for studying

the physiological effects of increased accelerations on the human body was built. It is a 20-foot fuselage, pivoted at the center for horizontal rotation, and attains acceleration 30 times the force of gravity.

One of the foremost accomplishments of the year was the successful prosecution on November 11th, by Captains A.W. Stevens and Orvil A. Anderson, of the Stratosphere Flight sponsored by the National Geographic Society and the U.S. Army Air Corps. Much of the testing of instruments and preparation work was performed at the Materiel Division. The results of the flight are too well known to need comment.

The past year was one in which the multiplicity of projects has demanded the utmost of personnel. It is believed that the advance engineering foundations laid down have been basically sound and that the Materiel Division will advance from them to further accomplishments in the year 1936.

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NEW NIGHT LIGHTING EQUIPMENT FOR SCOTT FIELD

A total of 42 boundary lights, 5 obstacle lights and 12 floodlights were installed at Scott Field, Belleville, Ill., during the past year to supplement the night lighting equipment already in use. The cost of the new equipment was \$18,155. Scott Field is as well lighted for night activities as any field in the United States.

Over four miles of cable were used in connecting the 42 boundary lights encircling the approximately quarter square mile landing field. These lights are set in concrete foundations in the ground and are covered with an iron grill so that aircraft may run across them without damaging the 100 watt lights.

The 12 new floodlights are 24 inches in diameter and use 3,000 watt tubular lamps. These are arranged in three series of four floodlights each. Four floodlights are mounted on a steel frame, called a bridge assembly, and are adjusted so that their combined light covers a large area of ground.

These three series of floodlights are located in strategic positions for both airplane and airship night landings. One is located in the northwest corner of the landing field and is directed in a southeasterly direction. The other two are located at the northern corners

of the airship hangar and are so directed that they cover all the ground in the northwest, north and northeast.

These new floodlights replace eight of the obsolete type.

Five new obstacle lights were mounted on objects over 60 feet in height, bringing the total number of obstacle lights to 16. The new lights were placed on the following structures: one on each of the two smokestacks of the central heating plant, one on the airship hangar heating plant smokestack, and two on the roof of the balloon hangar.

The boundary lights and the floodlights are both automatically and remotely controlled from the small, steel building located conveniently near the operations office. The floodlights are also controlled by switches in the airship hangar control room.

These new lighting features supplement the revolving beacon with split ray lens and the two 60-inch diameter searchlights which use 10,000-watt globes. The beacon is used for all aircraft, while the searchlights are used only for airships. The split ray lens sends out two beams; one following the other.

All of these features make Scott Field one of the best landing fields in the country.

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The gas plant at Scott Field, Belleville, Ill., purified over a million cubic feet of helium gas in 1935. It also manufactured a million cubic feet of hydrogen for use in meteorological balloons at Selfridge, Chanute and Scott Fields, and Fort Sheridan, Ill.

Brigadier-General H.C. Pratt, commanding the 2nd Wing, GHQ Air Force; Lieut.-Colonel Willis H. Hale, Executive, and Capt. Dwight B. Schanep, Operations Officer, flew to Selfridge Field, Mich., on February 2nd. General Pratt and his two staff members are on an inspection tour of GHQ Air Force activities.

NAVIGATION TRAINING IN THE 2ND BOMBARDMENT GROUP, GHQ AIR FORCE

Shortly after the disbanding of the Advance Navigation Training Unit at Rockwell Field, Calif., in June, 1935, the GHQ Air Force Headquarters directed that the training of officers in Navigation be continued by each Bombardment Group under the direction of Group Navigation Officers and prescribed a course of instruction with the objective of qualifying Bombardment pilots in both Dead Reckoning and Celestial Navigation.

The importance of this training was emphasized in anticipation of accurate navigation becoming increasingly essential to the efficient operation of Bombardment units as their radius of action increases with the rapid advances being made in the development of long-range Bombardment airplanes.

The course of training prescribed included 66 hours flying time as navigator, a resulting approximately equal number of hours as pilot, and 180 hours ground instruction. This time was suballotted, as follows:

Flying time as Navigator:

Navigation missions 30 hours
Interception missions . . . 18 hours
Radius of Action missions 18 hours

Ground Instructions:

Instruments, Use and Maintenance 15 hours
Maps, Projections, Sailings 25 hours
Theory of Navigation by Dead Reckoning 20 hours
Radius of Action, Interception, Search and Patrol . 30 hours
Theory of Celestial Navigation and Sextant Practice 60 hours
Meteorology 30 hours

In accordance with this directive, a Navigation Unit was organized in the Second Bombardment Group during the latter part of July, 1935, with Captain A. Y. Smith as Navigation Officer and 1st Lieut. J. A. Miller as Assistant Navigation Officer, and with two enlisted men detailed as clerk and plotter. On August 1st, four officers were detailed to comprise the first class, but a short time later two of these officers were relieved due to a shortage of airplanes equipped with navigation instruments.

The two remaining student officers, 1st Lieuts. D. H. Kennedy, from the 49th Bombardment Squadron, and W. O. Senter, from the 20th Bombardment Squadron, completed the course in December after having first put their training to test by making an over-water flight from Langley Field to Jacksonville, Fla., and return. After passing the North Carolina Capes on this flight, land was not again sighted until a few minutes before crossing the coast line south of Fernandina, Fla. (a distance of over 400 statute miles). Continuing on the

same course for approximately ten minutes, the ship passed $2\frac{1}{2}$ miles to the left of the Jacksonville Airport, $3\frac{1}{4}$ minutes ahead of the computed time of arrival. Similar success was attained in communicating with the U.S. Coast Guard Stations at Norfolk, Va., and Jacksonville, Fla., which were advised of the position, course and ground speed of the airplane at periodic intervals. Aside from obtaining weather reports through the above Coast Guard stations, the radio was not used as an aid to navigation, the navigation being entirely by dead reckoning, though a number of celestial observations were taken as a check on the position of the airplane.

On January 6th, the following officers were detailed to comprise a second class:

Major E. C. Black, 2nd Bombardment Group Headquarters,
Captain R. E. Nugent, 96th Bombardment Squadron,
Captain R. F. Travis, 49th Bombardment Squadron,
1st Lieut. G. E. Williams, 20th Bombardment Squadron.

It is anticipated that, as additional equipment becomes available, this class will be able to perform a considerable percentage of its training in Bombardment airplanes simulating actual operations.

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ALL IS WELL WITH THE THIRD WING

"The Third Wing now feels that it has graduated into a full-fledged position in the GHQ Air Force," says the Barksdale Field Correspondent, and he then goes on to say: "It was a gala day for the Third Wing when the first notice was received that the Commander of the Third Wing is hereafter to be a Brigadier General. The Wing and Post personnel have spent a great deal of time congratulating themselves and each other on the fact that the Brigadier-General is none other than General Brant, whose loss as commander of the Third Wing and Barksdale Field had been rumored and greatly feared.

Owing to certain deficiencies in the English language, we must borrow from the Japanese and Hawaiian to express our real feelings in saying: 'Banzai and many, many Alohas to General Brant.'"

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Training in the Third Attack Group at Barksdale Field, La., during January stressed Aerial Gunnery, as directed in T.R. 440-40 (Revised). Enlisted gunners have been receiving training in Aerial Gunnery to include firing on the 1000" range and Skeet shooting. All the officers of this Group had their initial qualification test in Instrument Flying and all but two had the requalification test required each 6 months by GHQ Air Force.

TURNOVER MOCK-UP OF P-26A PURSUIT AIRPLANE

A cabin to make it possible for flyers to operate in the high winds induced by the speeds of modern airplanes has become a necessary part of every military model. Heretofore these cabins have been added structures built upon the fuselage rather than an integral part of the fuselage design.

In order to gain for the cabin the added strength contributed by depth of structure, it is planned to incorporate the cabin framework as an integral part of the original fuselage design. To obtain proper dimensions for such a structure, those which will best contribute to the safety and comfort of personnel of all sizes as well as to the best structural effects, a board of officers convened at Wright Field, Dayton, Ohio, on January 28th to make a study of a P-26A fuselage mock-up, with a cabin protected by a metal skid. The fuselage was underslung by a metal cradle in order to accomplish nose-overs with personnel aboard.

Again and again during the investigation, the officers of the Board, Major John F. Whitely of Langley Field, Va.; Captain Lowell H. Smith, of the Office of the Chief of the Air Corps, Washington, D.C., and Lieut. R.C. Wilson, of Wright Field, entered the cockpit to experience actual nose-overs, which were accomplished by a crane lifting the tail until the fuselage flipped over on the cradle hoops, upside down.

The present type of airplane cabin is constructed to accommodate the largest personnel, and in the case of a nose-over the smaller men had as much, sometimes, as eight inches farther to fall before their heads struck the sponge rubber pads in the cabin roof. The idea is to obtain a reduced size cabin structure which will allow for less space above the average pilot's head, with the cockpit seat raised or lowered according to the aviator's height and forming the variable factor.

The Board confined its recommendations to the single-engine, low wing monoplane cabin. The Board completed its report and recommendations the first week in February.

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FIRST PURSUIT GROUP IN WINTER TEST MANEUVERS

Three officers and 30 enlisted men of the 1st Pursuit Group, Selfridge Field, Mich., departed on January 31st in four transport planes (one of which was from Wright Field and one from the Middletown, Pa., Air Depot) for Mitchel Field, N.Y., to participate in the Winter Test Maneuvers of the GHQ Air Force. The Winter Test Group is scheduled to proceed from Mitchel Field to Concord, N.H., and then to Burlington, Vt.

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ATTACK PERSONNEL IN WINTER TEST MANEUVERS

Ten officers and ten enlisted men of the 13th Attack Squadron, Barksdale Field, La., were selected to represent the 3rd Attack Group in the Cold Weather Test of GHQ Air Force personnel and equipment in the New

England area. Captain William P. Sloan, Air Corps, Supply Officer, and Sergeant Howard E. McKelvy, Supply Clerk, departed for Mitchel Field on January 25th as advance representatives for formation of the Winter Test Group and for the purpose of making arrangements for the quartering and rationing of the men of the main flight enroute to Mitchel Field. The remaining personnel in nine A-12 airplanes, led by Major Edward M. Morris, Air Corps, Commanding Officer of the 13th Attack Squadron, departed for Maxwell Field enroute to Mitchel Field on the morning of January 28th.

The weather at Barksdale Field seemed to rise to a spirit of cooperation and gave the people a light sample of what they may expect in the way of snow and low temperatures.

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MEXICAN FLAG PRESENTED TO A. C. TRAINING CENTER

On February 8th, Lieuts. Jose Del Rio and Fructoso Perez Suarez presented to the Air Corps Training Center the national colors of Mexico. This flag was a gift from the Mexican Department of Aeronautics in appreciation of the cordial relations between the aeronautic branches of Mexico and the United States and for the courtesies and instruction rendered Mexican students at the Training Center.

The presentation ceremony was held in the office of General Chaney, and in addition to the two Mexican pilots who flew the flag from Mexico City to Randolph Field there were present Senor Benjamin Hill, Mexican Consul General; Senor Ortega; Major Prieto, student at the School of Aviation Medicine; Lieut. Mariano P. Munoz, now undergoing flying training at the Primary Flying School; and several members of the staffs of General Chaney and Colonel Harms.

Following the presentation, the visiting Mexicans were conducted on a tour of Randolph Field and were later entertained at luncheon at the Randolph Field Officers' Mess.

This Mexican flag adds to the collection of Central and South American flags, presented under similar circumstances, now in possession of the Air Corps Training Center.

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Twenty P-26A airplanes of the 20th Pursuit Group, with Major Armin F. Herold, Air Corps, in command, departed from Barksdale Field, La., on January 30th for Mitchel Field, N.Y., in connection with the Cold Weather Test Flight.

Colonel Roscoe Turner, noted civilian pilot, visited Shreveport, La., on January 23rd, using Barksdale Field as his airport. He delivered several addresses in the City of Shreveport and expressed himself as delighted with the facilities available at Barksdale Field.

Twenty-four officers and flying cadets, led by Major Warren A. Maxwell, departed from Selfridge Field, Mich., in P-26A airplanes on January 31st for Barksdale Field, Shreveport, La., to participate in aerial gunnery practice on ground targets at that station. Twelve enlisted men will be ferried to Barksdale Field in two transport planes from that station in the near future to assist with gunnery operations of the 1st Pursuit Group.

PROMOTION OF NONCOMMISSIONED OFFICERS

A list is given below of noncommissioned officers (Technical Sergeants and First Sergeants) placed on the eligible list for promotion to the grade of Master Sergeant, Air Corps, January 1, 1936. Names which are marked with an asterisk are First Sergeants.

No.	Name	No.	Name	No.	Name
1	Skrobacke, Frank #	66	Davids, Ewald*	131	Mathews, Daniel A.
2	Browne, Fred*	67	Moslander, Charles E.	132	Dreier, Elmer L.
3	Arnold, James C.	68	Innes, Victor A.	133	Maroul, John J.
4	Arsenault, John J.	69	Cobb, Horace W.	134	Glasscock, Benton D.
5	O'Callaghan, John P.	70	Swanson, Nels E.	135	Domes, Johann
6	Lee, Standford J.	71	Wing, Richard E.	136	Palmer, Clarence A.
7	Lee, Otis K.	72	McGhee, Lloyd H.	137	Myers, Allen G.
8	Wright, Edward J.*	73	Doyell, Clyde W.	138	Kelly, Robert K.*
9	Davis, Frank S.	74	Darby, Harry	139	Smith, Alfred N.
10	Lamb, Estes	75	Shephard, Delana A.	140	Casto, Clyde R.
11	Finch, August	76	Wentzell, James H.*	141	Moorhead, William B.
12	Taylor, Gust A.	77	Sage, Hobson D.	142	Cattarius, Adolph
13	Weber, Lee R.*	78	Wheeler, Adam L.	143	Thompson, Benton T.
14	Albee, Lидias H.	79	Ritenour, Ervin W.	144	Hoffman, Carl
15	Myers, Joseph L.	80	Stein, Joseph J.	145	Thomas, Robert H.
16	Udell, William H.	81	Schmidt, George E.	146	Tupper, Hobson
17	King, Ernest N.	82	Leroy, Harold D.	147	Drobin, Joseph S.
18	Dunlap, Roy C.*	83	Brown, Lee E.	148	Hooe, Roy W.
19	Danie, Thomas*	84	McCartney, George D.	149	Clark, Irvin L.
20	Rogers, Richard	85	Blais, James G.	150	Jones, William L.*
21	Napier, Wythe J.	86	Haffner, Hans G.C.	151	Stolte, Arthur
22	Tingle, Dan W.	87	Wiedekamp, Karl T.	152	Moore, Virgil
23	Booth, Brainard D.	88	Hluchan, Charles	153	Casey, Patrick T.*
24	Adams, Arthur H.	89	Herb, Donald P.	154	Burroughs, John J.
25	Riley, William J.	90	Auer, Adam M.	155	Wallace, John R.D.
26	Duke, Robert*	91	Hill, James W.*	156	Revert, Artie L.
27	Arnold, George	92	Cheska, Benjamin A.	157	Forrest, James A.
28	Mooney, Harry	93	Albin, Louis B.	158	Freathy, Albert E.
29	Small, Ballard B.	94	Graham, John	159	Hartley, Earnest
30	Hanaford, Don A.	95	Downing, Harvey J.	160	Henneck, Michael P.
31	St. John, Ruben	96	Miller, Fred P.	161	Townsend, William B.
32	White, Benjamin L.*	97	Turner, William H.	162	Fox, William B.
33	Laver, Joe G.*	98	Hopper, Walter S.	163	Redifer, Earl B.
34	Maxwell, Edcil C.	99	Apple, William V.	164	Randles, Arthur E.
35	Miller, Edward	100	Leary, Vernon G.	165	Scott, Elliott
36	Wetteran, Edward W.	101	Raymond, Edgar J.	166	Hughes, Raymond J.
37	Moody, William T.*	102	Jones, Hurley D.	167	Sleeth, Edward
38	Goff, Ira A.	103	Van Matre, William H.	168	Pope, William E.
39	Duprey, Joseph A.	104	Jackson, Paul B.	169	Miller, Joseph J.*
40	Grimme, John P.*	105	Roberts, Carl C.	170	Silvers, Lee
41	McKnight, Charles H.	106	Hoijer, Richard E.	171	Marth, Hugh J.
42	Locher, Joseph H.	107	Grabsky, Walter*	172	Reist, Emil
43	Kretz, William	108	Williams, Wallace H.	173	Akers, Thornton
44	Bentley, Leonard L.	109	Filkins, Joseph A.	174	Tomberlin, George D.
45	McAndrews, John	110	Schaeffer, Chris J.H.	175	Junkert, Albert G.
46	Malloy, Stephen A.	111	Willison, Thomas L.	176	Foster, Edwin C.
47	Ceccato, Peter	112	Peckham, Russell C.	177	Hamilton, Robert E.
48	Walters, Clyde L.	113	Valtierra, Leobardo	178	Callaghan, George
49	Hobson, Earl	114	Gibbins, Stanley K.	179	Croy, William D.
50	Stoser, Walter	115	Simons, Wilbur J.	180	Suddeth, Clarence E.
51	McNeely, Ralph	116	Baros, Rudy J.	181	Ward, Lambert C.
52	Suggs, John M.	117	Fisher, George H.	182	Gray, Henry H.
53	Leffler, Charles H.	118	Thermos, Nicholas*	183	Mitchell, Gregory A.
54	Kendrick, Bryan J.	119	Jewell, Arvin B.	184	Ferguson, Archie L.
55	Carpenter, Ross	120	Glasscock, Harry	185	Brown, George D.
56	Kohn, Louis	121	Boward, Richard C.	186	Scott, Grover B.
57	Hohensee, Emmett F.	122	Koziboski, Edward A.	187	Axford, Leo W.*
58	Harrison, George E.*	123	Fitzgerald, John E.	188	Harmon, William T.*
59	Ashby, Walter G.	124	Chambliss, John R.	189	Brees, William M.
60	Justice, Nye P.	125	Stanowich, Steve*	190	Crawford, Wallace W.
61	Draper, Charles W.	126	Mueller, Charles	191	Field, Charles B.
62	Witsch, Henry A.	127	Merian, August A.	192	Dozier, John
63	Ward, Leamon V.	128	Fusz, Charles F.	193	Schoeler, Oscar H.
64	Moloney, Philip E.	129	Hobart, Clyde J.	194	Philapy, Russell L.
65	Gordon, Frederick J.	130	Himes, Olin C.	195	Siebenaler, Frank J.

* Appointed Master Sergeant, January 2, 1936.

196 Hahn, Richard W.*
197 Cayhne, Arthur H.
198 Hewitt, Albert G.
199 Dryer, Howard H.
200 Grey, Joseph R.
201 Totman, Theodore C.
202 Johnson, Lloyd N.*

NOTE: The delay in the publication of this list has been caused by the receipt of inaccurate data as to total length of Army service of certain noncommissioned officers, necessitating a thorough check with available records in order to determine the proper place of each man on the list.

It will be noted that the names of a number of noncommissioned officers appear on the list, especially near the top thereof, who were not carried on previous lists. This condition is due principally to the fact that such men, appointed Technical Sergeants in 1930, have recently acquired the minimum of five years' service in the second or higher grade in the Air Corps to establish eligibility for the grade of Master Sergeant, Air Corps. Their total length of Army service thus places them ahead of noncommissioned officers with less service. The large increase in the total number of men on the qualified list is also probably due to this same condition.

Those Technical Sergeants appointed in 1931 will likewise acquire five years' service in grade in 1936, and, if subsequently recommended for promotion, will be placed on next year's qualified list in their proper places according to total length of service. There will thus not be so many Technical Sergeants acquiring the five years' service in grade after 1936.

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PHOTOGRAPHIC BOARD CONVENES

A Board of Air Corps officers met at Wright Field, Dayton, Ohio, on January 13th, for the purpose of determining the most suitable type of aerial photographic equipment, ground equipment, and processing equipment for use by the Air Corps, the type, quality and quantity of photographs that may be expected from Corps Observation, GHQ, and Corps of Engineers, to recommend a comprehensive development program for adequately meeting the needs of the service, and to suggest such changes as may effect economies in the use of photographic supplies and equipment. Members of the Board were:

Major Frederick W. Evans, Maxwell Field, Montgomery, Ala.

Major Jasper K. McDuffie, GHQ Air Force, Langley Field, Va.

Captains Albert W. Stevens and Joseph H. Hicks, Wright Field, Dayton, Ohio.

Captain George C. McDonald, Office of the Chief of the Air Corps, Washington, D.C.

Captain Edwin C. Bobzien, National Guard Instructor, Baltimore, Md.

Captain George W. Goddard, Chanute Field, Rantoul, Ill.

Captain Paul T. Cullen, Mitchel Field, N.Y.
The Board was in convention until January

20th, and a report of its findings was submitted to the Chief of the Air Corps.

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TEST FLIGHTS OF THE TC-14 AIRSHIP

The TC-14 airship at Scott Field, Belleville, Ill., has made 23 test flights for a total of 65 flying hours. The airship has proven successful to those officers who are qualified to fly it. The TC-14, by using only two motors, is able to reach a speed of 72 miles an hour. With all three motors, the airship, though the engines have never been opened wide, is capable of a speed in excess of 85 miles an hour, which is high for this type of aircraft. The TC-14, a sister ship to the TC-13, was commissioned for service August 28th, 1935.

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DEMONSTRATION OF ATTACK AVIATION TACTICS

Nine officer pilots and nine enlisted mechanics, in nine A-12 Attack airplanes of the 8th Attack Squadron, representing the 3rd Attack Group, departed from Barksdale Field, La., for Maxwell Field, Ala., on the morning of January 27th, for the purpose of conducting a demonstration in the tactics, technique and employment of Attack Aviation for the students of the Air Corps Tactical School. The demonstration included the use of parachute bombs and lime spray, representing chemicals.

Lieut.-Colonel Earl L. Naiden, Commanding Officer of the 3rd Attack Group, and Major Oliver S. Ferson, Group Operations Officer, with two enlisted mechanics in two Curtiss A-12 Attack airplanes, departed for Maxwell Field on the afternoon of January 27th for the purpose of observing the Attack Demonstration, which was conducted on January 28th. The flight returned on January 30th.

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TEXAS RESERVE OFFICERS SET MARK IN CREDIT HOURS

Nineteen Air Reserve pilots in the Brownsville, Texas, district have set a mark in credit hours earned which is believed to establish a record unequalled in any part of the United States. These 19 officers, ranging in rank from Major to Second Lieutenant, have a total of 8,609 active duty credit hours in grade, and 14,064 inactive duty credit hours in grade. The requirements of the War Department are that each Reserve officer must earn 100 hours active and 100 hours inactive duty hours while holding his present grade. The average of the Brownsville Reserve pilots is 453 hours' active duty credits and 740 hours' inactive duty credits.

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The News Letter is indebted to 1st Sergeant Elmer C. Lindquist, Air Corps, Connecticut National Guard, Hartford, Conn., for the very attractive cover page featuring this issue of the News Letter. Sergeant Lindquist has submitted several other cover designs which will be used in future issues.

Thank you, Sergeant Lindquist, and let us hear from you often.

MILITARY AVIATION
By Lieut.-Colonel B.Q. Jones, Air Corps
Part II.

POWERS AND LIMITATIONS OF ARMAMENT AND EQUIPMENT

Machine Guns.

Machine guns are excellent weapons when they work. When they don't, the predicament is acute if a plane is caught alone. Flexible guns can be worked on to a limited extent in the air and can be put back in commission, if time is available. All that can be done to the fixed guns is to pull the charging handle. If the guns clear, O.K. If they do not, nothing can be done about it. Only one flexible gun is now provided each gunner. If that gun malfunctions seriously, the sector defended exclusively by that gun is defenseless. In the case of two seaters, it means the fixed gun of the pilot is the last resort and, if the plane fights at all, it has to fight as a single seater.

Planes operating alone, especially if caught by superior performing enemy Pursuit, are the ones reported missing, if their machine guns stop functioning. A most lamentable situation is to be caught without ammunition. Long running fights deep into and out of enemy territory can exhaust the supply of ammunition. The ensuing tragedy is sickening.

Flying in units of several planes provides safeguards against such situations.

The personnel, motors and fuel tanks of airplanes are vulnerable to calibers .30 and .50 machine gun fire. The probability is too remote of hitting a structural member that will cripple a plane. The airplane structure is very light, with the barest skeleton of necessary structural members. The older fabric covered models could be perforated with calibers .30 and .50 machine gun fire without bringing them down. Unless modern metal wings can be seriously damaged by such calibers, or unless the hydraulic impact of the caliber .50 bullet upon gasoline filled wing tanks will weaken the wing structure, stronger pursuit armament will be necessary. The defensive fire of multi-seaters, especially if in good defensive tactical formations, is sufficient to keep Pursuit at respectable distances. Also, if a defensive formation has time to maneuver, it can maneuver so as to make it very difficult for formations of Pursuit to deliver coordinated attacks. Unfortunately, a tactical formation affording a good defensive fire against Pursuit, is the best target for A.A. fire. About the best tactics for Pursuit is to herd multi-seaters into close defensive formations over A.A. batteries. A gun firing a supersensitive fuse shell with sufficient explosive charge to damage any airplane part struck is necessary, if

Pursuit is to perform a useful defensive role against large Bombardment formations. When shell guns are provided, then the entire airplane becomes a vulnerable target, instead of, as at present, only the personnel, engines and fuel tanks.

Flexible guns are still limited to caliber .30 because of the difficulty of mounting guns in light airplane structures. The caliber .50 can be fired as a fixed gun forward. Pursuit planes are so equipped.

Airplane speeds have increased a 100% since the war, while caliber .30 machine gun velocities have remained the same. The instrumental velocity of the caliber .50 is 2,500 foot seconds at 78 feet. The average accurate firing range against small air targets is still the same as during the war, 200 yards. The effective ranges of the calibers .30 and .50 are greatly in excess of the deflection ranges at which they can be accurately fired into an airplane cockpit or engine. The problem of deflection firing has increased with increased airplane speeds. Flat trajectory, high muzzle velocities are required to compensate for them. There has been no such compensation to date.

Ground targets as large as tanks permit of short range, accurate aimed fire from the forward fixed guns of low flying planes. Rear guns are ineffective because of the great deflections at the speeds flown. Only one such individual target can be effectively fired upon in each attack or dive. This requires repeated attacks. For formation attacks, against ground and air targets, separate targets are necessary for each plane. The danger of collision between airplanes is too great to permit of simultaneous concentrations of fire upon a single target by the forward guns of even a 3-plane formation. Troops in long columns are most effectively attacked by planes in column; troops in an area, by planes abreast. Their fire against such targets amounts to a fast rolling barrage.

High speeds require the firing of flexible guns from turrets or from behind the protection of hoods. The physical effort is too great to swing guns exposed to the airblasts. Exposed to the air flow, they have a marked harmful effect upon high speeds. A poorly designed turret can reduce the high speed 5%. The gimble mounted flexible guns and bucket swung rear seats of the two-seaters afford excellent firing platforms under their protecting hoods. However, any closed turret with the gun firing through a small aperture, im-

pairs the visibility of the gunner and the ease with which he can follow a target, swing and aim his gun.

Weapons of Attack Aviation

The bombs and chemicals of Attack Aviation are laid from low altitudes that eliminate the need for bomb sights. To make the bombs "stay-put" on the targets and prevent ricocheting, they must be provided with parachutes. To prevent bomb fragments from damaging the planes themselves, there must be delayed action. Dropping the parachute bombs into heavily wooded areas, will hang the bombs in the trees by their parachutes. The delayed fuze action of the bombs makes necessary considerable distances between successive waves of planes attacking a small area, and requires preliminary maneuvers for a sudden, surprise attack upon a broad front, or a simultaneous oblique attack by all planes upon a long, and especially a winding defile. If the defile lies at the bottom of a deep ravine, then attacks paralleling the defile should be made. The only precaution following planes have to take in laying chemicals is to keep out of the propeller wash of leading planes. This is guarded against anyway, on account of the danger of the propeller wash to planes flying at low altitudes, particularly in close formation. Demolition bombs require penetration to secure the "tamping" required for effective explosion. Reasonable altitudes are necessary to secure required penetration. This forces the attackers into the role of light Bombers when they carry demolition bombs and, at altitudes of 1,000 feet, makes them vulnerable to all forms of ground fire from small weapons.

Bombing

The effectiveness of Bombardment attacks must be intelligently understood if worthwhile results are to be expected. The problem of bombing grows more serious at high speeds. For reasons of security and surprise, it is most desirable to come in over the targets at high speeds. While such speeds can be as high, theoretically, as 300 mile an hour diving speeds, effective bombing at such speeds is difficult. The blast effect of 1,100 and 2,000 lb. bombs is bad below 2,000 feet. Also, below that altitude accuracy bombing by the use of bomb sights is not practical. The records of the ceilings at Bolling Field during daylight hours from August 15, 1935, to October 31, 1935, both inclusive, showed that, out of 724 observations made, 13.3%, or 100, were below 2,000 feet.

While conditions of poor visibility, bad weather and darkness, are excellent for security and surprise, they preclude accurate bombing of targets of small dimensions, such as bridge piers, naval vessels, power plants, locks, etc. You cannot bomb what you cannot see. Flares

of one million candle power will illuminate approximately 4 square miles of terrain with an average intensity of moonlight. Approximately 1 square mile of terrain will be illuminated by flares of 350,000 candle power.

Alerted anti-aircraft batteries using their searchlights to locate raiding bombers assist bombers in locating their targets. Individual targets may not be identified in critical areas and successfully attacked at night, but the searchlight beams will assist enemy bombers greatly in locating those centers and in delivering area attacks upon them. On moonlight nights distinctive targets can be accurately bombed without flares. Night searching operations using flares preclude surprise and thoroughly alarm the enemy.

Radio, is the greatest single aid to long distance aerial navigation. Peace time methods of radio operating stations will be fraught with danger in war. They would serve as the best possible means for guiding and orienting enemy bombers. However, the value of radio for night and bad weather flying is too great not to expect a reasonably safe development of its use in war.

The radio compass has the advantage of simplicity over the radio range beam. It eliminates troubles with the split beam and saves time in accurately locating the station. Both radio compass and beam navigation should be used.

Airplane radio sets are most valuable for training. Their combat employment is prejudicial to security and surprise. If not carefully maintained, they are noisy and conversation is difficult. Voice communication is slow and difficult. The best principle of employment of radio is "Silence is Golden". Let the responsibility for breaking radio silence rest with the senior officer commanding the flight.

The value of aerial photography is too well known to need discussion.

Flight instruments have opened up the field of flying tremendously. Properly maintained, they give little trouble and make flying possible in all conditions of weather, day and night, except icing. Icing conditions are those that cause the condensation and freezing of water vapor on the airplane and propeller. If continued, the loss of efficiency through the formation of ice, will destroy the efficiency of the plane and force it down.

The reliability, power and efficiency of modern engines are remarkable. They are being improved by high octane fuels and injection feed carburetion. Diving speeds of Pursuit have, however, exceeded the capabilities of engines to keep up with them. The valve mechanisms, gear driven superchargers and crankshaft speeds cannot stand up under the high engine revolutions induced by long power

dives. Drop the P-26 over 8,000 in a power dive with any power on at all, and when it is pulled out of the dive, the engine is through; not a happy thought for a pilot in combat, especially over the lines. In such dives normal maximum engine revolutions of 2,200 r.p.m. easily run up to 3,600 r.p.m.

Variable pitch propellers have come to the rescue for short take-offs. Their use enable the engines to operate at higher r.p.m.'s on the take-off, which gives greater power and more rapid accelerations. Similarly the trailing edge flap, acting as an airbrake, makes it possible to land in short fields. The wheel brakes shorten the roll after landing. The new Bombers are calculated to take off and clear an obstacle 50 feet high at a distance of 2,000 feet from the starting point; the present Bomber will do so in 1,300 feet; the present Pursuit, in 500 feet. Low wings and retractable landing gears make possible safe emergency landings in marshes and in abnormally short fields. It does so by preventing turn-overs and by shortening the run after landing. The automatic pilot is what its name indicates. It flies a plane more accurately than the human pilot. It can fly in turns, climbs and glides. It solves the problem of blind, or instrument flying, and, if it can be successfully linked with an effective bomb sight, should materially improve the accuracy of bombing. It holds promise of solving the problem of blind landings, when linked up with radio.

PERSONNEL LIMITATIONS.

The capabilities of any good weapon exceed those of its combat crews. The value of the airplane as a military weapon depends upon the native ability, training and experience of its operating personnel. The present one year's course for Air Corps student fliers does two things. It eliminates unsuitable personnel (an average of 59% a year over a 6 year period), thereby reducing accidents and saving lives and equipment. Second, it delivers personnel to tactical units ready for unit training. Good unit commanders who concentrate upon this new material, can, with approximately sixty hours of profitable flying, develop them into excellent combat personnel. From then on, only experience, industry and their native ability can improve them. Raising the standards of student proficiency, coupled with vigorous elimination, could correct to a considerable degree, for the deficiencies of war training by insuring the retention of only the very best personnel. Unit commanders in war should be encouraged to reclassify their personnel and order those deficient to reclassification centers. Deficient personnel are not only combat liabilities but are incipient sources of failures of operations.

Good leaders have good units. When something is wrong with a command, look first for a deficiency in the commander. One unit will specialize on close formation flying neglecting combat training, night and instrument flying and field exercises. While close formation flying has its counterpart in the close order drills of ground troops, there is a positive skill and hazard involved that explains why pilots like it. It is precision flying conducive to combat discipline, to accuracy flying and to the development of mutual confidence and team play. There is no better method of instilling air discipline and of developing and gauging a pilot's flying ability, judgment and reliability than by close formation flying.

Unit commanders deficient in a particular phase of flying, are prone to curtail that character of flying in their units. This may be explained away by assuming that those commanders unconsciously avoid operations disparaging to their own abilities.

What is being developed in tactical units today in flying, is a fair indication of what could be expected in war.

Visual daylight navigation flights can be flown over operating distances to any place.

Visual moonlight navigation flights can be flown where identifiable land marks are available for accurate orientation. Starlight, but moonless night flights, can be made along rivers and large bodies of water. Muddy water is easier to see on such nights than clear water.

Flights on black nights can be made for short distances without requiring radio. However, the pilots will require identification ground lights to get back to their airdromes if radio is not used.

Celestial navigation flights can be made for considerable distances "over the top", that is, above the clouds.

Flights to destinations obscured in fog, can, at present, be made by a few individual pilots, not by units.

The only enemy objectives that can be located, observed or attacked at night are those that are large and that can be located with respect to visible, identifiable landmarks. (As previously noted, enemy searchlights may assist materially.)

Large close formations can be flown at night by using the plane's navigation lights, otherwise only by small formations. Loose tactical formations in column can be flown at night by the use of identifying airplane lights obscured from the ground.

Planes with navigation lights can be picked up by other planes at short distances. Planes without lights cannot be picked up short of collision distances.

The air is too big for the limitations of human vision. Weather conditions, distances, airplane camouflage, terrain and the speeds at which planes move, make it difficult for patrolling pilots to pick up other planes in the air. The noises

of their own planes. Drown out the noises of other planes.

Interception is unreliable without the assistance of ground intelligence nets.

Single seater Pursuit planes cannot afford protection to other classes of aviation on long combat flights. Their fuel supply is too limited for any combats of long duration in which they might become involved.

Formations of airplanes cannot deliver coordinated attacks of aimed concentrated machine-gun fire upon small targets. The danger of collision is too great.

The amount of flying to be expected of combat personnel can be estimated somewhat from commercial practice. The Department of Commerce limits transport pilot flying on any one day to 8 hours, any one week to 30 hours and any one month to 100 hours. The particular combat situations as well as maintenance factors will dictate the amount of flying required. The hard steady grind of flying falls upon Observation aviation. Attack and Bombardment fly more according to the employment of G.H.Q. Reserve forces. All long flights into enemy country are monotonous and a mental strain upon the crews, threatened as they may be with unexpected attacks from any quarter at any time. Pursuit flights are of relatively short duration, but full of action when things begin to happen.

REQUIREMENTS:

The tactics, technique and employment of the four classes of aviation have been covered at the Special and General Service Schools. The requirements for them are determined from their employment.

The initial requirements for military aviation are determined from the roles it plays as a member of military team in the theater of operations. The most intimate relationship between military aviation and the ground arms obtains in Observation. Observation aviation provides immediate returns to all ground units that employ them. The requirements for this class of aviation are limited only by the value of the service they can render to those units. There is a distinct need for them by all artillery units; by the commands and staffs of all divisions and higher units and by the commands and staffs of all small units operating independently or upon any important mission.

The importance of Observation aviation to the ground forces makes it equally important for the enemy to endeavor to curtail its employment. The most positive measure available to the enemy for this purpose is Pursuit aviation. As soon as enemy Pursuit aviation comes into the picture, the requirement is immediately set up for opposing friendly Pursuit. Hence, wherever Observation

aviation is contributing valuable service to the ground forces. Pursuit aviation is necessary to protect it against hostile Pursuit and to interfere as much as possible with the operations of hostile Observation aviation. The requirement, therefore, for Pursuit aviation operating as a member of the military team in the theater of operations, is initially determined by the activity of hostile Observation and of hostile Pursuit.

The role that Attack aviation can perform as a member of the military team in theaters of operations is determined by the direct contribution it can make to the success of the operations of the ground forces. Attack aviation is essentially a dispersing, delaying, harassing and denying force to be employed primarily against targets that cannot be reached by the weapons of other arms. The knowledge of the presence of Attack aviation will, undoubtedly, cause the enemy to dispose his forces in his rear areas and on the march so as to offer few opportunities for air raids. It is apparent, therefore, that the presence of Attack aviation as a member of the combat teams in the theaters of operations must be made known to the enemy, if his forces and installations are to be dispersed and his troop movements slowed down. Attack aviation, therefore, can contribute valuable service directly to the operations of the ground units by their presence in the theaters. The requirements for Attack aviation in support of the combat arms is determined first, by the need for maintaining an air threat against hostile rear areas, and second, by the number of profitable air targets that develop in special situations. The employment of Attack aviation brings up a second requirement for Pursuit in the theaters of operations. As in the case of hostile Observation aviation, Pursuit provides a positive means for defense against attack raids. If the strength in Pursuit aviation in the theaters is only sufficient to meet the requirements set by the defense of friendly and the attack of enemy Observation aviation, additional units of Pursuit will be required wherever the presence of hostile Attack aviation is known.

Occasional targets will exist in the rear areas of hostile forces for profitable attack by Bombardment aviation. To have a direct and contributory value to the operations of the other arms, the destruction of, or damage to these targets must reduce the strength and handicap the employment of the hostile forces in the theaters. The presence of Bombardment aviation as a member of the military teams in the theaters of operations will force the enemy to disperse his large installations. Lines of communication, rail, water and highway, vital to the front line troops, afford profitable targets, if attacked at times when

movements of supplies and troops over those lines are necessary to the success of hostile operations. The protection of such critical points will cause the diversion to rear areas of ground and air units and equipment for their air defense. Again, as in the case of Attack aviation, the presence of hostile Bombardment units in the theaters requires the services of friendly Pursuit units as a positive counter measure.

It is apparent, if military aviation is to accomplish its primary mission prescribed by the War Department, there are definite requirements for all four classes as members of the military teams in the theaters of operations.

The picture just drawn portrays a basis for establishing the requirements of military aviation in its primary mission of assisting the other arms in active combat. The only class of aviation that can be uniformly distributed through the other branches is Observation. Economy and mass do not warrant a similar distribution of the other classes except in active theaters. G.H.Q. controls their distribution, using them as a G.H.Q. force where they are of most value. Their mobility permits them to be shifted from theater to theater with great expedition.

The employment of Attack and Bombardment against enemy air forces, presupposes conditions that prevent enemy dispersion. Except when forced by conditions of terrain and weather, it cannot be assumed an enemy will be careless enough to dispose his air units so as to offer profitable targets for air attacks. However, bomb proofs and adequate anti-aircraft defense of airdromes may make air attacks more costly to the attackers than to the defenders.

A most valuable contribution that military aviation can make to the conduct of a war is successful attacks against those industries of the enemy vital to his war efforts. To be successful, such attacks should be made by Bombardment aviation in daylight. Daylight visibility is essential for the identification and the precision bombing of individual buildings, particularly if located in large cities. The speed and range of Bombardment aviation are such that they cannot be prevented from reaching their targets. Adequate defenses of vital areas may inflict severe losses. It is for the superior commander to decide whether the success of a mission warrants such losses.

Developments in range, size, performance and power of Bombardment aviation are creating a specialized Bombardment type that is outgrowing its possible economic employment in the theaters of operations as a member of the military team. The roles that super-bombers could perform can be performed more suitably and economically by smaller types. The range and power of these modern su-

per-bombers call for consideration of their employment against distant major targets beyond the concern of the theater commanders. Their employment, therefore, involves considerations dealing with the strategy of the war as a whole. War strategy is the concern of G.H.Q., hence, only G.H.Q. can determine the roles that super-bombers should play. In determining upon the employment of these super-bombers against distant enemy targets, consideration must be given to possible enemy reprisal operations, should the enemy be likewise equipped.

For the defense of the frontiers, which, in part, contemplates operations as land-based aviation against hostile fleets, economy precludes the development of a special force other than coast patrol units. Any threat of invasion across our frontiers will require the movement to the threatened areas of all members of the military team. Should these movements be too slow, aviation can initiate operations in advance of the arrival of ground troops. Basically, the requirements for special coast patrol observation units will depend upon the naval situation. There is a requirement for coast patrol Observation aviation as a reconnaissance force to cover the gap between our navy and the shore. In addition to the units operating with the other arms, a strategic force of super-bombers can perform a most valuable role in such situations.

To assist in the defense of critical areas, only one class of military aviation can be of value, i.e., Pursuit. The requirement for Pursuit for this purpose will depend upon the number of critical areas vulnerable to attack by hostile Bombardment. Important in this connection is an appreciation of the influence exerted by the threat of Bombardment aviation to force nations to withhold from the theaters of operations those units and armament required for the air defense of critical areas.

TRENDS OF MILITARY AVIATION:
Has the development of military aviation reached a stage of stability? It is my opinion it has for the accomplishment of two of its missions; one assisting the other arms in combat, the other assisting in the defense of critical areas. What it can do as an independently operating G.H.Q. force, remains to be developed. There are many schools of thought, but as yet no experience. What super-bombers can do to spread destruction on the high seas and deep into the interior of enemy territory is an open question.

It remains for the commands and staffs of all units to learn how to employ their air components. Staffs include air officers to assist in air matters. Observation aviation can provide a commander with positive, not negative, information of enemy dispositions and facilities bearing on his situation. It is every commander's responsibility to know and

decide what damage his aviation can inflict, to what extent air attacks may assist his other arms, and to issue combat orders that will insure the economical employment of his air units as members of his military team in a way that will contribute positively to the success of his mission.

What are the present trends of military aviation? The trends are indicated by the trends of airplane development. Airplanes are emphasizing speed, size and power at the expense of utility. So much attention is being paid to speed, range and combat load that the military requirements of utility embodying low costs, maneuverability and small size are being lost sight of. From the viewpoint of their primary mission of assisting the other arms in combat, the trend towards larger and heavier planes is diverting them from that mission. If combat aviation has the power we claim for it for military operations, it must be utilized in all profitable fields. Those fields cannot be restricted to operations from rear areas against distant targets. To contribute its share as a valuable member of the military team in combat, it must be physically associated with the other arms. That means three distinct types of airplanes; one short range for intimate employment with the other arms; another long range for employment as a pure G.H.Q. Reserve force against more distant targets, and a third super-class for employment against enemy navies and distant crit-

ical areas.

CONCLUSION.

The purpose of this paper is to point out those practical considerations of military aviation that should be appreciated by all who are to have a hand in its war employment. If, when confronted with problems concerning military aviation, we will visualize the problem as one dealing with an organization of vehicles that use the atmosphere as its roadbed, we will have dispelled most of the mystery of aviation. If we will continue to apply the analogy to other forms of transportation and associate an airplane's combat load, speed, range, maneuverability, horsepower and structural strength with their counterparts in other vehicles, we will have a sound conception of the comparative performance powers and limitations of the several classes of military aviation. With this conception as a point of departure, we are ready to understand the value of the airplane as a military weapon and to make decisions on the utility and employment of military aviation.

Finally, I would like to leave this thought with you.

The airplane is a valuable, though expensive weapon of war that must be conserved in its employment to roles that contribute positively to the success of the operations. It is our responsibility to know just how it can, and just how it cannot be used as a means of waging war; both independently as a distinct arm, and dependently as a subordinate member of the military team.

DEATH OF FLYING CADET ATKINSON By the Kelly Field Correspondent

Flying Cadet Robert S. Atkinson died at the Station Hospital, Fort Sam Houston, Texas, at 5:15 p.m., January 21st, as a result of injuries received in an airplane accident about 8:45 a.m. the same day. He was flying solo in an A-3B airplane going out on an attack mission. He was taking off individually from Kelly Field when his right wings struck the top of the water tower located on the north edge of Kelly Field. He lost a portion of his right wing, including aileron, and continued for some 300 yards before he struck the ground. The airplane remained right-side up and did not burn, although it was completely demolished.

Cadet Atkinson was removed to the Station Hospital at Kelly Field for emergency treatment and then rushed to the Station Hospital at Fort Sam Houston.

It is believed that on the take-off the water tower was dead ahead of him and in the blind spot caused by the engine cowling while the airplane was in a climbing attitude. It is not known whether he saw the tower or not, but it was observed that his plane had begun a

left-hand turn shortly before striking the tower.

Cadet Atkinson was born in Tonopah, Nevada, July 26, 1910. He was a member of the Reserve Officers' Training Corps during 1927 and 1930. He attended Stanford University from 1929 to 1932, when he was graduated with a BA degree. He then took a post-graduate course at that university during 1933 and 1934. After completing the primary and basic courses at Randolph Field, he reported to the Advanced Flying School on October 12, 1935. His parents, Mr. and Mrs. H.H. Atkinson, reside at Reno, Nevada. His father accompanied the body from San Antonio to Reno for burial.

Cadet Atkinson was considered one of the outstanding cadets in the class, not only in his flying but in his academic and military activities as well. The entire school experienced the deepest regret over the loss of one of the most promising students in the class, and extends to his family and friends their sincere sympathy.

FLYING CADET COMPETITIVE DRILL

By Lieut. Jack W. Hickman, C.E.

Most of the readers will know, and a good many well remember, that all is not banks and turns at the Primary Flying School. And a goodly portion of the time allotted to "ground school" is spent with a caliber .30, Model 1903, Springfield rifle in hand or on shoulder:

As a matter of fact, the fledgling is introduced to the rifle before he meets the stick and the rudder. Whether the acquaintance be pleasant or distasteful, the friendship ripens during the entire period spent at Randolph Field. Oflate, some of the erring cadets have chosen - or have been chosen - to spend their otherwise free afternoons with their comrades, the models 1903. This period of communion has been spent pacing the ramp, Springfield on shoulder, one hour for each excess demerit received during the previous week.

But such familiarity has not gone for naught. This exercise, coupled with constant drill which had advanced from the school of the soldier thru squad drill, platoon and company drill, and even battalion drill (not possible before Randolph Field was completed due to dearth of numbers), accounts for the excellent showing made Saturday morning, January 18th, at a competitive drill followed by a review and inspection.

Though lacking some of the fanfare and glittering brass which accompanies a parade at West Point, this exhibition by no means lacked color. Freezing weather notwithstanding, the spectators-

composed largely of Southern beauties together with a few reporters and photographers from local newspapers - were treated to a good show. Accompanied by the drum and bugle corps from the 15th Field Artillery, Fort Sam Houston, the embryo pilots went through their maneuvers before Head Judge Lieutenant Arthur Meehan, erstwhile Pursuit pilot and football coach, and his assistants, recent West Point graduates also assigned to the flying school.

A nip and tuck battle ensued. Several times rifles almost, but not quite, slipped through benumbed fingers, but the drill was conducted with such spirit and precision that judging was rendered extremely difficult. The contest still undecided, the battalion passed in review before Colonel Harms, Commandant of the School, and Captain Weikert, Commandant of the Flying Cadets, and then lined up for inspection. And it was only after this final test that the victor could be discerned. Out of a possible 300 points, "A" Company - the "flankers" - had garnered 235 to the 232 points "B" Company - the "runts" - had received.

And so "A" Company became the winner of - the silver loving cup? A huge bronze statue? Oh, no! But the prize was probably far more appreciated by the victors than would have been the most beautiful loving cup or statue, for they were excused from reveille and inspection on the following Saturday morning!

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THE 27TH SQUADRON'S CRYING CLUB

By the News Letter Correspondent

The 27th Pursuit Squadron, Selfridge Field, Mich., has formed a Crying Club! It seems to be made up of expatriates of the Sunny South and Far West, - from lands where sub-zero weather is something in a book. However, the "two flying suit, face mask climate" here is not without its novelties. At no other Air Corps post can the gentle art of ice fishing be learned so easily. It is done like this: Get a pocket compass, because it is sure to snow every time you go outside. Follow a northeast course out over the lake till you find Captain Norme Frost's shanty, or you end up in Canada. You can tell when you reach Canada - the policemen are so polite. To return to the shanty, if it is locked, break the latch. It will give Captain Frost something to do. Once inside the shack, you build a fire on the ice. Then you spend half an hour cutting a hole through to the water. You cut a small hole, so you can see the fish but they can't see you.

How it's done? Maybe you put up a "One-Way Street" sign. Then when the fish come up to warm their hands at your fire, you hook the largest one in the lake. In fact, he is three inches larger than the hole. By this time the fire is dying out, so you chop up various parts of the shanty, the seat going first, just to add to the general comfort and hominess. That done, you hack the hole in the ice large enough to pull in your fish. With the last whack you cut your line. But the fish sticks around, because by then the fire has melted through the ice and you fall in. So the fish has you for dinner.

But some members of the Crying Club would rather go ice skating. It is a game to see who can slide the farthest in the most ridiculous position. Cadet Allan Sewart made it all the way across the new rink on the back of his head.

Most of the club members confine their winter sports to volley ball in the hangar. There being no adequate gymnasium

on the field, the game is played in the wide open spaces between our few air-planes.

When the PB-2's are received, the "Crying Club" will no longer be able to pursue its various activities. But no

objections are anticipated. The Club will be abandoned readily and gladly. Just now the members are enjoying a few weeks' recess to go to Barksdale Field, La., for gunnery and bombing.

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WORLD WAR "ACE" PASSES ON

Major James A. Meissner, Air Reserve, an officer with a distinguished record during the World War, died at his home in Birmingham, Ala., January 15, 1935. He was stricken with pneumonia on January 10th, and was laid to rest at Macon, Ga., on January 19th. The 106th Observation Squadron, Alabama National Guard, sent a flight of honor. Among the mourners were delegations from the Reserve Officers of the Fourth Corps Area. Flowers and messages were sent by notable flyers from all over the world.

Major Meissner held the unofficial title of "Ace," being credited with the destruction in aerial combat during the War of seven enemy airplanes and one balloon, and being awarded the Distinguished Service Cross with Oak Leaf Cluster for heroism in action. He was born in Londonderry, Nova Scotia, Canada, July 30, 1896. He was educated in the public schools and high school of Brooklyn, New York.

Prior to enlisting in the Aviation Section, Signal Corps, shortly after America entered into the World War, he attended Cornell University for three years, pursuing a course in mechanical engineering. He completed the full course following his discharge from the Army, and received the degree of Mechanical Engineer.

Following his enlistment in the Aviation Section, Signal Corps, Major Meissner took his ground school training at the School of Military Aeronautics, Cornell University, May 28 to July 28, 1917. He was then ordered to duty overseas and received his flying training at the Aviation Instruction Centers at Tours and Issoudun, France, and his aerial gunnery training at Cazaux, France, following which he was assigned to duty with the 94th Pursuit Squadron, March 8, 1918. During his service at the front he was stationed in the Toul Sector, and later participated in the Chateau Thierry, St. Mihiel and Argonne offensives.

His work as a pilot was of such an outstanding character that on July 24, 1918, he was assigned as Commanding Officer of the 147th Aero Squadron, and he served with this organization until November 14, 1918.

He received his commission as a 1st lieutenant, December 12, 1917, and was promoted to Captain, October 3, 1918. By virtue of his distinguished service, he was given the rating of Junior Military Aviator on October 4, 1918, which

carried with it promotion to the grade of Major. The acts of heroism which resulted in his being awarded the Distinguished Service Cross and Oak Leaf Cluster are enumerated, as follows:

1. On May 2, 1918, at 12:03 o'clock, this pilot attacked three enemy planes at an altitude of 4800 meters over the Foret de la Raape. After a short fight he brought down one of the enemy planes in flames. During the combat the entering edge and the covering of the upper wings of this pilot's plane were torn away. In the midst of an intense enemy barrage, Major Meissner, by exercising cool judgment, succeeded in regaining our lines and landing near Laferme de Nauceville. This combat and result was officially confirmed by the French military authorities on May 3, 1918.

2. On May 30, 1918, at 8:40 o'clock, this pilot encountered two enemy monoplace planes at an altitude of 4500 meters above Jaulnoy, and after a sharp engagement, succeeded in bringing one down in flames, and forced the other to retire. This combat and result was officially confirmed by the French military authorities on May 30, 1918.

3. On June 5, 1918, at 10:00 o'clock, while on voluntary patrol with Lieutenant Campbell, two enemy planes were sighted at 5000 meters over Eply. Major Meissner succeeded in forcing one to earth just beyond the German front line trenches, between Eply and Mailly. This plane was subsequently destroyed by American artillery fire. This combat and result was officially confirmed by the American military authorities on June 5, 1918.

4. On June 13, 1918, this pilot, while on voluntary patrol, composed of himself and Lieuts. Taylor and Winslow, encountered an enemy biplace plane over St. Mihiel at an altitude of 5000 meters, which they pursued for about 15 kilometers within the German lines and succeeded in shooting it down in flames over the region of Thiscourt at 8:15 o'clock. This combat and result was officially confirmed by the French military authorities on June 13, 1918.

Major Meissner was also awarded the Croix de Guerre with two palms for his outstanding work as a war pilot.

Upon his return to the United States he served for a brief period with the Air Service Depot at Garden City, L.I., New York, and in the Office of the Director of Military Aeronautics, Washington, D.C. He was honorably discharged from the service on March 25, 1919, and on April 6th of that year was appointed a Major in the Air

(Continued on page 19).

TRAINING ACTIVITIES AT WHEELER FIELD

The year just closed has been one of particularly interesting flight activities at Wheeler Field. For the first time in many years, there has been available sufficient ammunition and bombs to secure a standard of group flying training commensurate with the status of readiness required for air units in the Hawaiian Department. It was also a great boon to training to have available sufficient gas and oil for all required flying training. A judicious economy was exercised throughout the year, but no activity essential to training had to be eliminated due to shortage of equipment. As a result, the 18th Pursuit Group reached a higher standard of training than has ever before been possible.

In the first six months of the current fiscal year the Group has flown a total of 8,098:25 hours. All Air Corps officers who have been on duty with the Group for the entire period since June 30th have accomplished more than 150 hours of pilot time, and all these officers have completed the entire War Department Pilot Proficiency requirements in the first six months of the fiscal year.

Beginning in September, a Group flight of the entire Group has been made to the other islands of the Hawaiian Group once each month. These flights have permitted the majority of the officers in the Group to land at all emergency landing fields from Kauai to Hawaii, inclusive, and have presented an excellent opportunity to get first hand information on aviation operating conditions on all of the islands of the group. These flights also served a useful purpose as a break in the routine flying training over the island of Oahu, and have formed a very acceptable substitute for the popular cross-country flights made in the States which are impractical here. Incident to the November Group flight to Hawaii, all officers on duty with the Group were afforded an opportunity of witnessing the spectacular eruption of the Mauna Loa volcano, which occurred on November 21st while the Group was on that island on a routine training flight. The inter-island flights have permitted all officers of the Group to spend a few pleasant days at the Military Rest Camp at Kilauea.

Pursuit flights to the ceiling of the P-12 airplanes have been conducted by the Pursuit squadrons of this Group on an average of at least once each month this fiscal year. Liquid oxygen has been used and has been entirely satisfactory. The loss of liquid oxygen which occurs in transferring the liquid oxygen from the containers in which it is delivered by the manufacturer to the

bottles in the airplanes is still excessive, due to the rapid evaporation incident to a uniformly high temperature in Hawaii.

All pilots present for duty with the Group fired the record gunnery and bombing courses and made average scores considerably higher than those usually obtained in the States. Firing conditions on Oahu are better than are encountered at most mainland Air Corps stations and result in higher gunnery scores during practice and record firing.

The Commanding General of the Hawaiian Department issued orders requiring that all enlisted personnel in the Department should become proficient in the use of small arms. Department orders announced that the Air Corps in Hawaii was armed with the pistol and machine gun. Every enlisted man in the 18th Pursuit Group was armed with the pistol and fired the pistol record course. The amount of pistol ammunition available for practice firing was extremely limited, so that the scores obtained were not entirely satisfactory. However, every man gained considerable experience and would give a reasonably good account of himself with a pistol in any emergency.

In addition to the pistol firing, every enlisted man in the 18th Group fired a special course for record with the ground machine gun. This course was designed to qualify all enlisted men in the defense of the outlying airdromes on which the Group might be stationed and to give the personnel experience in the type of firing that would be required as a defense against raids or sabotage. For this work, instructors were procured from the machine gun companies of the Hawaiian Division and a reasonable standard of proficiency was secured.

Each squadron in the Group trained selected noncommissioned officers in firing anti-aircraft machine guns against hydrogen-filled balloons and towed sleeves. This training was extremely valuable as well as thoroughly enjoyable. Sufficient competition was introduced by organizations to produce the best possible results.

Combat firing exercises for the pilots of the Group were quite diversified and advanced by progressive steps from aerial firing at regulation ground targets until the personnel was able to secure very satisfactory results against shipping. Airplanes to full scale were cut out of paper and pasted to target cloth. These were placed in formation on the ground and used as targets for formation firing until the units were trained to secure good results while firing in formation. Floating targets about the size of the regulation targets were next set adrift and firing conducted against them. As proficiency was secured against these

moving water-borne targets, more realistic targets were introduced by constructing a framework to simulate the vital part of a beagle boat, less ends. The results of element, flight and squadron firing in daylight against such targets was determined. Sufficient exercises of this nature were fired to determine the best angle of approach, most effective ranges, etc. Salvage steel drums were next used as floating targets. With very little practice a pilot was soon able to sink a steel drum with .30 caliber firing in less than one minute.

Naturally, .30 caliber firing against towed targets was conducted concurrent with the exercises above described, but this type of firing is not considered satisfactory training, because there is no way to determine where the ammunition is going other than the direct hits secured on the target. Even at medium altitudes, results of combat firing against towed sleeves proved that this method of training is a waste of ammunition. When the firing exercises at towed sleeves were conducted in accordance with the requirements for record firing it was practical to secure a reasonable percentage of hits, but when the conditions were changed to simulate a target such as would be presented in combat, very few hits could be made. The results against towed sleeves were even less satisfactory at 15,000 and 20,000 feet. The firing done at high altitudes against towed sleeves while using oxygen apparatus was not all satisfactory, and it is not believed that the difficulty was due to lack of training or equipment. Plans contemplate additional investigation and combat exercises at high altitudes as soon as combat ammunition becomes available for the current calendar year.

Thirty caliber combat firing was conducted by all officers of the Group against hydrogen-filled balloons, about 24-inches in diameter. These balloons were released from the ground at three-minute intervals. Each pilot was designated to destroy either five or ten of the hydrogen balloons during each combat exercise of this type. No balloons were used below 1000 feet altitude. This type of gunnery was found to be valuable as well as very interesting to the pilots. After the first exercise, very satisfactory results were obtained.

Night firing was conducted against floating targets both adrift and at anchor. These targets were constructed of a light frame covered with target cloth -- the whole being mounted on suitable floats. The size of these targets was 6'x 8' by 4' high. The first combat exercise involved their attack by the illumination of parachute flares. The oscillation of the flares interferes with accurate gunnery but by utilizing flares in pairs and keeping the target

continuously illuminated, it is possible to secure very good results by night firing from forward guns. A single Pursuit squadron of eighteen planes can satisfactorily illuminate an aerial target about one hour with parachute flares.

Night firing problems were also conducted, utilizing the illumination of beach defense searchlights. For this type of combat exercise, the same target described above was used, and the illumination was provided by crossing the beams of two shore-based searchlights on the target. The result of the firing with this type of illumination was better than with parachute flares but not enough to compensate for the difficulties incident to the coordination of the activities of the two branches of the service involved.

Night firing combat exercises were also fired, utilizing only the moonlight on a bright moonlight night. These exercises, which were witnessed by the Department Commander, were very interesting and the result obtained very satisfactory.

Incident to the firing of combat exercises against floating targets, it was definitely determined that, given the same number of rounds of ammunition, more hits could be secured on a small target in a shorter period of time with P-12 Pursuit type airplanes, using two forward fixed machine guns, than could be secured with the A-3 type Attack planes with four fixed machine guns. This rather surprising result is attributable to the fact that the convergence of the fire of the fixed guns of the Attack airplanes on a 6'x 8'x 4' target (the size of a vital area of a small boat) results in accurate firing at only one pre-determined range.

The Group was particularly fortunate in being able to secure a considerable number of obsolete, salvaged trucks, which had been surveyed, for use as targets for two combat exercises. These were assumed to be protected by .30 caliber machine guns, effective to 1000 feet altitude. In the combat exercises, the Group employed 25-pound fragmentation bombs, which proved to be very effective against targets of this nature.

During the last month of the calendar year, the Group was able to procure a fifty-foot steel boat, of about eighteen foot beam, which had gone ashore on a reef. The deck and super-structure were all steel. This target was attacked from long range, using .50 caliber machine gun fire from P-12 type airplanes. This type of ammunition was very satisfactory for a steel boat. Numerous rounds penetrated the plates on one side, passed through the ship and out through the plates on the other side. The decks, side area above water, deck house, funnel, and all superstructure was literally full of holes at the termination of the exercise. Plans for combat firing

for 1936 contemplate securing salvage quartermaster small boats, to be attacked while adrift by fragmentation bombs and .30 and .50 caliber firing, to determine the effectiveness of each type of ammunition for sinking targets of this general nature.

Another phase of the training work of the Group that may be of interest to other units is that incident to night operations. Only the Attack airplanes in this group are equipped with wing landing lights, and this equipment did not become available for all aircraft until nearly the end of the calendar year. The regular flood lighting system at Wheeler Field is very deficient. Steps have been taken to correct this condition, but the training of the Group was in no way delayed waiting for correction of the permanent field lighting. Each squadron made landings by individual ships and by elements by the use of the standard field lighting sets. This equipment is reasonably satisfactory from a technical view point, but the time required to set it up and put it in operation is too great. Each squadron also made landings with the field lighting system at Haleiva emergency field, which is a long, narrow, sandy field bounded on one side by pine trees and on the other by the sea.

All squadrons in the Group also made landings at Wheeler Field and at a small emergency field, using for illumination No. 2 tin cans fixed up as smudge lights. This equipment consisted of a standard No. 2 tin can in which a salvaged spiral puttee was placed on edge as a wick.

The puttee was saturated in a mixture of oil and gas. Such smudge pots will burn satisfactorily for three or four hours and provide sufficient illumination for outlining the field and for landing thereon. Altogether over 1000 landings were made by the group with this system without an accident of any kind. It is considered very satisfactory for field operations and superior to the standard field lighting system.

During the year the 18th Pursuit Group also participated in the joint Army and Navy Maneuvers, operating both in conjunction with and against naval craft. It is believed that the opportunity for Air Corps training afforded by service in Hawaii is unexcelled at any place in the service. Immediately adjacent to Wheeler Field is the Hawaiian Division, consisting of two Infantry and an Artillery brigade, with the usual special troops. Within ten miles of Wheeler Field are anti-aircraft units, chemical troops, heavy seacoast defenses, a large naval air station, one of the world's most important naval stations, and sufficient shipping activities to permit simulated operations against sea craft at any time that training of this nature is desired. Every opportunity is taken to exploit these facilities to the utmost and, while there are still innumerable training possibilities, the current training scheduled should result in producing a very efficient, well-trained Group capable of giving a good account of itself with the aircraft with which it is equipped.

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Death of Major Meissner (Continued from page 16)

Reserve. Since the war he has made his home in Birmingham, Alabama, where he was assistant superintendent of the Tennessee Coal, Iron & Railroad Co. In spite of the strenuous duties in connection with his business, he always found time to take part in air activities as a member of the National Guard and Reserve Air organizations. His mature experience, keen judgment, natural leadership, ability and unselfish desire to serve his country played a big part in building up and maintaining a high state of efficiency in the Air Units with which he was associated. At the time of his death he was commanding officer of the 312th Observation Squadron, Organized Reserves, and Fourth Corps Area Representative of the Air Reserve Association.

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CHIEF OF AIR CORPS VISITS KELLY FIELD

On Thursday, February 6th, Kelly Field welcomed Major-General Oscar Westover to

the field on his first official visit since being appointed Chief of the Air Corps. "We regret," says the Kelly Field Correspondent, "that he was unable to remain at this post longer than that day."

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FLYING TRAINING AT ADVANCED FLYING SCHOOL

Flying training at the Air Corps Advanced Flying School, Kelly Field, Texas, for the present class of students is almost completed. The week beginning Monday, February 10th, is the last for this class, since it graduates on Saturday, February 15th. In addition to the regular activities, the following events are scheduled: Tuesday, Feb. 11th, a demonstration by a war-strength Infantry battalion at Fort Sam Houston for the graduating students; Wednesday, Feb. 12th, a lecture on the GHC Air Force by Brig.-General Gerald C. Brant, commanding the Third Wing, and Saturday, February 15th, the long waited for event - graduation.

BOMBING EXPERIMENT IN CONNECTION WITH
OF MAUNA LOA, HAWAII

The story of the Army Air Corps bombing of the Mauna Loa lava flow on the Island of Hawaii writes still another page in the annals of the Air Corps accomplishments in the promotion of peace-time objectives. The bombing operations were under the command of Lt.-Colonel Asa N. Duncan, Air Corps, commanding the 5th Composite Group, Luke Field, Oahu, T.H., who employed the 23rd and 72nd Bombardment squadrons and a detachment from the 50th Observation squadron and the 4th Observation squadron.

Ten Bombardment, two Amphibians and two Observation airplanes made the trip from Oahu to the Island of Hawaii on December 26, 1935, and established headquarters at the Hilo Airport, Hilo, Hawaii. As soon as one of the Amphibian airplanes could be refused, it took off for Mauna Loa with Dr. T.A. Jagger, Volcanologist, U.S. National Park Service, and the pilots of the Bombardment airplanes as passengers, and flew over the lava flow to enable Dr. Jagger to point out to the pilots the exact location of the targets to be bombed.

These targets were located - the first, at the source of the lava flow on the northeast slope of Mauna Loa; the second, at a spot about one mile below the source, where the lava flow entered two tunnels and flowed underground for about 200 yards. Upon the completion of this spotting flight, preparations were immediately begun for the actual bombing the next morning. Demolition bombs (600-1b.) had been transported to Hilo on the USAT "General Royal T. Frank, together with two Ordnance Department men to fuse same. Prior to this, on December 24th, Colonel Delos C. Emmons, commanding the 18th Composite Wing, had made an examination of the lava flow, in company with Dr. Jagger; Mr. Wingate, Superintendent of the Hawaiian National Parks; Major Gilchrist, Commanding Officer, Kilauea Military Camp, and Lieut.-Colonel Virgil L. Peterson, Corps of Engineers.

At this time the decision was reached to try the effect of heavy demolition bombs as a means of stopping the flow of lava toward the headwaters of the Wailuku River and the City of Hilo itself. Colonel Emmons reported that there was considerable alarm in the City of Hilo, and public opinion was bringing every pressure to bear to have something attempted in an endeavor to avert the great danger which threatened the city.

The following is a statement of Dr. Jagger as to the situation with reference to the lava flow, up to the time when the bombing experiment was made:

"The lava of Mauna Loa reached the critical stage of flowing under glassy crust, at the front, December 9 at 8:00 p.m. This liquid increased its spreading out and taking under a shell of solidified lava, below Humuhua station

December 18.

On the solstice, December 20, there was a sudden advance. This burned grass and forest. The lava lake in the divide suddenly drained eastward, toward Hilo, December 22, at 8 a.m. From a slow rate of one-quarter mile per day northward into the saddle, the glowing flood changed to one mile per day eastward.

This rate of one mile per day was maintained for six days, on a down-grade of 157 feet to the mile, in pasture and forest. It reached a point 13 miles from the terminus of the Kuumana automobile road in Hilo, with the steepness of slope steadily increasing. On an even lava and gas pressure maintained at the source the front would have reached a place near this road on January 9, traveling at the same rate."

Colonel Duncan completed his preparations for the bombing by the evening of December 26th, and everything was in readiness for an early take-off the next morning. The first Bomber took off at 8:45 a.m., December 27th, followed at 20-minute intervals by four other Bombing airplanes. Each plane was loaded with two 600-pound demolition bombs, fused with 1/10 second delay fuse, and with two 300-pound practice bombs to be used as sighting sights. The airplanes reached an altitude of 12,000 feet above sea level, or approximately 3500 feet above the targets to be bombed. The bombs were dropped successfully. Upon completing the first mission, the planes returned to Hilo and were re-loaded, as before, and completed a second mission, dropping ten more bombs at the same two targets.

Colonel Duncan states that he personally made an airplane reconnaissance over the targets immediately after the bombing, and the following is quoted from his report:

"It was found that five bombs hit the stream itself, three in the flowing lava of the first target and two directly above the tube of molten lava of the second target. One of these caved in the tunnel. Three other craters were within five feet of the stream, the explosion throwing ashes into the red lava. Two others were within 20 feet of the target. From the sensing of the pilots, seven other bombs fell within fifty feet of the stream."

Colonel Duncan reported Dr. Jagger stated to him that the execution of the bombing mission was superb; that the bombs had been placed exactly where they should have been; and that this aerial bombing of a lava flow was one of the greatest geological experiences in the history of science, the experiment being a complete success.

Dr. Jagger himself stated as follows:
"On the sixth day, December 27, 9 a.m. to 2 p.m., your officers of the Air Corps, under Colonel Duncan, bombed the source tunnels and released great quantities of lava and gas, and I saw the glowing liquid flung high. This produced a sluiceway of

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50
72

rapid liquid fiery lava at the source itself. This was verified by four observers from the air December 28th at 11 a.m., one of them an experienced pilot for the same area. No such liquid stream was there at 1 p.m., December 26th, when I flew over the course with your officers, to point out the target. This upper flood made clinker lava in new places on the upper slopes. The Hiloflow immediately slowed down, robbed of its steady pressure, but was very bright that night along its course with overflows, occasioned by the settling of the crusts on liquid lava below, in laked area.

The rate of flow of liquid advance at the fronts, measured on the ground by myself and others under my direction, in detail was as follows:

- December 26, 11 a.m., before the bombing, 800 feet per hour.
- December 27, 4 p.m., just after the bombing, 150 feet per hour.
- December 28, 11 a.m., day after bombing, 40 feet per hour.
- December 28, 11 p.m., 33 hours after bombing, front stationary.

The remainder of the activity of frontal flowing was a spilling of remnant lava in the streamways, partly over the sides of the lava fields, partly lengthening the front about a quarter mile. From December 29 to January 2, 8 a.m., each day, the gushing advances of the stiff clinker lava per day were roughly 500, 200, 700 and 200 and 100 feet.

The fume at the summit rift is nearly finished, that at the flow source has stopped, and only three or four molten places in the clinker stream across Puu Oo ranch remain. The damage is relatively small in comparison with what might have been.

I flew over the target December 31, observed 10 or 12 holes which appear to be bomb craters, and from some of them streams had gushed out, now silvery andropy with congealed skin. The hits were remarkably accurate, and exactly where I wanted them distributed."

The Honolulu ADVERTISER, on January 3rd, stated as follows:

"Madame Pele's latest tantrum of six weeks, which threatened to reach the city of Hilo and which for some time has been considered a distinct menace to this city's water supply, was definitely ended today."

Dr. Jaggar's explanation of the situation which existed relative to the eruption of Mauna Loa at the time when the bombing was accomplished was as follows:

"A lava slag tunnel-and-vent system is in stabilized equilibrium. The physical chemistry of glassy basaltic molt containing gases in solution, particularly hydrogen, involves nice adjustments of pressure.

Any flow from a high source, after streaming so long a time as to threaten a place as distant as Hilo, would be in balanced adjustment, and the bombing would destroy that adjustment and stop the flow. This is what you have proved by your magnificent experiment."

Dr. Jaggar believed that bombing with high explosive bombs would be effective by disturbing the equilibrium of the gas pressure and lava resistance. Dr. Jaggar stated:

"Therefore, the Army, on one day's work has stopped a lava flow, which might have continued indefinitely, and have caused incalculable damage to forest, water resources and city.

What is more important, the work of the bombing squadrons has demonstrated for the first time in history a new method in economic volcanology. And lastly what to me is most important of all, we have shown that cooperation between government departments can add much to the world's store of pure science and humanitarian engineering.

I thank Colonel Emmons and the officers and men of the Air Corps from the bottom of my heart for their achievement. And I thank the War Department on behalf of the Hawaiian Volcano Research Association, of the City of Hilo, and of the County of Hawaii."

Dr. Jaggar believes that the experience gained by this bombing experiment will go far to enable plans to be made to cope with future eruptions of Mauna Loa, which, according to past experience, breaks bounds every four years. Colonel Emmons states that the bombing experience was splendid tactical training for the 18th Composite Wing. Colonel Horace F. Sykes, Adjutant General of the Hawaiian Department, stated the favorable reaction of the community of Hilo to the part played by the Army in stopping the threat to the water supply of Hilo entirely justified the Army's participation.

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DETAILS TO ARMY INDUSTRIAL COLLEGE

Special Orders of the War Department, recently issued, announced the designation of the following-named Air Corps officers as students at the Army Industrial College for the 1936-1937 course:

Major Harrison W. Flickinger, Fairfield Air Depot, Patterson Field, Ohio.

Captain Alonzo M. Drake, Langley Field, Virginia.

Captains Edmund C. Langnead, Alfred J. Lyon, Richard H. Magee and Max F. Schneider, students at the Air Corps Tactical School, Maxwell Field, Ala.

Major Myron M. Wood (Captain), Randolph Field, Texas, on duty with 67th Service Squadron, who is relieved from temporary rank on August 12, 1936. The above-named officers will report to the director of the Industrial College between August 15 and 21, 1936.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Washington, D.C.: Lt.-Col. Charles T. Phillips (Major), 16th Pursuit Group, for duty as member of War Department General Staff. Relieved from temporary rank upon date of departure from Panama; Captain George V. McPike, student at Air Corps Tactical School, Maxwell Field, Ala., for duty in Office of Assistant Secretary of War, July 1, 1936; Lieut.-Colonel Harrison H.C. Richards, Kelly Field, Texas, for duty in Office of the Chief of the Air Corps.

To Randolph Field, Texas: Major Edwin B. Lyon, General Staff, Washington, for duty as Assistant Commandant, Primary Flying School; Major Warner B. Gates from Panama.

To Kelly Field, Texas: Captain August W. Kissner (1st Lt.) 4th Composite Group. Relieved from temporary rank upon date of departure from Philippines.

To Chanute Field, Ill.: Major Ray H. Clark, 19th Pursuit Squadron. Relieved from temporary rank upon date of departure from Hawaii.

To March Field, Calif.: 1st Lieut. Richard C. Hutchinson from Hawaii.

To Bolling Field, D.C.: Captain Harold R. Rivers, from Philippines.

To Mitchel Field, N.Y.: Major James W. Hammond (Capt.) 56th Service Squadron. Relieved from temporary rank upon date of departure from Philippines.

To Langley Field, Va.: Captain Ward J. Davies (1st Lt.) 6th Composite Group. Relieved from temporary rank upon departure from Panama.

To Fort Benning, Ga.: 1st Lt. Thomas D. Ferguson, from Hawaii, for duty with Flight B, 16th Observation Squadron.

To San Diego, Calif.: 1st Lieut. Walter W. Cross, Station Complement, Moffett Field, Calif. for duty with Organized Reserves, 9th Corps Area.

To Fort George H. Wright, Wash.: 2nd Lieut. George B. O'Connor, Air Corps Training Center, Randolph Field, for duty with 4th Infantry.

To Philippines: 1st Lieut. Harold L. Mace, Flight B, 16th Obs. Squadron, Fort Benning, Ga.; 1st Lieuts. Thomas R. Lynch and Samuel W. Van Meter, from Randolph Field, Texas.

TRANSFER: Captain Richard K. LeBrou to Finance Dept., January 29, 1936.

Major Arthur B. McDaniel and Captain Robert G. Breene, Air Corps, now on duty as students at the Command and General Staff School, Fort Leavenworth, Kansas, are under orders to report to the Commandant of that School for duty as instructors, effective August 1, 1936.

DETAILS TO THE AIR CORPS ENGINEERING SCHOOL

Ten Air Corps officers are under orders to proceed to Wright Field, Dayton, Ohio, in August, 1936, and report to the Commandant of the Air Corps Engineering School for duty as students in the 1936-1937 course, viz:

Captain Eugene H. Beebe (1st Lieut.), March Field, Calif.

Captain Thomas B. McDonald (1st Lieut.), Barksdale Field, La.

Captain Donald J. Keirn (1st Lt.) and Captain John G. Moore, Hamilton Field, Calif.
Captain Raymond E. Culbertson, Randolph Field, Texas.

1st Lieut. Donald L. Putt, Wright Field, O.

1st Lieut. Howard G. Bunker, Patterson Field, O.

1st Lieuts. Louis E. Massie, Samuel O. Redetzke, and Herbert H. Tellman, students at the University of Michigan, Ann Arbor, Mich.

Captain Beebe is relieved from temporary rank, effective June 30; Captain Keirn, July 1, and Captain McDonald, July 29, 1936.

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FRANCE LEADS IN WORLD'S AERONAUTICAL RECORDS

The Bulletin of the Federation Aeronautique Internationale for January, 1936, lists a total of 117 world's aeronautical records, as of January 1, 1936. France is credited with 37 of these records, followed by the United States with 36; Italy, 27; Germany and Poland, 8 each, and Great Britain, 1.

Of the 36 records held by the United States, 26 are credited to civilian pilots, 5 to the Army Air Corps and five to the Navy.

The team of Edwin Musick, Boris Sergievsky and Charles A. Lindbergh holds five records; four records each are credited to D.W. Tomlinson, former Navy pilot, and Benjamin King, of Washington, D.C. On three of the flights made by Tomlinson, he was accompanied by J.S. Bartles as co-pilot, and on the fourth by H.B. Snead. Three records are held by Major-General Frank M. Andrews, Air Corps, commanding the GHQ Air Force. Two records each are credited to the free balloon team of E.J. Hill and A.C. Schlosser, to Lieut. Richard L. Burke, U.S.N.; to Lieut.-Commander Knofler McGinnis, accompanied by Lieut. J.K. Averill and Aviation Pilot T.F. Wilkinson, all of the U.S. Navy; to Boris Sergievsky (one solo and one accompanied by R.B. Quick); and to Harry Richman.

One record each is credited to Captains Albert W. Stevens and Orvil A. Anderson, Air Corps; Captain Hawthorne C. Gray, Air Corps (deceased); Colonel Roscoe Turner, Howard Hughes; A.C. Chester; Lieut. A. Soucek, U.S. Navy; Major Alexander P. de Seversky; Mrs. Amelia Earhart and Miss Helen MacCloskey, and S.J. Wittman.

The altitude record of the Stratosphere Flight of Captains Stevens and Anderson, as homologated by the Federation Aeronautique Internationale, is 22,066 meters, or 72,395 feet.

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Individual and formation altitude performance flights were accomplished by the 35th Pursuit Squadron, Langley Field, Va., during the week of January 20-25. Formations were operated above 20,000 feet to familiarize the pilots with high altitude conditions and the use of oxygen equipment. Flying Cadet Walter J. Garrison, piloting a P-6E airplane, made the highest individual flight.

During the calendar year 1935 there were 347 days on which airplanes could and did operate from Randolph Field, Texas. This was an increase of fourteen days as compared with the record of the preceding year.

NOTES FROM AIR CORPS FIELDS

Barksdale Field, La., January 31.

A new "skeet" range, only a short distance from the Officers' Club, has been constructed. The towers are stucco, the range nicely fenced and the entire range is a pleasing addition to the architecture of the post.

Credit for the planning and supervisory work necessary must be given to Captain George McCoy, Jr., Air Corps, and for the actual construction to Staff Sergeant Salvatore Torres of the 60th Service Squadron, GHQ Air Force. This range will be used by the officers of Barksdale Field and will supplement the old skeet range, which will now be used exclusively for the required training of enlisted gunners.

Work is being started on two concrete tennis courts and plans being made for laying out a 9-hole golf course which will start and end near the Officers' Club.

The two C.C.C. Companies which have been stationed and working on the reservation for the past several months have improved the wooded area tremendously in general reforestation work and in improving conditions for game which is fairly plentiful. Credit must again be given to Captain McCoy, who has been and still is in charge of all projects handled by these companies.

The 20th Pursuit Group completed its aerial gunnery training at Chapman Field, Miami, Fla., during January. The detail of the 71st Service Squadron, which has been on duty at that point since early in November, is at last scheduled to return to Barksdale Field.

Several excellent scores were turned in by the pilots on the aerial phase of gunnery, Major Charles G. Percy's topping all others with a total of 465 hits out of 500 possible on his record run.

The pilots of the 77th Pursuit Squadron, while enroute to Chapman Field for gunnery training, enjoyed the overnight stop at Maxwell Field on January 12th. They were entertained at the Officers' Club. The personnel of this squadron, in common with all others who went to Miami during the entire period of the camp, report the hospitality of the Florida residents as unexcelled.

The Third Wing and Barksdale Field join the 79th Pursuit Squadron in congratulating Privates Henry G. Thorne and Harold J. Rau, who culminated a long period of study by passing examinations in all the educational subjects required for eligibility as flying cadets. These men were the only ones at this station who applied for this examination and were found physically qualified.

Barksdale Field anticipates with pleasure the arrival of the First Pursuit Group from the frozen stretches of the north. It is felt that the pilots of that organization will enjoy the performance of ground gunnery training under the conditions existing at this station, and many members of the command are hoping that these officers will see fit to bring their golf clubs and squash racquets.

About a week later, this item was submitted: Barksdale Field and the surrounding cities

and hamlets desire to go on record for hospitality accorded. The "visiting firemen" from Selfridge Field will certainly bear out this statement, which is made, not in a spirit of bragadocio, not because of arrangements made and facilities offered, not in an effort to solicit expressions of gratitude, but on account of our exceeding thoughtfulness in making things as homelike as possible for visitors. Mention was previously made of the pleasure which it is hoped the pilots of the First Pursuit Group would take in our weather. On second thought it became obvious that it would be wrong to make too sudden a change for our friends. In consequence, the first contingent of sharpshooters ("Experts," if you please) was met by our first real touch of winter which has endured to the present writing and bids fair to continue during the entire stay of this squadron. After all, "there's no place like home."

Langley Field, Va., February 3rd.

During the past two weeks, the 20th Bombardment Squadron has been preparing for Winter Test Maneuvers to be held at Concord, N.H.

The 36th Pursuit Squadron is glad to welcome Flying Cadets Paul E. Amspaugh and Frank E. Bennett, transferred from the 37th Attack Squadron, January 14th. These two members will feel more at home inasmuch as both specialized in Pursuit aviation at Kelly Field.

Captain Russell A. Wilson was assigned to the Ford Transport during winter maneuvers at Concord, N.H. Attired in his long woollens, he departed on January 25th to take up his new duties.

Lieut. D.E. Williams has recently installed new buzzer equipment in the pilots' room of the organization. All pilots are practicing and receiving code with a goal of 20 words per minute ahead of them.

Randolph Field, Texas, February 3rd.

Flying Cadet Frederic G. Huish, a student on the Primary Stage, joined the select members of the Caterpillar Club on January 22nd. Cadet Huish was practicing rolls at 3,000 feet and got into an outside spin. Unable to right the plane, he unbuckled his belt at about 500 feet and was thrown from the cockpit. Cadet Huish was uninjured.

Kelly Field, San Antonio, Texas, February 8.

Two officers of the Canadian Army visited Kelly and Duncan Fields on February 7th. Wing Commander D. Kemmy, of the Royal Canadian Air Force, and Major W.R. Barry, of the Royal Canadian Engineers, were received by Colonel Fickel, the Commandant of the School, and after a most interesting discussion of training and construction programs were taken on a tour of inspection of Kelly and Duncan Fields. They were entertained at a luncheon at the Kelly Field mess, which was attended by the Commandant, Assistant Commandant, Adjutant and Secretary of the School.

Selfridge Field, Mt. Clemens, Mich., Feb. 3.

Captain Ralph Finch, Q.M. Corps, having recently been assigned to duty at this station as as-

sistant to the Post Quartermaster, was welcomed to Selfridge Field on January 20th. Captain Finch was formerly stationed at Ft. McKinley, Maine.

1st Lieuts. Edgar A. Goff, Edgar B. Franklin, and 2nd Lt. Edwin A. Warren, Air Reserve, reported for 14 days' active duty and proceeded to their homes on January 31st.

Lieut.-Colonel Ralph Royce welcomed to the post on January 25th the following officers of the Colombian Army: Major Benjamin Mendez, Captains J.A. Esievez and E. Concha, also Mr. G. Baptie of the Ford Motor Company. The visitors were conducted through the Station Complement barracks, the 17th Pursuit Squadron hangar, and various other activities of the post. They were guests of Col. Royce at luncheon and at the dinner dance at the Officers' Club in the evening, after which they departed for Detroit.

The first round of the Inter-Squadron basketball league was completed recently, with the 56th and 57th Service Squadrons tied for high honors. A date has not yet been set for the play-off game of the first round. The second round of the League is well under way.

A post basketball team has been organized from members of each organization of the station, composed of: Forwards - Ray Juhl, Fred Beane, Charles Sanders, Glenn Tatham, Raymond Martin, James Noble; Center - William Ahrens, Jack Day; Guards - F.W. Smith, Ross Emery, Gerald Essendrop, Verlin Anding, Russell Farrell, Sidney Skinner and Oscar McCoullough. The post team played their first game of the season on February 2nd with the Port Huron Junior College team at Port Huron and won by the score of 26-23.

A squash team has been organized, composed of the following players: No. 1, Captain E.E. Partridge; No. 2, 1st Lieut. Paul W. Blanchard, Jr.; No. 3, Capt. Emmett O'Donnell, Jr.; No. 4, 1st Lt. James R. Anderson, No. 5, Lieut.-Col. Ralph Royce.

The team is entered in the Class B League in Detroit, which is composed of eight teams, including the Detroit Athletic Club, the Racquet Club and the University Club. So far, Selfridge Field has won three matches, lost one, and is tied for first place. The team plans to enter the State Class B League tournament to be held in Detroit soon for both individual and team competition.

Boston Airport, E. Boston, Mass., Feb. 6th.

Recent visitors at this station were Col. Gilkeson, Majors Woodson, Wilson, Captains Cullen, Denniston, Jacobs, Johnston, Laubach, Lieuts. Dougher, Haskins, Klein, Melden, Mountain, Cadets Bennett, Fischer, and Lieut. Commander Lynch, USN.

First Lieut. Winsor Harlow, Air Reserve, Detachment Operations Officer, who at present is on 3 months' active inactive duty has been allotted an additional 50 hours' flying for the fiscal year.

Second Lieut. A.Z. Boyajian, Air Reserve, has been placed on 3 months' active inactive duty and assigned as Armament, Communications, Engineering and Transportation Officer.

First Lieut. Crocker Snow and 2nd Lieut.

R.C. Woodward, Air Reserve, recently served two weeks of active duty. Second Lieut. W.G. Bain, Jr., Air Reserve, is at present serving two weeks' active duty.

Pvt. A.V.R. Marsh has completed his directive training for the fiscal year.

Total flying time for the fiscal year to January 31, 1936, is as follows: Pilot time, Regular Army: 1213:50 hours - Reserve Officers: 1327:15 hours - Observer time, Regular Army: 83:15 hours.

San Antonio Air Depot, Duncan Field, Texas.

A detailed inspection of all departments of the Depot was made January 24 and 25 by Lieut.-Col. J.L. Parkinson, I.G.D., of the Office of the Inspector General, Washington. Col. Parkinson expressed himself as pleased with the administration of affairs at the Depot.

Two of our Engineering Department key men were dispatched January 30th on extended tours of temporary duty which will prove of great value in enabling the Depot to keep up with the latest developments in aeronautical engineering. Mr. J.V. Myers, Superintendent of Aircraft Shops, is on a visit of about 40 days to the various commercial aeronautical factories and repair establishments throughout the Middle West and East, also the Air Depot at Middletown, Pa., and the Materiel Division at Wright Field, Ohio, to observe shop practices and receive instructions in the operation, maintenance, and repair of new equipment. Mr. J.L. McDowell, Foreman of the Aircraft Instrument Section, is attending a school for training mechanics in the operation, maintenance, and repair of aircraft cameras, which is being conducted in February by the Fairchild Aerial Camera Corporation at Woodside, L.I., New York.

In the field of athletics, an enthusiastic softball season, which began last summer, has just been concluded by an Intradepot League, sponsored by our Duncan Field Recreation Association and consisting of six teams of Depot employees: The Depot Supply team, the Hangars and Offices team, and one team each from the Aero Repair, Engine Repair, Machine Shop, and Electrical sections of the Engineering Department. The championship trophy, a large and handsomely engraved silver cup, was won for the season by the Aero Repair team, captained by C.L. Fikes. It was presented on February 4th, in the presence of the Depot personnel, by our Commanding Officer, Colonel John H. Howard, who took this occasion to express his appreciation of the loyalty and team work manifested by all in every phase of the Depot's activities, and his pleasure in observing their spirit and morale.

This Softball League, the first to be maintained at this station, has been very popular, some 90 to 100 employees having participated, especially as the favorable climate of this section permits outdoor playing throughout practically the entire season. With the showing so far made, it is hoped next season to engage in the championship games of the City of San Antonio leagues.

Scott Field, Belleville, Ill., January 31st.

Major Ennis C. Whitehead, CHQ Inspector from Langley Field, Va., visited the field from January 13th to the 17th, inspecting the CHQ Air Force units. As a result of his investigation, V-6951, A.C.

the Ninth Airship Squadron is assigned to the 3rd Wing, with headquarters at Barksdale Field, Louisiana.

First Lieut. Raymond F. Nicholson, Air Reserve, completed 14 days' active duty on February 1st.

Sergeant John Schell, Station Complement, discovered a fire in the Post Exchange in the early morning of January 22nd. Due to his quick action in running direct to the fire station to give the alarm, the fire was extinguished before it gained any headway.

Many of the WPA improvement projects at the field have been completed. Several flying hazards have been removed.

Technical Sergeant Robert S. Willis, Finance Dept., one of the best bowlers in this region, and the St. Louis bowling champion last year, was eliminated in the third round of the St. Louis district matches of the National Match Game Eliminations. Sergeant Willis dreams of a telegraphic bowling match with other Army bowlers, the scores being telegraphed or radioed to a central point to determine the Army champion.

Private Phillip W. Kunz, formerly stationed with the 9th Airship Squadron here, is now the second best Army golfer in the Philippine Islands. While he was at Scott Field, he starred as a baseball pitcher.

The Inter-squadron basketball games came to an end on January 30th, with the Station Complement quintet winning the post championship. The Station Complement and the 15th Observation Squadron took turns defeating the Staff and the 9th Airship Squadron, as well as each other. The season ended in a tie which was played off, the Station Complement winning 31 to 13 over the 15th Squadron.

A team composed of the best players on the post will be formed to represent Scott Field for playing local teams.

Luke Field, T.H., January 16th.

72nd Bombardment Squadron: Welcoming the return of Lieut. Pottenger, who arrived on the SS LURLINE, January 9th, and Captain Heber, who arrived on the SS MALOLO, January 16th, Aloha flights were made.

23rd Bombardment Squadron: The squadron day room is being renovated. New ceiling and walls are being installed, and new furniture and magazine binders are being purchased.

On January 10th, the Squadron made a training flight to the Island of Kauai to inspect the airdromes of that island. Ten airplanes, accompanied by the Amphibian from Wheeler Field, made the flight. The Squadron refueled and had lunch at Burns Field, flew over the beautiful Waimea Canyon and around the island, and landed at Lihue before returning to Luke Field.

On January 11th, the "Saviors of Hilo" - the men who bombed the lava flow - had their pictures taken by Luke Field Photo Section personnel. The majority of the officers present were from this Squadron.

Mrs. J.J. Ladd won the elegant sterling silver coffee service, recently raffled off by the Luke Field Officers' Club.

41st Division Aviation, Wash. Nat'l Guard.

Another record for flying time is being written by pilots of the 41st Division, Felts Field, Spokane, Wash. During the first six months of the present fiscal year, the pilots, not including observers' time, rolled up a total of 1899 hours and 10 minutes as compared with a grand total of 3461 hours for the last fiscal year. This time was flown with five airplanes by 14 pilots, one of whom, Lieut. Harold R. Hansen, was commissioned on February 1. The flying time averages about 135 hours per pilot for the six-month period.

Extended cross-country flights, of which many were made during the last six months, will be on the increase with the coming of spring weather, as will flights to neighboring towns in which are located companies of the 161st National Guard Infantry regiment. A training program is being worked out whereby flights of Observation planes will be made to work ground problems with the Infantry troops.

"The pilots don't seem to be satisfied with their record of last year, and have gone out to boost the record," said Major Robin A. Day, commanding-instructor, "and it looks like they are going to make it."

Time among the pilots is well distributed, as shown below:

Major Robin A. Day	193 hrs. 55 min.
Capt. William G. Foster	89 " 40 "
Capt. Claude Owen	225 " 15 "
Capt. L.C. Sherman	44 " 25 "
Capt. John L. Walter	112 " 25 "
Lieut. Byron Cooper	75 " 10 "
Lieut. Claire Hartnett	110 " 05 "
Lieut. Laurie Heral	87 " 35 "
Lieut. Dale Swartz	211 " 50 "
Lieut. Stanley Wagner	87 " 25 "
Lieut. H.R. Wallace	119 " 40 "
Lieut. Emmett Corrigan	280 " 25 "
Lieut. E. Malstrom	164 " 25 "
Lieut. Harold R. Hansen	17 " 55 "

Staff Sergeant Harold Rossing Hansen is now 2nd Lieut. Hansen in the 41st Division Aviation. Listed as one of the oldest enlisted men in the organization, Lieut. Hansen was commissioned February 1st as an airplane pilot by Adjutant General Maurice Thompson, of Camp Murray, Wash.

Lieut. Hansen has had a transport pilot's license for commercial flying for two years. On his being commissioned he was named squadron adjutant by Major Robin A. Day. Lieut. Hansen will soon start his instrument flying training, he being the only pilot in the Division Aviation who has not passed this course and given his instrument flying card.

March Field, Riverside, Calif.

Faces of 13 March Field Reserve officers are wreathed in smiles this week. They were informed by Lieut.-Colonel John H. Pirie, commander of the 1st Wing, GHQ Air Force, that the War Department had granted them six more months of active duty as second lieutenants in the Air Reserve. They will continue to be stationed at March Field.

For several months the officers concerned have speculated as to whether they would be granted the additional tour of active duty. They have been flying at March Field since

February, 1934, one year of which was as graduate flying cadets. This addition to their duty tour gives them a total of 30 months of graduate flying after leaving the Advanced Flying School at Kelly Field, San Antonio, Texas, instead of the average of 20 months formerly allowed Army flyers before reverting to civil life.

Those receiving the extra duty tours are 2nd Lieuts. Robert Ashman, James T. Carter, Browne Clement, Frank R. Cook, Don W. Eisenhart, Wm. A. Hatcher, John A. Hilger, Weldon M. James, Irvine A. Rendle, George H. Shafer, Paul E. Todd, John H. Turner and Frederic C. Gray. Eight of these officers, Lieuts. Turner, Todd, Gray, Shafer, James, Hatcher, Eisenhart and Cook are married and live in Riverside, while the remaining five are bachelors and reside in quarters at March Field.

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WHO IS THE CREW CHIEF?

The big Bomber was ready to take off from Hamilton Field, Calif., for Langley Field, Va. It had a crew of three - Captain Robinson, of Hamilton Field, the pilot; Captain Jones, the co-pilot and navigator, and Captain Smith, the bomber. One of the latter two was stationed at Langley Field and the other at Fort Leavenworth, Kansas. Just before the take-off, as Captain Jones was telling Captain Robinson that he, Jones, had only \$5.00 cash with him, three Air Corps mechanics came aboard the huge Bomber. They showed their orders for the flight and, curiously enough, their names also were Robinson, Jones and Smith.

Captain Robinson put them in charge of the co-pilot and proceeded to take off. For some hours the co-pilot talked with the mechanics to become acquainted with their capabilities, etc., and also spoke about the other officers aboard. Then he assigned one mechanic as crew chief, one as radio man and the third as gunner.

Sometime later, while in the air and half way across the continent, Captain Robinson asked Captain Jones the name of the soldier whom he had assigned as crew chief, and if the gunner was a good one.

Captain Jones answered: "The radio man lives just below us in that town you see. The officer stationed nearest to his home has three times the amount of money on him that the radio man has, and the latter's namesake among the officers is stationed at Langley Field. Soldier Smith can beat the gunner on the target range."

"But," said Captain Robinson, "I asked you the name of the crew chief."

"Well, I practically told you his name now," replied Captain Jones.

"He sure did; skipper," chimed in Captain Smith, who was connected to the other two by interphone.

So Captain Robinson turned the controls over to Captain Jones and started to figure the thing out.

Question: Who was the crew chief?

The name of the one giving the first correct

solution will appear in the next issue of the News Letter. The solution to the puzzle will also be given.

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TECHNICAL INFORMATION AND ENGINEERING NEWS Air Corps Materiel Division

An Engineering Section Memorandum Report states that it is possible to mount two 5-lens cameras in tandem and secure 9-lens photographs for mapping purposes, also that covering an area for mapping purposes with the tandem cameras increases the flying time and divides the number of mapping cameras possible of employment at a single time in half. An Engineering Section Memorandum Report from the Engineer Corps Detachment, covering the printing, mounting, and use of these photographs will be prepared on completion of tests (approximately 45 days).

Instruments.

A representative of the Materiel Division departed for Brooklyn, New York, to visit the Sperry Gyroscope Company for a period of instruction relative to the construction, operation and maintenance of gyro pilots and other aircraft instruments manufactured by that Company.

Tachometers.

Two Jaeger chronometric tachometers, incorporating time registers, have been received from the Jaeger Watch Company, New York City, on order for experimental tests.

ACKNOWLEDGMENT

Thanks again to the Materiel Division, Wright Field, for furnishing the News Letter the inserts accompanying the article by General A.W. Robins on "Materiel Division Developments and Activities During 1935." The lay-outs for these inserts is the work of Mr. Bob Fitzgerald, of the Statistical Dept. of the Army Aeronautical Museum, of which Major William J. Hanlon is the Director. The plates were made and printed in the Printing Unit of the Materiel Division.

The Air Corps Information Division greatly appreciates this whole-hearted cooperation.

CONTRIBUTIONS TO THE NEWS LETTER

The News Letter would appreciate some news items from Moffett Field, Sunnyvale, Calif.

Of late, no news items have been received from

Mitchel Field, N.Y.
Middletown Air Depot
Fairfield Air Depot
Crissy Field
Hamilton Field
Albrook Field
France Field
Chanute Field
Bolling Field

Attention is invited to Circular Letter No. 35-1, Office of the Chief of the Air Corps, January 4, 1935. The cooperation of Publicity Officers will be greatly appreciated.

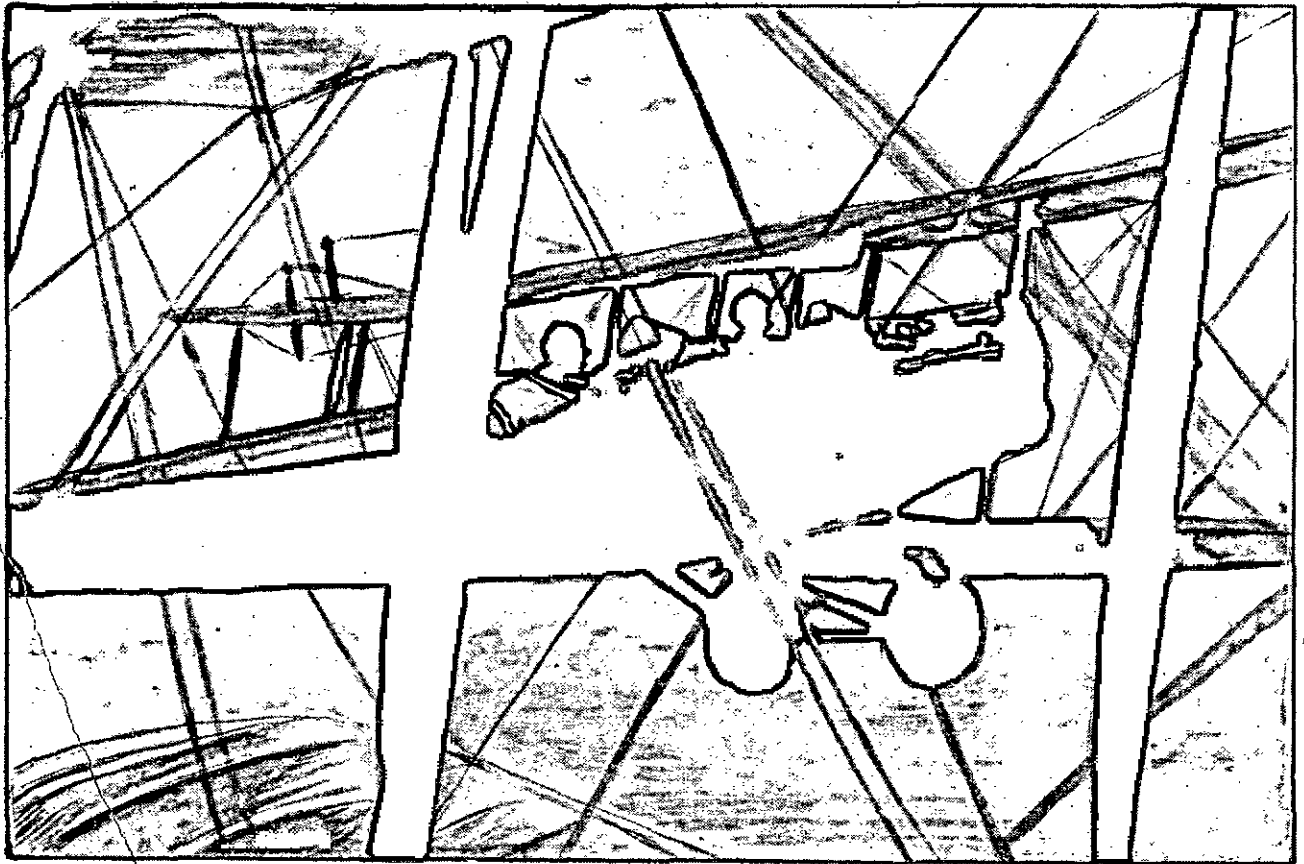
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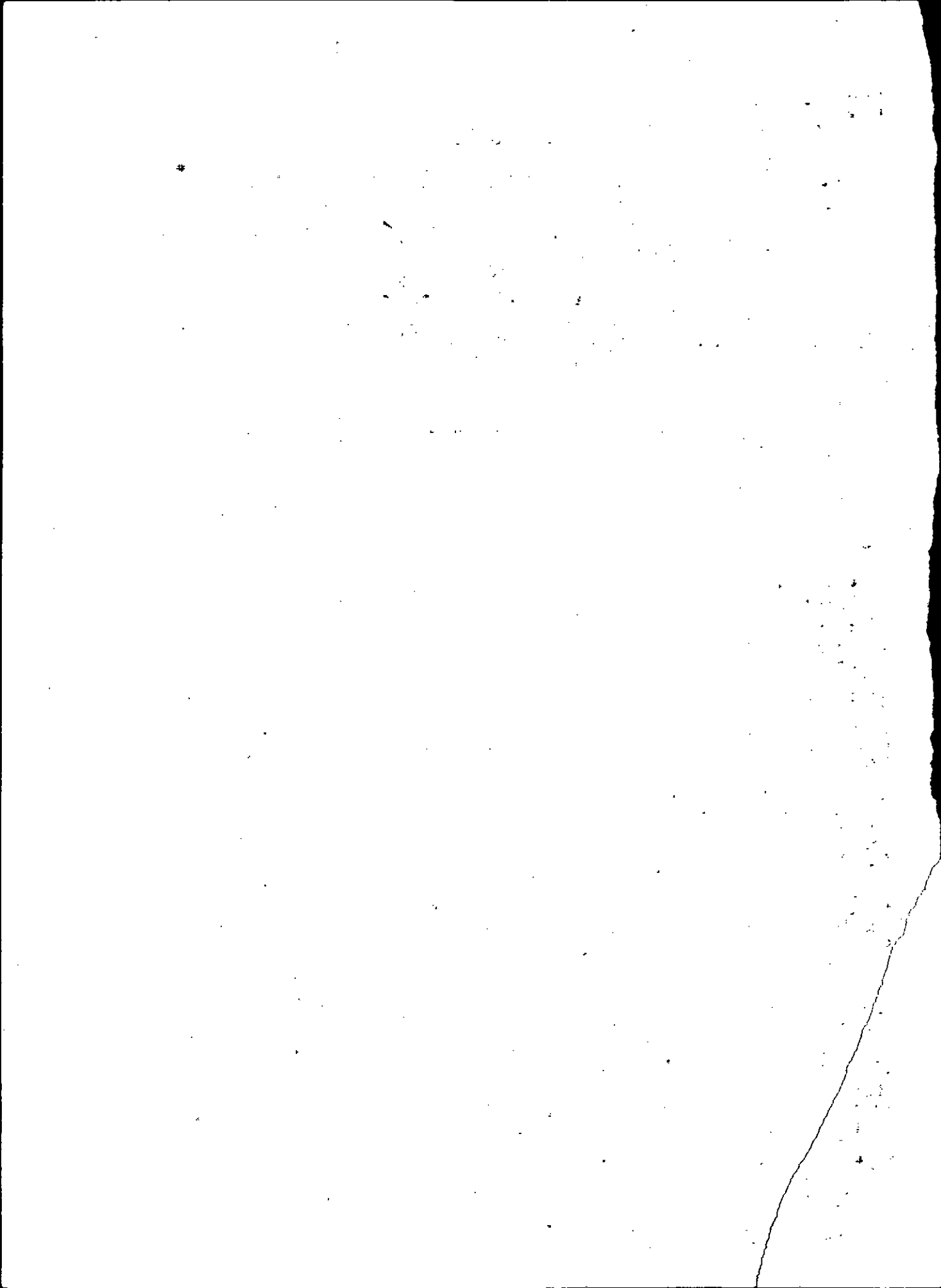


News Letter

Issued by the office of the Chief of the Air Corps
War Department, Washington, D.C.

Autó Lang Syne





The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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NEW GROUP OF PILOTS FOR THE ARMY AIR CORPS

By the Kelly Field Correspondent

Class No. 24-B, consisting of two foreign officers, five Regular Army officers, and 45 Flying Cadets, was graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, on February 15, 1936. Major-General Frank M. Andrews, commanding the GHQ Air Force, was invited to Kelly Field to receive the aerial review, make the graduation address to the students, and present them their diplomas. After being delayed on account of unfavorable weather, General Andrews arrived at Randolph Field the night of February 14th.

Upon his arrival at Kelly Field for graduation exercises, General Andrews was welcomed by a number of the officers now stationed here who had the pleasure of serving under him when he was in command of the Air Corps Advanced Flying School. Other officers in the reviewing party were Brigadier-General James E. Chaney, Commanding the Air Corps Training Center; Colonel Jacob E. Fickel, Commanding the Air Corps Advanced Flying School; Lieut.-Colonel H.H.C. Richards, Assistant Commandant, Air Corps Advanced Flying School; Colonel Henry W. Harms, Commanding the Air Corps Primary Flying School; Lieut.-Colonel Lloyd N. Keesling, Assistant Commandant, Air Corps Primary Flying School; Major P.L. Williams, Director of Flying Training, Air Corps Training Center, and Major Charles H. Dowman, Director of Ground Training, Air Corps Training Center. The reviewing party took up a position in front of Post Operations Office, facing south on the edge of the runway.

The Flying Cadets from Randolph Field, on both primary and basic stages, were transported to Kelly Field in trucks and were formed immediately in rear of the reviewing party.

The 15th Field Artillery Drum and Bugle Corps, with Lieut. P.H. Pope in charge, was formed on the right of the line of Randolph Field Cadets. This drum and bugle corps was loaned for the occasion by Colonel F.W. Honeycutt, commanding the 15th Field Artillery at Fort Sam Houston, Texas.

The students from the graduating class climbed into the cockpits of airplanes to which they were assigned for the review at 9:00 a.m.; taxied onto the airdrome at 9:05, and took off at

9:10. The Bombardment flight, led by Lieut. Burlingame and consisting of nine B-3's, B-4's and B-5 airplanes, passed the reviewing stand at exactly 9:30. They were followed by the Observation flight, led by Captain James B. Jordan, and consisting of nine O-25 and O-19 airplanes. The Attack Section, led by Cadet Brown and consisting of ten A-3B airplanes, made up the third element of the review; and the Pursuit flight, led by Cadet Bruce and consisting of 15 P-12 airplanes, was the fourth and last element to pass the reviewing stand.

After the airplanes that had participated in the review returned to the airdrome, the Cadets from Randolph Field marched out to the runway in front of Post Operations, where they were formed and presented to General Andrews and his party for inspection. Following this inspection, a competitive drill by the companies of Cadets was held, consisting of the following events:

1st Event - (10 points possible). Establish a line and align the company; time limit, one minute.

2nd Event - (50 points possible). Manual of Arms; time limit, three minutes.

3rd Event - (10 points possible). Close on right platoon; time limit, one minute.

4th Event - (20 points possible). Extend on rear platoon on right into line and halt; time limit, two minutes.

5th Event - (40 points possible). Squads right, column right - halt; forward march and halt; time limit, two minutes.

6th Event - (50 points possible). Platoons right front into line and halt; time limit, two minutes.

7th Event - (40 points possible). Squads right about - squads left about - close on leading platoon and halt; time limit, two minutes.

8th Event - (30 points possible). Column of squads leading platoon - squads left; squads left and halt; time limit, three minutes.

Inspection - (25 points possible).

Pass in review. Best line while passing in review - (25 points possible).

Company A won the competitive drill with a total score of 285 out of a possible 350 points. B Company was only three points behind with a score of 282. Judges for this competitive drill were Captain John M. Weikert, Commandant of Cadets at Randolph Field, and his assistant, Lieut.

V-6958, A.C.

Arthur W. Meehan. The music furnished by the Drum and Bugle Corps of the 15th Field Artillery materially added to the efficiency and effectiveness of this drill.

Immediately following the competitive drill, the Cadets marched to an area west of the Operations Building, which had been reserved for them, and stacked their rifles before marching to the Theatre for the graduation exercises.

As the cadets left the flying line, one airplane of each type used in training students at the Air Corps Advanced Flying School was taxied down in front of Post Operations Building for inspection by the public. Suspended from a prominent point of each airplane was a sign giving a brief description thereof and its performance.

Graduation exercises were held at 10:45 a.m. in the Post Theatre, which was filled to capacity by relatives and friends of the graduating class and members of the Army and civilians from this vicinity. After the invocation by Chaplain E.R. Martin, Colonel Jacob E. Fickel, as Commandant of the School, introduced General Andrews as the principal speaker. General Andrews made a very interesting and timely address to the class and presented an accurate and interesting picture of what they could expect during their first years of service. His remarks did much to encourage the students, particularly the Cadets who have been somewhat disturbed concerning their uncertain status in the Air Corps after graduation from the School. Following his address, General Andrews presented each student with his diploma and congratulated them upon having successfully completed the course of training. Chaplain Martin's benediction brought the exercises to a close.

This class reported to Kelly Field for training on October 15, 1935, and at that time consisted of six Regular Army officers; two foreign officers, and 50 Flying Cadets, a total of 58 students. Six of those who reported for training did not graduate with this class. One Regular Army officer and one Flying Cadet were eliminated on account of insufficient progress made in flying; two Cadets were held over for instruction in the class to follow, due to loss of time through illness; one Cadet was discharged for physical disability and one Cadet was killed in an airplane accident. This resulted in graduating 52 out of 58, or 89.6%.

The class completed all of its prescribed training in spite of the shortage of airplanes and officers at this station, and it is believed that the graduates will be a real credit to the service. In view of the high standard required for candidates to begin the course and the exacting accomplishment

required during the training period, each student is to be congratulated upon his successful completion of the course. This is especially true in the case of the two foreign officers who had the additional difficulty of another language to master. They are Captain Jose C. de Silva, of the Brazilian Air Corps, and First Lieut. Jose Vergara Ahumada, of the Mexican Air Corps.

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PERSONNEL OF GRADUATING CLASS NO. 24-B

Officers, Regular Army

Capt. James B. Jordan, A.C.	Bolivar, Mo.
2d Lt. Jerome E. Blair, II, Cav.	Norfolk, Va.
2d Lt. Paul Burlingame, Jr., Inf.	Louisville, Ky.
2d Lt. Stanley J. Donovan, Inf.	Portland, Me.
2d Lt. Edward Flanick, Cav.	Holliday's Cove, W. Va.

At this writing, orders assigning these officers to Air Corps stations have not yet been issued.

Foreign Officers

1st Lt. Jose G. V. Ahumada	Mexico
Captain Jose C. Muricy	Brazil

Flying Cadets

Orders have been issued assigning Flying Cadet graduates to Air Corps stations, as follows:

Attack Pilots

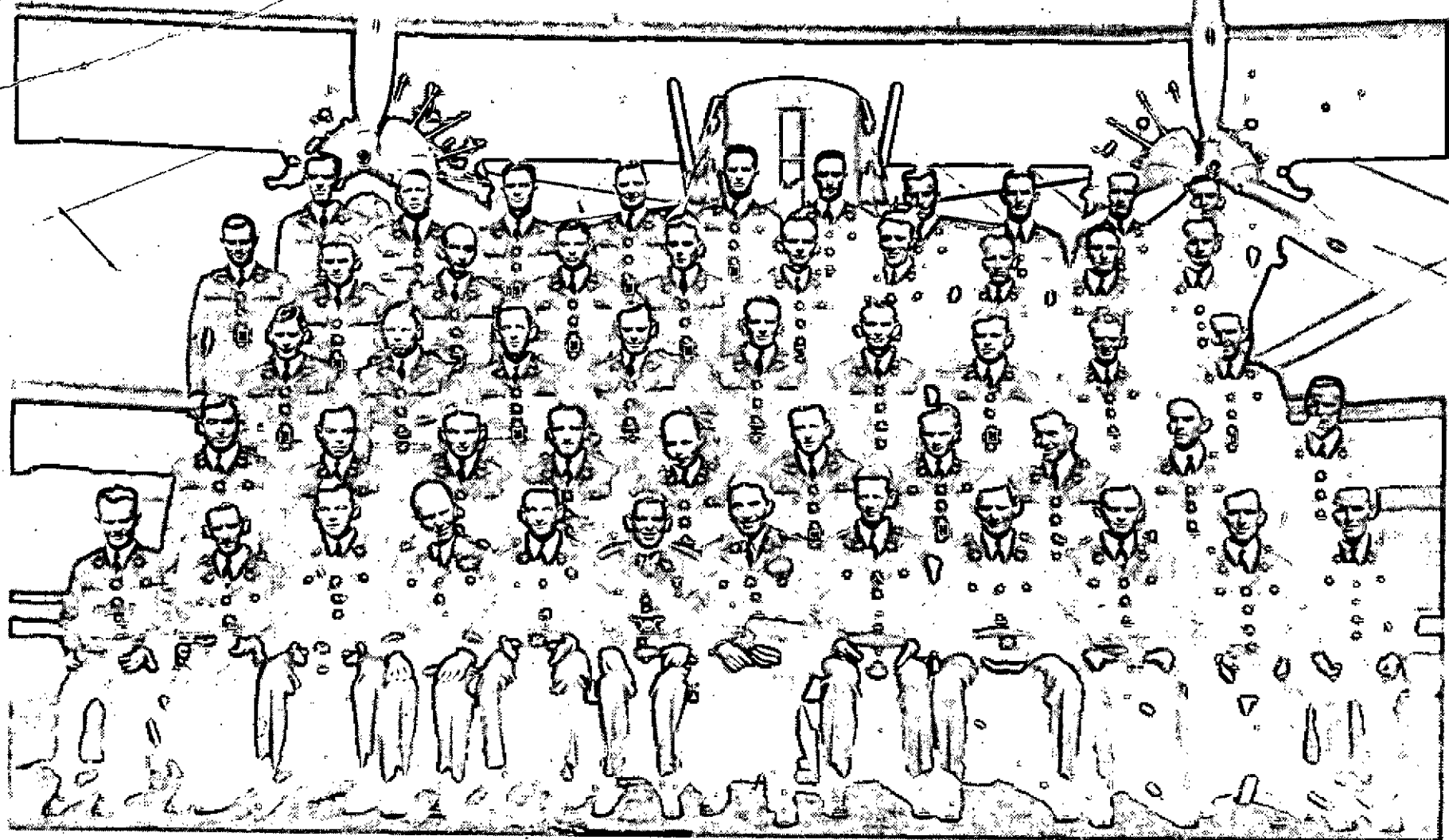
<u>To Langley Field, Va.:</u>	
John E. Eakin	Hudson, O.
Earl Willoughby	El Centro, Calif.
<u>To Barksdale Field, La.:</u>	
David Wade	Minden, La.
Edwin H. Hawes	Seedrift, Texas.
Kermit D. Stevens	Portland, Ore.
Ryder W. Finn	McCoy, Ore.
<u>To March Field, Calif.:</u>	
Nelson T. Brown	Tulare, Calif.
Roger M. Roberts, Jr.	Menlo Park, Calif.
Elbert D. Reynolds	Beaumont, Texas.
John S. Hardy	Logansport, La.

Bombardment Pilots

<u>To Langley Field, Va.:</u>	
Kenneth A. Cavenah	Helper, Utah
Clarence K. Longacre	Williamsport, Pa.
Lowell F. Johnson	Lafayette, Ind.
Chris H.W. Rueter	Waco, Texas
Kenneth H. Gibson	Salt Lake City, Utah
<u>To Mitchel Field, N.Y.:</u>	
Robert C. Sexton	Los Cruces, N.M.
Harry L. Donicht	Glencee, Minn.
Kenneth G. Ames	Bridgton, Me.
Dalene E. Bailey	Spokane, Wash.
Howard W. Helfert	Sioux Falls, S.D.
William E. Creeer	Spanish Forks, Utah
Robert L. Olinger	Angola, Ind.
Willard E. Sherman	Mt. Vernon, S.D.
Charles E. Lancaster, Jr.	Lexington, Ky.
David H. Walker	Sacramento, Calif.

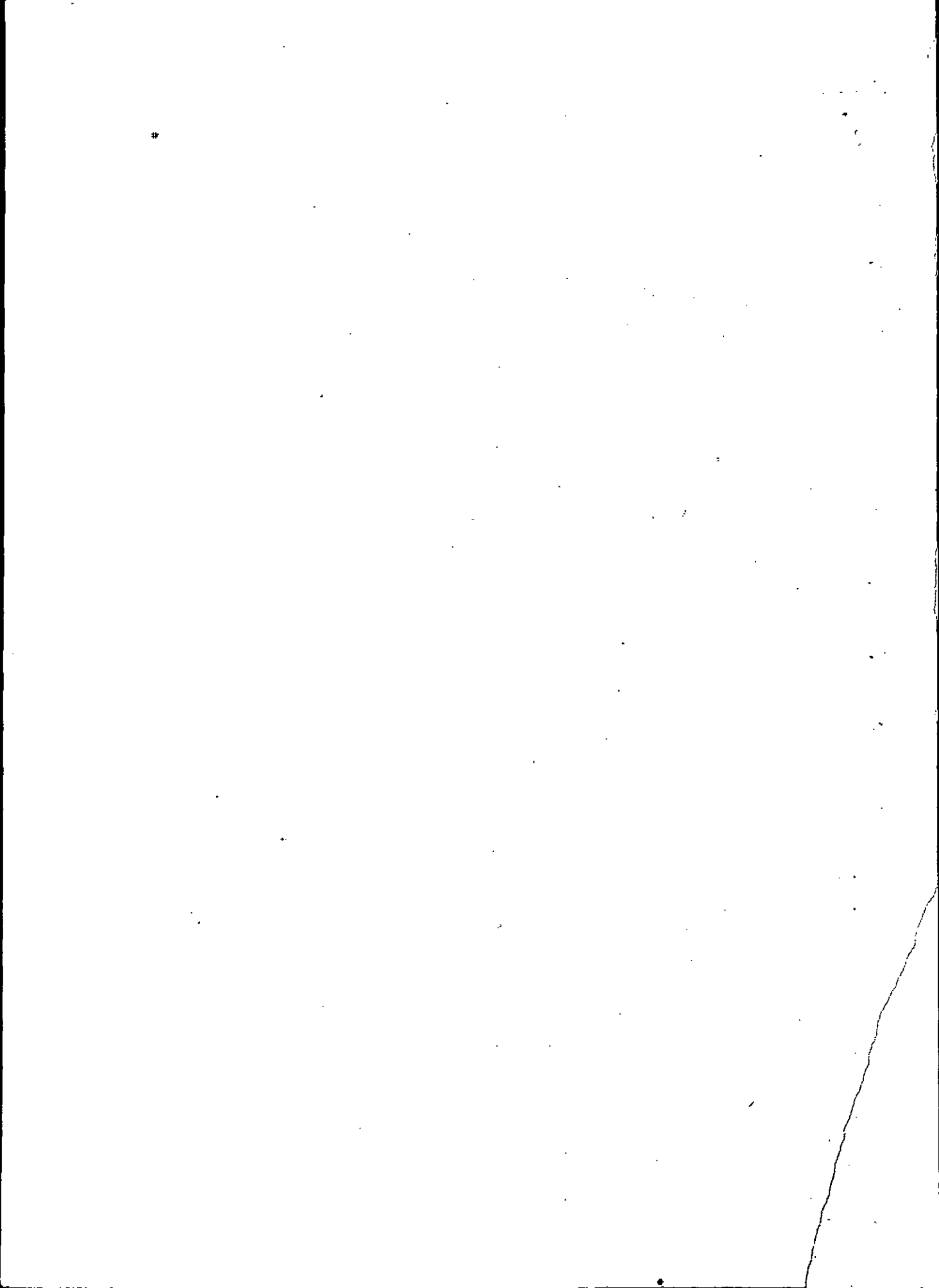
Observation Pilots

<u>To Mitchel Field, N.Y.:</u>	
Ernest P. Wackwitz, Jr.	Rockville Center, N.Y.
Audrin R. Walker	University, Ala.
Robert F. Burnham	Battle Creek, Mich.
<u>To Brooks Field, Texas:</u>	
Beverly H. Warren	Plainview, Texas
Bela A. Harcos	Los Angeles, Calif.
John D. Whitt	Austin, Texas
Robert W. Ryder	Minneapolis, Minn.



CLASS 24-B, GRADUATED FEBRUARY 15, 1936

- TOP ROW - Left to Right: Flying Cadets: Brown, Reynolds, Wood, Eekin, Wade, Harcos, Helfort, Longacre, Cavenah, Young.
- 2nd ROW - Left to Right: Flying Cadets: Warren, Fariss, Marion, Kellogg, Kramer, Reuter, Ryder, Burnham, Johnson, Gibson.
- 3rd ROW - Left to Right: Flying Cadets: Sherman, Ames, Roberts, Hawes, Hayes, Hardy, Bailey, Creer, Wackwitz.
- 4th ROW - Left to Right: Flying Cadet: Willoughby, Olinger, Sexton, Stevens, Johnston, Camp, Donicht, Lessig, Walker, A. R., Whitt.
- BOTTOM ROW - Left to Right: Flying Cadets: Walker, D. H., Cecil; Lt. Donovan, Capt. Jordan, Lt. Blair, Capt. Muricy, Brazilian Army, Lt. Ahumada, Mexican Army, Lt. Planick, Lt. Burlingame, Flying Cadets: Campbell, Finn, Bruce.
- NOTE: Flying Cadet Lancaster, who graduated with this class, was absent when this picture was taken.



<u>Pursuit Pilots</u>	
<u>To Barksdale Field, La.:</u>	
Bertrand B. Bruce	Los Angeles, Calif.
Harry B. Young	Birmingham, Ala.
Arch G. Campbell	Fort Worth, Texas
Chester W. Cecil, Jr.	Abilene, Texas
Ralph M. Kellogg	Dover, Mass.
Robert C. Wood	Haynesville, La.
Wolcott A. Fariss	Sacramento, Calif.
Cecil P. Lessig	Salina, Kans.
Wilbur D. Camp	Arlington, Texas
William L. Hayes, Jr.	Sacramento, Calif.
<u>To Selfridge Field, Mich.:</u>	
Charles E. Kramer	Fulton, Ky.
Charles E. Marion	Detroit, Mich.
Robert L. Johnston	Bellevue, Pa.

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PROGRAM OF INSTRUCTION

for the class commencing October 15, 1935,
at the Air Corps Advanced Flying School

I - SCOPE:	
To qualify graduates of the Air Corps Primary Flying School in the basic duties common to junior officers of the Air Corps in the special duties of Attack, Bombardment, Pursuit, or Observation Aviation.	
II - DURATION:	
October 15, 1935, to March 1, 1936 (4½ months).	
III - PROGRAM:	<u>Approximate Hours Flying</u>
1. Flying:	
a. Transition to Attack, Bombardment, Pursuit and Observation types of service airplanes	15
b. Specialized flying training in Attack, Bombardment, Pursuit or Observation Aviation	56
c. Instrument flying, under the hood. This includes approximately 10 hours practice in the use of the Department of Commerce Radio Aids to Navigation and a check flight as required by Circular 50-1, OCAC.	13
d. Instrument Flying, other than under the hood	5
e. Night flying (local)	3
f. Day avigation flying	28
gg. Night avigation flying	15
Total	135
	<u>Hours</u>
2. Infantry Missions(Liaison and Contact):	
To include instruction in the various types of missions, communications methods and procedure in cooperation with ground troops and all work required of divisional aviation.	10
3. Cooperation with Artillery:	
To include instruction in the description of artillery materiel, artillery terms and definitions, methods of artillery fire, Air Corps communication methods and procedure in cooperation with artillery; communications, black-board, miniature range, puff target and actual Field Artillery firing problems.	24
4. Observation Aviation:	
To include instruction in the history,	

object, organization, training, operation, various types of reconnaissance, radio, and photographic missions, tactical employment, communication methods and cooperation with other branches of the Service.	8
5. Bombardment Aviation:	
To include instruction in the history, missions, employment and training, and tactics	3
6. Pursuit Aviation:	
To include instruction in the history of development, the Pursuit airplane, factors influencing combat, the Pursuit pilot, individual tactics, the Pursuit flight, flight formation, flight tactics, the Pursuit squadron, squadron tactics, the Pursuit group, group tactics, the wing, principles of employment and administration of units.	3
7. Attack Aviation:	
To include instruction in the history, principles of employment, training, armament, offensive and defensive missions, and tactics	3
8. Signal Communications:	
To include instruction in the operation of airplane radio transmitters and receivers, various types of airplane radio telegraph and radio telephone communication procedure, and use of radio beacons in navigation	12
9. Reconnaissance:	
To include instruction in the different types of missions, orders affecting same, types of reconnaissance, reports and cooperation with ground troops	8
10. Bombs and Explosives:	
To include instruction in the nomenclature and handling of all explosives and bombs used by the Air Corps.	4
11. Bomb Racks:	
To include instruction in the operation, handling and maintenance of bomb racks used by the Air Corps.	3
12. Bomb Sights:	
To include instruction in the operation, handling and maintenance of bomb sights used by the Air Corps	6
13. Aerial Photography:	
To include instruction in the types and uses of aerial photography, aerial cameras, their accessories and methods of operation and installation.	4
14. Combat Orders:	
To include instruction in the interpretation and composition of field orders, squadron orders and flight orders.	9
15. Military Organization:	
To include a general discussion of the military organization of the Army with special emphasis on the organization of the Air Corps units.	4
16. Squadron Duties of Junior Officers:	
To include instruction in the duties and responsibilities of junior officers in a squadron, with special emphasis on the duties of the squadron adjutant, engineer, supply and mess officer.	8
17. Code Practice:	
To develop all students to send and	

	Hours
receive 18 words a minute in the Air Fire-Control Code, the Air-Ground Liaison Code and the Radio Service Code.	20
18. <u>War Planning Principles:</u> To include the principles, objectives and general methods prescribed for industrial mobilization	2
19. <u>Trap Shooting:</u> Each student to fire approximately 200 rounds	8
Total	139

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COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets of the Army Air Corps, who graduated from the Advanced Flying School, Kelly Field, Texas, in February, 1935, and who completed their additional year of training with an Air Corps tactical unit on February 29, 1936, have been recommended by the Chief of the Air Corps for commission as second lieutenants in the Air Reserve as of this date, and for extended active duty with Air Corps tactical units as Reserve officers, effective March 1, 1936, viz:

Barksdale Field, La.:

John Francis Guilmartin	Midway, Ala.
James Crawfords McGehee	Birmingham, Ala.
Frank Beard Scott	Little Rock, Ark.

Langley Field, Va.

Frank J. Bennett	Gretna, Va.
Stetson M. Brown	St. Johnsbury, Vt.
Gerald M. Cherymisin	Alta Loma, Calif.
Carlos J. Cochran	Topeka, Kans.
John L. DuFrane, Jr.	Oakland, Calif.
Clarence T. Edwinson	Topeka, Kans.
Marshall A. Elkins	Waco, Texas
Anthony Gail Eubanks	Corpus Christi, Texas
Walter J. Garrison	Croset, Va.
Lawrence W. Greenbank	Washington, D.C.
John Hal Jeffus	Plainview, Texas
Willis Sherwood Marvin	Riverside, Calif.
John B. Montgomery	Spartanburg, S.C.
Arthur H. Rogers	Raleigh, N.C.
Raymond V. Schwanbeck	Ashfork, Ariz.
Joseph Abbott Thomas	Hollywood, Calif.
Joseph Harold Wilson	Payson, Utah

Hamilton Field, Calif.:

Arthur V. Jones, Jr.	Los Angeles, Calif.
William Q. Rankin	Gulfport, Miss.
Lloyd A. Walker, Jr.	Los Angeles, Calif.

Brooks Field, Texas:

Thomas M. Bartley, Jr.	Waco, Texas
George S. Brewer	Arcadia, La.
John Beaumont Cornett	Waco, Texas
William Irvin Fernald	Tarpon Springs, Fla.
Frank V. Haynes	Clyde, N.C.
Norman Lewis Peterson	San Antonio, Texas

March Field, Calif.:

Lee Bannerman Coats	Los Angeles, Calif.
Boyd Hubbard, Jr.	Adair, Iowa
David B. Kuhn	Texarkana, Ark.
Lorris William Moormaw	Santa Anna, Calif.
Podge M. Reed	Moody, Texas
Frederick Wm. West, Jr.	San Francisco, Calif.

Mitchel Field, L.I., New York:

Robert Byron McClellan	Baton Rouge, La.
Francis Henry MacDuff	Brockton, Mass.
Arthur Y. Snell	Brockton, Mass.

Selfridge Field, Mich.:

George S. Buchanan	Palo Alto, Calif.
John S. Chennault	Montgomery, Ala.
Frank L. Higgs	Pullman, Wash.
William W. Jarrell, Jr.	Thomasville, Ga.
Baskin R. Lawrence, Jr.	Seneca, S.C.
Thomas E. Moore	Collettsville, N.C.
Lawrence R. Olmsted, Jr.	Brownsville, Texas
Lucien N. Powell	Carbon Hill, Ala.
Frank E. Rouse	Columbus, Ohio

Hamilton Field, Calif.:

Jess A. Smith	Woodrow, Colo.
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SAN ANTONIO DEPOT CHECKS UP PANAMA FLIGHT PLANES

When the mass flight of 10 Bombardment and 13 Pursuit planes, Langley Field, Va., to the Panama Canal Zone, arrived at Randolph Field, Texas, on February 14th, the Bombers were turned over to the San Antonio Air Depot for check-up and conditioning for the remainder of the flight. The Depot bent its utmost effort to the task, working continuously day and night on 8-hour shifts, and on the evening of February 20th the planes were delivered back to Randolph Field.

Lieut.-Colonel J.E. Houghton, the flight commander, and other officers of the flight were visitors at the Depot during this activity.

In the preparation of these Bombers, the Wright Aeronautical Corporation sent its service representative, Mr. Sonner, to the Depot to assist in every way possible in the work.

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OAK LEAF CLUSTERS TO CAPTS. STEVENS AND ANDERSON

Announcement was recently made by the War Department of the award of the Oak-Leaf Cluster to the Distinguished Flying Cross to Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, the citations accompanying same being as follows:

"ALBERT W. STEVENS, Captain, Air Corps, United States Army.

For extraordinary achievement as Commander and Scientific Observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight which started from the vicinity of Rapid City, South Dakota on November 11, 1935, ascended to the greatest height ever attained by man, and successfully landed near White Lake, South Dakota, with the scientific equipment and the valuable records it contained intact. Captain Stevens displayed a steadfastness of purpose, a thoroughness of preparation and professional attainments of the highest character in the execution of this flight. To his scientific knowledge may be attributed in large measure the acquisition of valuable data regarding the realm of the stratosphere."

"ORVIL A. ANDERSON, Captain, Air Corps, United States Army.

For extraordinary achievement as pilot and assistant scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight which started from the vicinity of Rapid City, South Dakota, on November 11, 1935, and successfully landed near White Lake, South Dakota, with the scientific equipment and valuable records it contained intact. In performing

(Continued on page 5.)

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DETAILS TO AIR CORPS TECHNICAL SCHOOL

Special Orders of the War Department, recently issued, announced the detail of a total of 24 Air Corps officers as students to undergo courses of instruction at the Air Corps Technical School at Chanute Field, Rantoul, Ill. Eleven officers are scheduled to pursue the Airplane Maintenance Engineering-Armament course; ten, the Communications course and three will busy themselves with the Photographic course. These officers are under orders to report to the Commandant of the Air Corps Technical School not later than August 20, 1936, to begin their school work.

The officers assigned to the different courses are listed below, as follows:

Airplane Maintenance Engineering-Armament

- Captain Morris J. Lee (1st Lieut.) 77th Pursuit Squadron, Barksdale Field, La.
- Captain William P. Sloan (1st Lieut.) 13th Attack Squadron, Barksdale Field, La.
- Captain Sory Smith (1st Lieut.) 55th Pursuit Squadron, Barksdale Field, La.
- Captain Howard Moore (1st Lieut.) Operations Officer, Station Complement, Mitchel Field.
- Captain Norman R. Eurnett (1st Lieut.) 57th Service Squadron, Selfridge Field, Mich.
- Captain Morley F. Slaght (1st Lieut.) 56th Service Squadron, Selfridge Field, Mich.
- Captain Richard A. Grussendorf (1st Lt.) 37th Attack Squadron, Langley Field, Va.
- 1st Lieut. John C. Covington, Fort Bragg, N.C.
- 1st Lieut. Lester L.H. Kunish, Barksdale Field, La.
- 1st Lieut. Tom W. Scott, Randolph Field, Texas
- 1st Lieut. Hansford W. Pennington, Chanute Field, Ill.

Communications

- Captain F. Edgar Cheatle (1st Lieut.) 99th Bombardment Squadron, Mitchel Field, N.Y.
- Captain George F. Moody (1st Lieut.) 1st Bombardment Squadron, Mitchel Field, N.Y.
- Captain Thomas L. Bryan, Jr. (1st Lieut.) 40th Attack Squadron, Kelly Field, Texas.
- Captain Edward H. Underhill (1st Lieut.) 40th Attack Squadron, Kelly Field, Texas.
- Captain Walter E. Todd (1st Lieut.) 27th Pursuit Squadron, Selfridge Field, Mich.
- 1st Lieut. David H. Kennedy, Langley Field.
- 1st Lieut. Berkeley E. Nelson, Langley Field.
- 1st Lieut. Dean C. Strother, Barksdale Field.
- 1st Lieut. Nicholas E. Powell, Chanute Field.
- 1st Lieut. Edward S. Allee (2nd Lt.) 17th Pursuit Squadron, Langley Field, Va.

Photographic

- 1st Lieut. Andrew Meulenber, Scott Field.
- 1st Lieut. Henry K. Mooney, Barksdale Field.
- 1st Lieut. William E. Karnes, Chanute Field.

Of the above-named officers holding temporary increased rank, Captains Bryan and Underhill are relieved of such rank, effective August 16, 1936; Captains Lee, Sloan and Smith, August 17th; and the remaining officers, August 18th.

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NEW INSTRUCTORS AT AIR CORPS TACTICAL SCHOOL

Under Special Orders of the War Department, recently issued, six Air Corps officers now attending the Command and General Staff School at Fort Leavenworth, Kansas, and one attending the Air Corps Tactical School at Maxwell Field, Ala., are directed to report, upon the completion of their present course of instruction, to the Commandant of the Air Corps Tactical School for duty on the staff and faculty, viz:

Command and General Staff School students:

- Major Donald Wilson
- Captain Roland Birrn
- Captain Byron T. Burt, Jr.
- Captain Frederick von H. Kimble
- Captain Ralph F. Stearley
- Captain Hoyt S. Vandenberg

Air Corps Tactical School student:

- Captain James E. Parker
- oOo---

Oak Leaf Clusters to Capts. Stevens and Anderson
(Continued from Page 4)

this flight, Captain Anderson distinguished himself by extraordinary achievement, coolness, and confidence, in piloting the largest and the most heavily equipped balloon ever flown to a greater height than had previously been attained by man."

Captains Stevens and Anderson were awarded the Distinguished Flying Cross in October, 1934, for their participation in the First National Geographic Society-Army Air Corps Stratosphere Balloon Flight, which took off from the vicinity of Rapid City, S.D., on July 28, 1934.

The award of the Oak-Leaf Cluster takes the place of a second award of the Distinguished Flying Cross.

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FOOD DROPPED TO MAROONED ISLAND INHABITANTS

The 49th Bombardment Squadron, Langley Field, Va., on February 10th and 11th, dropped packages of food to the inhabitants of Tangier and Smith Islands who were in danger of starving, due to heavy ice floes in the Chesapeake Bay which prevented any assistance from reaching them by water. Five trips were made, and a total of approximately 5,000 pounds of food was dropped. Captain Harvey, Lieut. Kilpatrick and Flying Cadet Cochran were the pilots.

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The artistic cover design featuring this issue of the NEWS LETTER was drawn by Miss Jane Wyatt, 15-year old daughter of the late Lieut. John A. Wyatt, Air Corps, and niece of Captain James F. Powell, Air Corps, now stationed at Randolph Field, Texas. Lieut. Wyatt lost his life in an airplane accident July 23, 1925, while flying between Luke and Wheeler Fields, Hawaii.

Our cordial thanks are extended to Miss Wyatt, and it is hoped that she will be a frequent contributor of cover designs for the NEWS LETTER.

THE MULTIPLEX AERO PROJECTOR

Aerial mapping and surveying is but one of several important activities which has resulted from the development of aircraft. As adjuncts to the multi-lens aerial camera, which photographs territory lying within range as the airplane flies, are other necessary items of equipment, such as the transforming printer and the Multiplex Aero Projector. The latter equipment, which has been under test at Wright Field, consists of several projection cameras mounted on a horizontal bar. These cameras are duplicates on a smaller scale of the aerial camera used to take the photographs. They may be shifted along the bar to correspond to the movement of the airplane during the interval between exposures. They may be raised and lowered to correspond to changes in altitude of the plane in flight, and they may be tipped and tilted to correct for the lack of horizontalization of the taking camera at the instant of exposure. In short, they may be shifted in such a manner as to duplicate the camera stations in the air from which the aerial photographs were taken.

Within these small projecting cameras are placed small diapositives which are reductions of the original negatives of the aerial photographs. Diapositives are positives printed on glass and are so called to distinguish them from glass-plate negatives.

Behind the lens of these cameras is a light and a light condenser similar to that of an ordinary projecting lantern. The diapositives are projected onto the table beneath the cameras and, when the aerial camera stations have been duplicated along the horizontal bar, the intersection of the rays of light from the various cameras reproduces a model of the surface of the earth covered by the photographs.

Inasmuch as there is no actual physical model, but only a spatial one, it is necessary to resort to another means for viewing the points of intersection of the rays of light emanating from the small projecting cameras. This is obtained by inserting colored filters in the cameras, thereby causing alternate cameras to project red and blue-green images. Thus projector No. 1 may project a red image; No. 2, a blue-green; No. 3, a red image, and so on. Since the areas projected overlap on the board as they did in nature, it is necessary to view them through glasses of colors complimentary to the colors in which the images are projected. Colored spectacles are provided for this purpose. One eye of the spectacle is red, the other is blue-green, corresponding to the colors in which the images are projected, and in which the spatial

model of the earth is built up. When this has been accomplished, a complete model of the earth covered by the photograph may be viewed in the machine as shown in the second photograph.

Since it is desired to compile an accurate map from this spatial model, a drawing mechanism and a means of measuring vertical heights must be introduced. This is accomplished in a single drawing table shown in the photograph of the Multiplex machine. The index mark is a small pin point of light in the center of the opaque table. It may be caused to move up and down by a vertical screw in the back of the stand. The distance this small table (and the pin point of light) is raised and lowered is a function of true differences in elevation on the earth's surface and may be converted into feet by a simple transformation.

The opaque table may be raised and lowered within the stereoscopic model, and when viewed through the colored glasses the points of intersection of the rays of light from the projecting cameras may be readily distinguished as the surface of the stereoscopic model.

With a small amount of practice, it is possible for an operator to set the index mark at a given elevation, bring it into contact with the ground (that is, the surface of the stereoscopic model) and draw contours. It is equally simple to draw planimetric detail.

With these two instruments, the Corps of Engineers working at Wright Field is able definitely to speed up the producing of topographic maps of any required territory.

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LECTURES FOR NATIONAL GUARD AIRMEN

Hereafter a field order will mean far more than a mere bunch of words typed on a piece of paper to officers of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane.

Officers in the squadron will also have a clearer conception of radio communications, artillery fire adjustment and the duties of Observation aviation. During January, lectures in the actual writing of a field order were given by Captain Lawrence Sherman, who at the end of the month gave a written examination on questions approved by Major Robin A. Day, Commander and Instructor of the squadron. Every officer knew the reasons for five paragraphs, what each contained, the standard abbreviations, what should and what should not be punctuated.

A month of lectures is being given by Lieut. Charles O. Holter, Radio Officer, on the use of the new type radios. Installation of the new ground station set, which arrived recently, has not been possible because of some missing connections. The radio course includes the various methods of adjusting fire for the Field Artillery.

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At the conclusion of each Sunday lecture, pilot-observer teams are sent out to conduct puff target adjustments. In March, the 41st Division Aviation will start its schedule of weekly communication missions with the 148th Field Artillery of Coeur d'Alene, Idaho.

Review of Observation aviation text has been found advisable with the receipt of the new text on Observation aviation. Captain Robert W. Owen is lecturing on the new text, with an examination to follow at the end of February.

With the advent of spring weather, the subject of aerial photography will be specialized upon by Lieut. Hillford R. Wallace, Photographic Officer. It is proposed that every pilot and observer shall photograph vertical strips before going to the annual encampment at Fort Lewis, Washington, in June.

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WEATHER FLIGHTS BY SCOTT FIELD PILOTS

The 15th Observation Squadron has been making the U.S. Weather Bureau "weather hops" daily at Scott Field, Belleville, Ill., since July 1, 1934. During the period July 1, 1934, to February 15, 1936, 595 days in all, a total of 465 flights was made. Although the average altitude of the flights was about 18,000 feet above sea level, two flights, one by Private Arnold T. Johnson and the other by 2nd Lieut Paul H. Meng, were made above 21,000 feet. O-19 planes were used until recently, when a BT-2B plane was equipped to carry on the daily flights. Two-way radio phone communication was used. In summer, the flights were scheduled for 3:15 a.m. In winter, however, they were scheduled for daylight.

During the period above mentioned, only one plane was damaged, and it was a complete loss. This plane was flown by Captain Raphael Baez, Jr., on October 12, 1935. Captain Baez encountered a regional fog and was forced to "bail out" when his plane ran out of fuel. It is to be noted that his plane, an O-19, had 80 gallons of gasoline before it was warmed up and that he flew 4 hours and 31 minutes before running out of fuel.

The purpose of these flights is to secure "air mass" data daily to further the knowledge of air conditions at high altitudes and its relation to existing weather. The weather plane carries an aerometeorograph, a combination of four different instruments, on its right wing. The aerometeorograph has 4 red-linked needles, one for barometric pressure, one for relative humidity, one for temperature and one for time, which make a continuous record on a single chart during the flight. From this chart the plane's maximum altitude can

be determined. There are two aerometeorographs at the U.S. Weather Bureau Office at the field. While one is being used, the other is being checked for accuracy. The time required to check one is thirty days.

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ALL IN A DAY'S WORK AT HAWAIIAN AIR DEPOT

Having left home at 6:30 a.m., walked a few blocks, ridden in an automobile from ten to fifteen miles, presented passes for inspection of the Marine Guard at the Pearl Harbor entrance, we arrive at the Coal Dock at 7:10 a.m., just as the "Manuwai" (Waterbird), the commercial ferry, docks. A roaring of motors, and an array of anywhere from one to thirty school busses, private automobiles, motorcycles and army trucks driven by sleepy-eyed drivers, unload. About 250 officers, enlisted men and civilian employees rush on to the boat, closely followed by a train of oil trucks, produce trucks and other vehicles Luke-Field bound. With a clanging of bells, tooting of whistles and a mighty shudder, the Waterbird shoves off in an ungraceful manner and as much unlike any waterbird as one can imagine.

Groups gather to discuss topics of the day. During the ensuing 15 minutes, wars are fought, presidents elected and the Army reorganized. A casual examination of the groups makes it difficult to imagine that we are in an integral part of the United States. Hawaiians, Japanese, Chinese, Koreans, Portuguese and, can I believe my eyes? Yes, suh! Sho nuff, a pure Alabama negro!

Someone calls "shark," and, although more or less a common sight, a scramble to the side of the boat is made. False alarm - another practical joker or a malihini's (newcomer) imagination. Recently, one of the malihinis called attention to a turtle which turned out to be a large jellyfish with a coconut floating alongside.

Terrific blasts of whistles - the Navy is pulling out for maneuvers. Submarines glide gracefully by, trim cruisers, and as we near the Luke Field side, a terrific roar and the first of a squadron of sea-planes leaves the water a few hundred yards away, followed by another and another. At 7:30 we land at the Luke Field dock, and another day is begun.

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The News Letter is indebted to the Air Corps Training Center, Randolph Field, Texas, for the photograph of Class 24-B, graduating from Kelly Field on February 15th, last, which appears as an insert in this issue. Reproduced as it was on the rotor-print duplicating machine, the clearness of this picture testifies to the skill of the photographic and printing shop personnel at the Training Center.

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PROMOTION OF NONCOMMISSIONED OFFICERS

A list is given below of Staff Sergeants placed in the order of their standing on the eligible list for promotion to the grade of Technical Sergeant, Air Corps, effective January 1, 1936. This list contains only the first 250 names on the qualified list. The complete list carries the names of 698 men.

No.	Name	No.	Name	No.	Name
1	Camire, Henry*	65	Fuecker, Harry N.	129	Dossett, Elbert
2	Quist, John	66	Milliard, Peter L.	130	Tuffly, Edward W.
3	Adams, Hurschell B.	67	Violock, Adam J.	131	Boyles, James M.
4	Bergman, Henry A.	68	Oram, George H.	132	Sarem, Jack
5	Hudson, Edward J.	69	Horton, Dewey	133	Chatham, Charles W.
6	Simon, Max	70	Roecke, Myron	134	Kidd, Harvey O.
7	Ball, Lyle	71	Williams, John M.	135	Winfrey, Oliver O.
8	Silberman, Samuel	72	Barlow, Robert L.	136	Caleagne, Frank A.
9	Emerson, Clazd	73	Gardner, Edgar W.	137	Hampton, Jack
10	Lawrence, Frederick	74	Kacziba, Alexander	138	Morris, William C.
11	Biniakiewicz, Mike	75	Moss, Grover C.	139	Washburn, Emory E.
12	Eggeling, George A.	76	Caldwell, James M.	140	Senter, Herman F.
13	Polaska, Edward P.	77	Kirby, Louis A.	141	Gorman, Andrew J.
14	Hoyle, John T.	78	Schantel, August	142	Eanes, Louis V.
15	Risenberg, Max	79	Walton, Joseph L.	143	Benevides, Joseph H.
16	Fry, Walter W.	80	Chaturich, Michael	144	Ross, Delano W.
17	Higbie, Elza L.	81	Gorin, Maurice	145	Jenson, Oluf T.
18	Norris, Robert S.	82	Peacock, Floyd H.	146	Wendt, Howard
19	Culver, Clarence G.	83	Elder, James C.	147	Eldridge, Russell
20	Robinson, Lee	84	Morris, Reuben B.	148	Leonard, Dale F.
21	Moran, John F.	85	Hoffman, Leonard L.	149	McLish, William B.
22	Hoffman, William	86	Simpson, Walter	150	Ellis, Edwin E.
23	Jusko, Edward A.	87	Malkemus, George D.	151	Hansen, Henry P.
24	Newman, Willie B.	88	Boudreaux, Henry D.	152	Schultz, Steve J.
25	Smith, Forrest	89	Monroy, Phillip P.	153	Kannolt, Harold B.
26	Bikle, Charles R.	90	Jernigan, William H.	154	Chaudron, Norvelle
27	Ackerly, Horace R.	91	Tucker, James R.	155	Hammack, Robert W.
28	Taylor, William R.	92	Fagan, Luther W.	156	Huffman, Ernest J.
29	Roberts, Fred A.	93	Greene, Robert H.	157	Anderson, Chauncey L.
30	Hutchens, Payton E.	94	Williams, Leonard	158	Langston, Wilbur E.
31	McFadden, Arvel	95	Willett, Ray E.	159	Carr, George W.
32	Berend, Victor	96	Hurst, Frank	160	Martini, Henry
33	Davis, John L.	97	Wolfe, Jack	161	Criss, Karl W.
34	Cobb, Besola	98	Darcy, Lawrence J.	162	Brown, Walter D.
35	Wendell, Charles E.	99	Kramberg, Joseph	163	Burton, Jack
36	Mauo, John A.	100	Hicks, Harry	164	Torney, Thomas P.
37	Fretivnak, Michael	101	Mehnert, William	165	Purkins, Gerald M.
38	Passwaters, Francis M.	102	Sloan, Miles B.	166	Weeks, Edward
39	Tooney, Thomas F.	103	Blesh, Earl S.	167	MacDermott, William K.
40	Balacke, Harry	104	Benson, Harold P.	168	Schuette, Alfred A.
41	Franklin, Henry L.	105	Dearborn, James E.	169	Weiss, Joseph
42	Falls, Clyde L.	106	Nipper, Eli B.	170	Riviere, Jean E.
43	Jones, George S.	107	McClellan, Edwin J.	171	Peterson, Cayus P.
44	Crocker, John S.	108	Marshall, John A.	172	Chevenitz, Frank J.
45	Halsey, Andrew J.	109	Davis, Golden R.	173	Ward, Leland S.
46	Wildman, Armstead A.	110	Bennett, Paul D.	174	Weeks, Alvin C.
47	Capps, Dwight M.	111	Fredericks, Joseph M.	175	Jolly, Arthur
48	Brown, Jacob S.	112	Hynes, Samuel	176	Weltz, William M.
49	Rice, Robert E.	113	Silva, Manuel	177	Docney, John J.
50	McGraw, Mathew A.	114	Yocum, Johnny V.	178	Walsh, Bernard A.
51	Gilbert, Claude M.	115	Platt, Graham	179	McChee, Lester L.
52	Kerr, Raymond	116	Jones Thomas A.	180	Martin, Paul H.
53	Hooper, Asa C.	117	Martin, Morris	181	Norris, Walker W.
54	Shaw, Carrel L.	118	Hoppe, Helmar B.	182	Newland, Gus V.
55	Carr, Edward L.	119	Norich, Albert I.	183	Hagan, George M.
56	Richard, George M.	120	Barkhurst, Frank M.	184	Warren, Henry M.
57	Joyner, Charles	121	Laquatra, Leo	185	Shoellhorn, Erhard
58	Banas, Walter E.	122	Aldrich, Guy A.	186	Ray, Floyd E.
59	Rozburski, Michael	123	Gurley, Bert E.	187	Terrell, Harry A.
60	Cheatham, Roy D.	124	Smith, Anthony	188	Visbal, Germain A.
61	Johnson, Karl R.	125	Hygh, Relliford	189	Meeks, John D.
62	Cross, Charles M.	126	Richardson, Homer L.	190	Gregg, Emmett L.
63	Rowen, Halstead J.	127	Moore, John H.	191	Harth, George J.
64	Sheffield, William K.	128	Deming, John B.	192	Farnes, Max

*Appointed Technical Sergeant January 2, 1936.

No.	Name	No.	Name	No.	Name
193	Charbaugh, Michael E.	213	West, Henry L.	232	Pond, Everett L.
194	Brock, Morris	214	Abromitis, Jacob	233	Ciphon, Paul W.
195	Coulla, Jack	215	Flores, Albert	234	Feluso, Tony J.
196	Novak, Louis W.	216	Bryan, Hugh	235	Nielsen, Jean
197	Cuttierrez, Michael E.	217	Ferguson, Homer E.	236	Hinck, Reuben F.
198	Carr, James W.	218	Slattery, Houston	237	Powers, Barron C.
199	Hodges, Herbert P.	219	Simpson, Johnnie S.	238	Prince, Kerman
200	DeFrod, Lyman	220	Williamson, Henry	239	Kelly, Bernard F.
201	Falk, John A.	221	Hall, Bolton	240	Edmondson, Albert B.
202	Smith, Sigsbee J.	222	Michael, Edward	241	Browning, Earl H.
203	Caris, John A.	223	Hunsberger, Horace K.	242	Meyers, Harry
204	Delaney, Samuel H.	224	Kolb, Peter, Jr.	243	Barnhill, Jesse J.
205	Castlemaine, Earl W.	225	Mobley, Emmett A.	244	Greene, Charlie H.
206	Morrison, Jay P.	226	Collins, Jacob	245	Hollis, Claud D.
207	Chestnutt, Herman L.	227	Martin, Troy V.	246	Shelley, Verl A.
208	Armbruster, Otto	228	Dwyer, Charles L.	247	Oliver, Wesley K.
209	Tetu, Dona E.	229	Laza, Joseph C.	248	Kulkey, Loyd
210	Beckham, Reuben S.	230	Fodraza, Walter H.	249	Illy, John
211	Bishop, Chalmers N.	231	Klapak, Andy	250	Knowles, James R.
212	Warren, Luther				

The delay in the publication of this list has been caused by the receipt of inaccurate data as to total length of Army service of a large number of Staff Sergeants, necessitating a thorough check with available records in order to determine the proper place of each man on the list.

It will be noted that the names of a number of noncommissioned officers appear on the list, especially near the top thereof, who were not carried on previous lists. This condition is due principally to the fact that such men, appointed Staff Sergeants in 1930, have recently acquired the minimum of five years' service in the third or higher grade in the Air Corps to

establish eligibility for the grade of Technical Sergeant, Air Corps. Their total length of Army service thus places them ahead of Staff Sergeants with less service. The large increase in the total number of men on the qualified list is also probably due to this same condition.

Those Staff Sergeants appointed in 1931 will likewise acquire five years' service in grade in 1936, and, if subsequently recommended for promotion, will be placed on next year's qualified list in their proper places according to total length of Army service. There will thus not be so many Staff Sergeants acquiring the five years' service in grade after 1936.

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COAST ARTILLERY OF BOTH REGULARS AND RESERVES PARTICIPATE IN MARCH FIELD MANEUVERS

Expressing themselves as being satisfied with their week end of field service, 48 officers of the 977th Coast Artillery, a Los Angeles antiaircraft Army reserve unit, returned to their homes in Los Angeles Sunday afternoon, February 9th, after spending Saturday night and Sunday morning in the vicinity of March Field, Calif. They were the guests of the 63rd Coast Artillery (antiaircraft) which carried them from Fort MacArthur for the week end of instruction. The regulars were commanded by Lieut.-Colonel R. Duncan Brown, and the reservists were in charge of Lieut.-Colonel A.J. French, unit instructor of the 977th Coast Artillery and a member of the Regular Army. The regimental commander of the 977th was Lieut.-Colonel E. A. Evans.

Three hundred enlisted men and ten officers of the 63rd participated in the maneuver. It covered a 120 degree triangle with March Field as the apex and Corona and Elsinore as the bases of the two legs. Entitled "Antiaircraft

Defense of March Field," the problem used twelve positions, employing four 3-inch guns and eight .50 caliber machine guns.

When the five searchlights and five sound locators were set up in position in the triangle, Lieut. Harry Crutcher flew a Martin Bomber from the direction of Corona, making every effort to dodge the searchlights scattered through the area. When the sound locators picked up the motor noises they relayed the information through comparators to the searchlights which pinned down the Bomber at the convergence of their 800,000,000-candle power beams.

With the target clearly defined before them, the ground guns silently trained their sights on the night raider and technically brought him to earth. The plane was flying at a speed of about 200 miles an hour through the March Field skies.

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Two Maxwell Field officers are under orders to report for duty next August as students at the Army Industrial College, Washington, D.C., viz: Major John I. Moore (Captain) and Captain Russell L. Maughan, Air Corps. Both officers are on duty at the Tactical School, Captain Maughan being a student thereat.

Effective February 15, 1936, Lieut.-Colonel Walter R. Weaver, Air Corps, was relieved as Chief Inspector, G.H.Q. Air Force, Langley Field, Va., and assigned to duty as Station Complement Commander, Station Complement, Langley Field. During the period of this duty assignment, this officer will hold the temporary rank of Colonel.

Of late the people of this nation have manifested more than usual interest concerning the question "How can we avoid war?" The seriousness with which this question is being debated by people in all walks of life may be attributed, no doubt, to the war now in progress in Africa, to the general spirit of unrest which has prevailed for some time in foreign countries, and to other factors too numerous to mention here.

One popular radio entertainer, sensing the growing interest in this question, offered a very substantial prize to the person submitting the best answer to the above question. It is understood that thus far over 200,000 persons have submitted their ideas on the subject. Surely, out of this vast storehouse of public thought there should emanate many valuable ideas for our statesmen to ponder over.

A prominent figure in public life, the Hon. John J. McSwain, M.C., Chairman of the House Military Affairs Committee, used the theme "How can we avoid war?" for his address on February 9th, last, at Mecca Temple, New York City.

Expressing his firm belief in adequate preparedness, Mr. McSwain stated that the causes of war may be generalized under the following heads:

- (a) National, racial, religious, rivalries, jealousies, and envy.
- (b) Commercial rivalries and competitions.
- (c) Industrial competitions, causing unemployment, dislocation of populations, and thus human misery and distress.
- (d) Mutual distrust based upon ignorance of each other, thus creating fear, and fear breeds armaments.
- (e) National greed for power and territorial expansion, being but the expression in a collective way of the individual and personal greed and ambition of individual citizens.

(f) Vaulting ambition of individual autocrats, formerly represented by rulers, kings, emperors, kaisers, and czars, and, in these very modern times, by dictators under different names, but seeking to exploit personal success and glory at the expense of the people's sacrifice and suffering, because the governments have been allowed to consolidate all powers in the hands of single persons, rather than having the power distributed among numerous representatives of the sovereign people who ultimately must do the fighting, the paying and the suffering in the event of war.

Mr. McSwain dwelt at length on the neutrality policy of this nation, involving the freedom of the seas; prohibition of the sale of implements of war to belligerent nations; keeping American citizens and American ships at home during the progress of a war overseas, thereby placing this country in a state

of virtual isolation. He also touched on various peace-promoting plans, such as requiring a popular vote or referendum before any declaration of war be made, except to prevent invasion; joining the League of Nations and entering into the World Court; complete disarmament among all nations; universal mobilization of manpower and resources; stopping profiteering in time of war, etc.

"America is fortunate in her geographical situation which determines her strategy," Mr. McSwain declared. "With an ocean on each side, and with friendly republics occupying both the North and South American Continents, to whom we have always played the part of big brother, we contemplate nothing but a defensive position to maintain our own peace and to prevent interference with the republican institutions of our sister republics, an obligation we assumed in 1823 under the Monroe Doctrine. With the exception of the War of 1812, which was a mere distant repercussion of the Napoleonic wars, and with the further exception of the war with Spain in 1898, which was but a logical development of the Monroe Doctrine, we have had nearly 150 years of peace with European powers, with the exception of our war against the German Empire. But what of the future? Multiplied speed by steamships, rapid communication by telegraph, telephone, and radio, with aircraft capable of spanning the Atlantic Ocean in about 15 hours, America's happy isolation from Europe and her turmoils is about to cease. With our expanded commerce, with our vast financial interests in European countries, nothing European can long remain a matter of indifference to us. All these numerous points of contact increase our chances for collision with the interests and finally the forces of the larger nations of Europe. In view of this changed position, nations though separated by oceans, now have almost a common frontier, and cities and industrial areas even located far inland from our coasts are now upon the front line and are subject to attack from the air by a hostile air fleet. This spells but one conclusion for America, and that is to have an air force at least equal in numerical strength and more efficient if possible in personnel and in machine performance than that of any other nation.

"The only defense against air attack is air defense. According to all human probability, based upon the experience of history, America may have to face a combination of two or more powerful fighting nations. In order to reach us they will be drawn far from their base but nevertheless, they can accomplish great destruction of life and property, and it remains for us to be prepared to beat down any such hostile air fleet. No longer are mere seaport towns and cities alone inter-

ested in problems of defense. Every city and industrial center, however far located from salt water and a land frontler is a possible objective of air attack. This makes the whole Nation vitally concerned with the problems of defense. Fighting is no longer a matter for the soldiers in the air or upon the ground or the sailors on the sea. War becomes a paramount peril and indescribable hazard to the whole civilian population, and every man, woman and child, of every age, business, station in life, or calling, is vitally concerned with two persistent problems. These are, first, to see that America pursues such course as may not provoke animosity, desire for revenge, and therefore invite attack from any other nation or combination of nations. Second, to be so prepared on land, on water, and especially in the air that if any other nation or combination of nations, disregarding our good will, ignoring our desire to be friends, should attack us for any cause, actual or imaginary, then we will be prepared to defend our people and our possessions, even as the father should be prepared to defend the home of his wife and children against the midnight burglar and assassin."

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THE NEW ENGLAND WINTER TEST FLIGHT An Enlisted Man's Observations

Here we are, back home again in our barracks. The 1936 winter test flight is over. Have we learned anything this year? The officers say we have. I think we have, too. Being an enlisted man with not much rank, I am supposed to just look and listen, yet I think a few faults, which probably no one else noticed, could be discussed at this time.

As for clothing, the mechanics trudged around in the cold, working on the ships, and wearing one-piece, two-piece, winter flying suits, and everything else that they could pile on their bodies. They were warm, maybe, but the clothing was too clumsy and bulky to allow free movement of the limbs. Why not have them wear a heavy knitted wool suit (we now have some of them in stock at several fields, I understand) with a common suit, mechanic's, over it? This combination would be just as warm, much cheaper to replace if lost or destroyed, and would be more compact and easier to "move around in."

Ever work on an engine in the cold? Did your fingers get cold? Let's have some plain goatskin gloves and some regular white canvas gloves to work in. Heavy leather gauntlets can't be worn when doing mechanical work on a ship. They are too big and clumsy, so most of the men work bare-handed.

That would fix up the ground crew, I believe.

"A Polarbear."

WING FLOATATION BAGS OPEN DURING FLIGHT

Through skillful piloting, the 50th Observation Squadron, Luke Field, T.H., was saved an O-19 airplane which might have been lost. Lieut.-Colonel Asa N. Duncan, the post commanding officer, experienced what is believed to be the first incident where two wing floatation bags opened during flight.

Immediately following the take-off and when the airplane was about 75 feet off the ground, both floatation bags inflated. When released, the metal cover of the left bag housing struck the left aileron, damaging it badly.

Col. Duncan immediately attempted to gain altitude, and after 15 minutes gained 2,000 feet. During the climb the left floatation bag was torn loose from its connector pipe and tie flaps, and fell from the airplane. At the same time the right bag began to deflate. The pilot, after assuring himself that the controls were fairly free, made a perfect landing at Luke Field.

Investigation by representatives of the Hawaiian Air Depot, the Squadron and Station Engineer Officers, resulted in the conclusion that the mechanical trigger cam and spring on the cutter release valve was defective. Tests disclosed that the vibration of take-off could release the spring.

The 50th Observation Squadron accomplished Unsatisfactory Reports recommending further research in the use of this equipment.

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PERSONNEL NOTES, O.C.A.C.

The following Air Corps officers recently reported for duty in the Office of the Chief of the Air Corps, with assignments, as set forth below:

Colonel Rush B. Lincoln as Chief of the Personnel Division. Col. Lincoln up to recently was on duty at the Headquarters of the 1st Corps Area, Boston, Mass. His present assignment is not new to him, as he was Personnel Executive and Acting Chief of the Personnel Division during the War and later Chief of the Personnel Division to June, 1922.

Lieut.-Colonel H.H.C. Richards to the Information Division. Previous to this assignment, Col. Richards was on duty at the Advanced Flying School, Kelly Field, Texas, as Assistant Commandant.

Major Arthur E. Easterbrook to the War Plans and Training Division. As Executive Officer, Air Corps Training Center, Randolph Field, Texas, up until recently, Major Easterbrook held the temporary rank of Lieut.-Colonel. He is one of a very few officers remaining in the Air Corps who hold the unofficial title of "Ace." He is credited with the destruction in combat during the war of six enemy airplanes.

NEW RADIO EQUIPMENT FOR THE AIR CORPS

1. To acquaint all concerned with the policy of the Chief of the Air Corps relative to fixed radio aids for the Air Corps and the steps being taken to provide these aids, it is deemed advisable that the following information be published:

2. Decisions as to the stations on which equipment is to be installed take into consideration the present available aids, such as Department of Commerce installations, commercial stations including broadcast stations, and Army stations.

3. Radio aids for navigation, homing, weather broadcasts, instrument landing, and intermediate frequency communication for traffic control will be provided as rapidly as funds become available. These aids augment those now provided by the Department of Commerce and will be operated under regulations which parallel those now used by that Department.

4. The equipment will be identical with that used by the Department of Commerce and will be installed in an identical manner.

These aids are tentatively set up for installation at the following points:

Dept. of Commerce type BRA stations

*Maxwell Field
Dryden, Texas;

Dept. of Commerce type MRA stations

*Langley Field	Fort Riley
Pope Field	Fort Sill
Mitchel Field	Hatbox Field
*Patterson Field	Kelly Field
Selfridge Field	Hamilton Field
Chanute Field	Sunnyvale
Scott Field	

*Note - Being procured with F.Y. 1936 funds.

Both BRA and MRA stations require the same size plot, a minimum of 600' x 600'. Both have five 125' vertical insulated towers as radiators, the same size building at the center of the plot and the same feeder systems. The transmitters for the BRA stations are 800 watt crystal control, and for the MRA stations 150 watt crystal control. The plots should be fairly level and clear of all obstructions, should be located a fair distance from large metallic objects which might distort the emitted radio pattern and where the 125' towers do not constitute a hazard to flying.

Dept. of Commerce type ML stations

Hensley Field and Sloan Field

These stations require a clear level plot at least 300' x 300'. The antenna system consists of crossed loops on 50-foot wooden poles. The transmitters used are crystal control 150 watt units, but because of the antenna system, the station emits a signal effective only for marking the locality.

5. Instrument landing equipment will be supplied the following stations. These will operate in the same manner

and on the same channels as the Department of Commerce uses. All other Army landing equipment is for training purposes only and will operate on frequency assignments made by the Chief Signal Officer in bands available to the Army.

Mitchel Field	March Field
Langley Field	Hamilton Field
Chanute Field	Scott Field
Selfridge Field	Patterson Field
Maxwell Field	Dryden, Texas
Barksdale Field	

6. Airport transmitters for the control of air traffic within ten minutes or thirty miles of the airdrome will be supplied the following stations. These transmitters having an allowable radiated power of 15 watts, will be crystal controlled, and set on 278 KCS.

Mitchel Field	Langley Field
Patterson Field	Selfridge Field
Scott Field	Chanute Field
Fort Leavenworth	Maxwell Field
Barksdale Field	Hatbox Field
Kelly Field	March Field
Dryden, Texas	Hamilton Field
Sunnyvale	

7. For point to point, air alert, air-plane communication, etc., a new high frequency net is being established using 400 watt, ten channel, crystal control transmitters. These sets are now on contract and will be set up at the following stations:

Eastern Division

Mitchel Field
Bolling Field* (a)
Langley Field
Pope Field
Pittsburgh
Middletown

Central Division

(a) Patterson Field*
Chanute Field
Selfridge Field
Scott Field
Fort Leavenworth
Fort Riley
Already supplied.

*Control - (a)

Southeastern Division

Maxwell Field*
Barksdale Field
Chapman Field
Candler Field
Murfreesboro, Tenn.

Southwestern Division

Kelly Field*
Tucson, Arizona
Biggs Field
Dryden, Texas
Sloan Field
Hensley Field
Hatbox Field
Fort Sill

Western Division

*March Field (Control)
Boeing Field
Pearson Field
Medford, Oregon
Hamilton Field
Sunnyvale

*May be moved to Hamilton

8. These latter sets will replace old and obsolete intermediate frequency equipment now installed at the various stations and being used exclusively for Air Alert communication. They will be installed for Air Alert work only and will not be used for administrative traffic. Equipment now being used for administrative traffic will continue to be so used.

9. In addition to the foregoing, a receiver and loud speaker will be provided

(Continued on page 18)

B I O G R A P H I E S

COLONEL CHALMERS G. HALL, AIR CORPS

Colonel Chalmers G. Hall, Air Corps, Chief of the Supply Division, Office of the Chief of the Air Corps, dates his affiliation with the aviation branch of the Army from October 20, 1917, when he was placed on active duty as a Lieut.-Colonel, Signal Corps, and delegated the task of organizing motor mechanics troops. He was promoted to Colonel, Signal Corps, December 29, 1917, and up to the end of February, 1918, commanded the Signal Corps Camp and the 4th Regiment of Motor Mechanics at Camp Hancock, Ga.

After a brief period of temporary duty in Washington, D.C., in the Office of the Chief Signal Officer, in connection with the organization of personnel for Air Service Production Center No. 2, A.E.F., he sailed for duty overseas, arriving in England on July 31, 1918. For several weeks he commanded the 4th Motor Mechanics Regiment at Air Service Production Center No. 2, Romorantin, France. He was then assigned to the Aviation Office, Base Section No. 3, Service of Supply, London, England. While on this assignment he was on temporary duty at various Air Service A.E.F. activities at Paris, Tours, Romorantin and Chaumont, France.

From November 1 to 11, 1918, Colonel Hall was on duty with the Night Bombardment Section, Air Service, A.E.F., London, and thereafter, until his return to the United States, as Commanding Officer, American Acceptance Park, Manchester, England.

On March 12, 1919, Colonel Hall was assigned as Chief of Air Service Procurement, Supply Division, Office of the Director of Air Service, Washington. He received the commendation of the Director of Air Service for his work in organizing the Motor Mechanics Regiments of the Air Service, the morale of which was declared to be of the highest standard, and for the efficient service he rendered overseas.

Assigned to duty in July, 1921, as a student at the Army Balloon School at Ross Field, Arcadia, Calif., he graduated therefrom the following September, and was rated "Balloon Observer," October 3, 1921. He next took a course of instruction at the Airship School at Langley Field, Va., and received the rating of "Airship Pilot" as of February 10, 1922.

For slightly over a year, Colonel Hall was in command of Scott Field, Belleville, Ill., and in March, 1923, he was assigned for further airship training at the Naval Rigid Airship School at Lakehurst, N.J. After completing the course, he remained on duty at Lakehurst for a year as Observation and

Liaison Officer. In July, 1926, he was assigned as Air Officer of the 6th Corps Area, Chicago, Ill.

In August of the following year, Col. Hall began duty as a student at the Army War College, Washington, D.C., graduating in June, 1928, following which he was assigned to the 78th Division, Organized Reserves, with headquarters at Newark, N.J. He served as Unit Instructor, Chief of Staff and Supply Officer of this Division and as Unit Instructor of the 303rd Engineers. In November, 1933, he also assumed the duty of District Commander, Civilian Conservation Corps, District No. 1, State of New Jersey.

On October 1, 1935, Colonel Hall was assigned to temporary duty as Chief of the Buildings and Grounds Division, Office of the Chief of the Air Corps, and on January 15, 1936, was designated as Chief of the newly organized Supply Division, Office of the Chief of the Air Corps.

Colonel Hall was born February 8, 1875, at Salisbury, N.C. He graduated from the United States Military Academy in 1897, and was commissioned a second lieutenant of Cavalry. He was promoted to 1st Lieutenant, February 2, 1901; to Captain, September 19, 1903, and to Major, May 15, 1917. He graduated from the Army School of the Line in 1912.

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LIEUT.-COLONEL ROY M. JONES, AIR CORPS

Prior to his entry into the military service, Lieut.-Colonel Roy M. Jones, Air Corps, Executive, Office of the Chief of the Air Corps, had ten years' experience in civil life as an electrical engineer. He was born at Annapolis, Md., January 3, 1886, and graduated in 1910 from St. Johns College, Annapolis, Md., with a B.S. degree in engineering.

Commissioned a second lieutenant of Infantry, November 30, 1912, he was promoted to 1st Lieutenant, July 1, 1916, and to Captain, May 15, 1917. He was detailed to the Signal Corps from the Infantry in October, 1916, and was on duty at the Headquarters of the Southern Department, San Antonio, Texas, as Assistant to the Department Signal Officer until he was ordered to Washington, D.C., in June, 1917, to duty in the Finance and Supply Division, Office of the Chief Signal Officer. He was promoted to Major, Signal Corps, September 29, 1917.

During 1917, when the Equipment Division of the Signal Corps was established, Col. Jones was assigned to duty in the Executive Department thereof. In January, 1918, he was appointed Assistant Chief of the Executive Staff, Bureau of Aircraft Production. He was promoted to

Lieut.-Colonel, Air Service (Production)
August 21, 1918.

Transferred to the Office of the Director of Air Service in March, 1919. Col. Jones was on duty as Assistant to the Chief, Air Service Procurement, until the latter part of October of the following year, when he was assigned to undergo lighter-than-air training at the Balloon School at Ross Field, Arcadia, Calif. After completing the required tests and receiving the rating of Balloon Observer, as of March 29, 1921, he remained at Ross Field as Executive Officer until July, 1921, when he returned to duty in Washington as Chief of Air Service Procurement.

In June of the following year, Col. Jones was transferred to the Middletown, Pa., Air Depot for duty as Officer in Charge of the Industrial War Plans Section. In February, 1923, he assumed the additional duty of Commanding Officer of the Air Depot.

From September to December, 1924, he was on duty at Brooks Field, Texas, and he was then transferred to Kelly Field, Texas, where he completed the Special Observers' Course at the Advanced Flying School, being rated "Airplane Observer" as of March 23, 1925.

Assigned to duty in the Panama Canal Department in April, 1925, Col. Jones served as Executive Officer of France Field and of the 6th Composite Group, at various times as Commanding Officer of the Post and Group, and as Acting Air Officer of the Panama Canal Department. Towards the end of his tour of foreign service, he served as Executive Officer of the Panama Air Depot.

Following the completion of his service in Panama, Col. Jones, for the next four years, was on duty with the Materiel Division of the Air Corps at Wright Field, Dayton, Ohio, as Chief of the Purchase Branch, Procurement Section.

In July, 1932, he was assigned as student at the Army Industrial College, Washington, D.C. His graduation in June of the following year was followed by his detail as student at the Army War College, Washington, D.C., from which he graduated in June, 1934. He was then assigned to his present duty in the Office of the Chief of the Air Corps as Executive.

BIG BIRD DROPS FOOD TO LITTLE BIRDS

In connection with the efforts of the Michigan Department of Conservation to prevent the starvation of pheasants, quail and other wild fowl because of their inability to obtain food on account of the deep snow, a Transport airplane from Selfridge Field, Mt. Clemens, Mich., piloted by 1st Lieut. Charles R. Anderson, Air Corps, and loaded with grain, was flown on February 15th over

advantageous points and the grain dropped thereat.

PURSUIT PLANES FERRIED TO SELFRIDGE FIELD

Sixteen Air Corps officers recently journeyed from their home station, Selfridge Field, Mt. Clemens, Mich., to the plant of the Boeing Aircraft Company, Seattle, Washington, to procure and ferry to their station P-26C Pursuit airplanes which were ready for delivery.

Officers departing for Seattle on February 6th were Lieut.-Colonel Ralph Royce, Majors Edwin J. House, Fred C. Nelson, George P. Tourtellot, Captain Emmett O'Donnell, Jr.; February 8th - Captains Leo H. Dawson, John F. Egan, Frank J. Coleman, 1st Lieuts. Murray C. Woodbury, David W. Hutchison; February 15th - Captains Clarence F. Hegy, Jarred V. Crabb, Norman R. Burnett, 1st Lieuts. Paul W. Blanchard, Jr., William J. Bell and Henry B. Fisher.

MORE SHORT WAVES FROM SCOTT FIELD

Scott Field, Belleville, Ill., has another amateur short wave radio operator and another short wave station. Private Ollis O. McIntire, 9th Airship Squadron, received a license to operate his station W9WGK, on 1867.5 kilocycles. Private McIntire was given instruction in short wave radio operation by Private Frank W. Brashears, 9th Airship Squadron, the operator of Scott Field's other amateur station, W9CJH. Both stations are on the air each evening.

TRANSFER OF AIRPLANES TO PANAMA

The 20th Bombardment Squadron, Langley Field, Va., on February 11th, transferred to the Panama Canal Department four B-6A type Keystone Bombers, which were scheduled to be flown to the Canal Zone by Air Corps pilots on duty there.

Due to the transferring of ships and equipment, the 35th Pursuit Squadron, Langley Field, has been kept very busy. The P-12F planes had to be inspected and made ready for their flight to Panama. These P-12's were replaced by P-6E planes; a change from the Pratt & Whitney engine to the Curtiss "Conqueror" engine. This change will cause all personnel to acquaint themselves with the new equipment.

In due time the pilots from the Canal Zone arrived at Langley Field and took off on February 11th for the San Antonio Air Depot, Duncan Field, Texas.

Major Robert C. Candee, Air Corps, is under orders to report next July for duty as student in the 1936-37 senior course at the Naval War College, Newport, R.I. He is now attending the Army War College.

AMERICAN COMMERCIAL AVIATION'S CONTRIBUTION TO NATIONAL DEFENSE

By Major-General Oscar Westover, Chief of the Air Corps

It is timely to survey all our present assets for National Defense. Among these the part that commercial aviation can contribute is important. Without actually building commercial airplanes for quick conversion to Bombers, as European countries are charging each other with doing, commercial aviation in the United States is making many and important contributions to our preparations for defense against air attack.

So far as military aviation is concerned, the world has reached a fateful position on the threshold of wider horizons, where it awaits the touch of genius to supply the novel concepts required for further progress. In view of the past accomplishments of commercial aviation, it is quite as likely that this genius will appear among its ranks as that he will be a product of the Army or the Navy.

Perhaps the greatest aid given by commercial aviation directly to military aviation is the support for a year-round employment of the personnel of aircraft factories. The work of supplying the airlines with their airplanes has filled in the gaps between Army and Navy contracts and has permitted the factories to avoid the great losses suffered each year, before commercial aviation reached any important size, through the necessity for discharging employees at the end of one contract and getting them together at the beginning of the next.

Private flying does not play so important a role in this regard since there is such a difference in the type of planes used for private flying and those used for military purposes. On the other hand, the difference between commercial airliners and military airplanes, especially Bombers and patrol boats, is so slight that the same engineering talent, mechanical personnel and, in many cases, the same tooling and shop equipment fits into the fabrication of both. It is due to this fact that commercial aviation fits so snugly into the scheme of production of military aircraft.

The financial support afforded by the airline's business enables aircraft factories to maintain adequate engineering staffs, laboratories and testing equipment and the output of these is of as great an aid to the improvement of military aircraft as to the improvement of commercial aircraft. No one questions the fact that progress in the development of military airplanes has been advanced materially by the impetus given through the manufacture of the modern airliners. In the past six years commercial aviation has assumed important proportions in the United States, and the development of military types of aircraft has been fully twice as rapid

as in the six years immediately preceding this period.

In the field of ground facilities for the operation of aircraft, the assistance of commercial aviation is second only to that in the production field, and in this field private flying, also, has aided materially. The support which comes from all over the United States for the work being done by the Bureau of Air Commerce is furnished quite as much by private flyers as by the commercial operators. The result has been that Federal funds have been made available each year to increase materially the ground aids to flying. These comprise the construction and improvement of intermediate landing fields, radio beacons, lighted airways, marker beacons, weather broadcasting stations and the maintenance of an extremely valuable information service, which keeps pilots informed of hazards and operating conditions. This service also aids in disseminating the technical improvements in operation accomplished from time to time. Recently the Bureau of Air Commerce has installed blind landing systems at a number of the larger airports throughout the country, and these have already proved to be an important safety measure where air schedules must be maintained and flying must be done under adverse weather conditions.

The increase in commercial and private flying has caused the various municipalities to take a renewed interest in the construction and improvement of municipal airports to serve the needs of this flying. In the last two years the Federal Government has aided tremendously in this work also, by making available to States and municipalities considerable sums from FERA, PWA, CWA, and now from the Works Progress Administration, to be used for improving airports and constructing additional airports. Over 1,000 airports in all parts of the United States have felt the beneficent influences of Federal Government aid, and commercial and private flying have thus had a large share in contributing to this feature of National Defense. These expenditures and the work accomplished by the Bureau of Air Commerce are very direct aids to air defense, since the facilities which they have provided are as useful to military aviation as to commercial and private flying.

The small number of Regular Army and Navy air fields dotted around the country are entirely inadequate to support the operations of military aircraft in large numbers in a defense against air attacks. Recourse must be had to the ground facilities provided

for commercial and private flying to serve these needs. As an example of the extent of this requirement, plans now in course of preparation contemplate the use of numerous municipal and commercial airports in each strategic area. This number amounts to over 550 in all strategic areas. In addition, approximately 200 airports will be required in interior portions of the Continental United States to serve as servicing and refueling stops for military aircraft flying from one strategic area to another, or from their home stations to the various strategic areas. It will thus be seen that almost every town and city of importance in the United States has a part in providing the means for effective defense against air attack.

The third great contribution which commercial aviation makes to National Defense is in the training of competent pilots, many of whom are members of the Air Reserve of either the Army or the Navy. Many of the young men seeking to enter the ranks of the airline pilots obtain their training in the Army Flying Schools at Randolph and Kelly Fields. As a return for this training they accept commissions in the Officers Reserve Corps, thus making themselves available for call to their country's defense in time of need. Without the continued training which commercial aviation af-

fords these young men, their flying ability would rapidly disappear and their value as potential military flyers would, of course, cease. While it is true that a national emergency will probably require extensive operations on the part of commercial aviation, there is no doubt that a certain proportion, probably amounting to 20% of the peacetime resources of this great activity, can be utilized in direct aid of National Defense.

In respect to the assistance to military aviation which can be expected from commercial aviation, this country is far more fortunate than any other. The great extent of our country and the intensive development of commercial aviation in the last few years has resulted in producing more facilities of direct aid in defense against air attacks than most countries can boast. It should give the people of the United States, generally, and those engaged in commercial aviation, particularly, a feeling of great satisfaction to reflect that their activities during recent years have been of such great assistance in arriving at a state of preparation which, taken with all other means provided, affords a reasonable assurance that defense against air attack will be forthcoming.

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DETAIL OF OFFICERS AS STUDENTS AT THE AIR CORPS TACTICAL SCHOOL

War Department Orders have been issued relieving the following-named Air Corps officers from assignment and duty at their present stations, assigning them to station at Maxwell Field, Montgomery, Ala., and directing them to report not earlier than August 10, nor later than August 25, 1936, to the Commandant of the Air Corps Tactical School for duty as students in the 1936-1937 course:

From Barksdale Field, La.:

Captain Earl W. Barnes
 Captain Joseph G. Hopkins (1st Lieut.)
 Adjutant, Station Complement.
 Captain George McCoy, Jr. (1st Lieut.)
 90th Attack Squadron.

From Chanute Field, Rantoul, Ill.:

Captain James S. Stowell
 Captain Robert W. Harper

From Bolling Field, D.C.:

Captain William A. Robertson (1st Lt.)
 14th Bombardment Squadron.

From Langley Field, Hampton, Va.:

Captain Donald F. Fritch
 Major Harold H. George (Captain) 8th Pursuit Group.
 Major Malcolm S. Lawton (Captain) 49th Bombardment Squadron.

Captain Alva L. Harvey (1st Lieut.) 49th Bombardment Squadron.

Captain Budd J. Peaslee (1st Lieut.)
 35th Pursuit Squadron.

Captain Harry E. Wilson (1st Lieut.) 3rd Pursuit Squadron.

From Langley Field, Va. (Cont'd)

Captain Russell A. Wilson (1st Lieut.)
 36th Pursuit Squadron.

Captain Willard R. Wolfenbarger (1st Lt.)
 37th Attack Squadron.

From Maxwell Field, Alabama:

Captain John W. Monahan
 Major Robert T. Zane (Captain) 54th Bombardment Squadron.
 Captain Frank F. Everest, Jr. (1st Lieut.)
 51st Attack Squadron.

From Mitchel Field, N.Y.:

Lieut.-Col. Shiras A. Blair (Captain)
 Station Complement Commander.

From Kelly Field, Texas:

Captain Orvil A. Anderson
 Captain Joseph Smith
 Captain Wallace E. Whitson
 Captain Uzal G. Ent, student at the Advanced Flying School (to report July)
 Major Ulysses G. Jones (Captain) 39th Observation Squadron.

Major John A. Laird, Jr. (Captain) Executive Officer, Advanced Flying School.

From Bowman Field, Ky.:

Captain William W. Welsh, Organized Reserves, 5th Corps Area.

From Scott Field, Ill.:

Major William C. Goldsborough (Captain)
 15th Observation Squadron.

From Panama Canal Zone:

Captain Frank H. Robinson (1st Lieut.)
 25th Bombardment Squadron.

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THE NEW CLASS AT THE PRIMARY FLYING SCHOOL

The March, 1936, class at the Primary Flying School at Randolph Field, Texas, consists of 62 students, of whom three are officers of the Regular Army, seven are Air Corps enlisted men, three are enlisted men from other branches of the military service, and the remaining 49 are candidates from civil life. The enlisted and civilian candidates will undergo training under the status of Flying Cadets.

In point of size, the class of March, 1936, is the smallest entering the Air Corps Primary Flying School for quite a number of years. The quota for the March class is 150 but, in view of the small number of candidates qualifying in the prescribed examinations, it has not been possible to secure the allotted quota.

For the information of qualified young men between the ages of 20 and 27, interested in adopting flying as their career and desirous of taking advantage of the course of flying training afforded without expense to them at the Air Corps Training Center, it may be stated that at the present time all candidates who qualify for appointment as Flying Cadet may feel reasonably sure of assignment to the first class following their qualification.

The course at the Primary Flying School is of eight months' duration, of which four months are spent by the student on the Primary Stage and four months on the Basic Stage. The instruction on the Primary Stage is given on a training type airplane, known as the PT, and consists of dual instruction, the fundamental flying maneuvers, accuracy work and acrobatics.

On the Basic Stage, the student advances to a larger, more powerful and speedier type of airplane, known as the BT type. In this plane and with expert instructors, he now reviews all of the work done on the Primary Stage, but in a ship with different flying qualities and which more nearly approach those of tactical squadrons. At this stage, he also gets formation flying, strange field landings, instrument flying under the hood, and day and night navigation flights. The objects sought so far have been perfection in flying technique and the development of headwork.

The third quarter of the student's scholastic year is spent at the Advanced Flying School at Kelly Field, Texas, where he specializes in either Pursuit, Bombardment, Attack or Observation Aviation, using service type airplanes. In addition to intensive flying training in his own specialty, he is given also considerable experience in day and night navigation, instrument flying, and transition to all types of military airplanes available at the Advanced Flying School.

Upon graduation from the Training Center, the Flying Cadet, now possessing the rating of "Airplane Pilot," is assigned to a tactical squadron at one of the Air Corps stations in the United States for an additional year of duty under his cadet status, upon the completion of which he is commissioned a second lieutenant in the Air Reserve and serves an additional year with a tactical unit, under his status as a Reserve officer. Upon the completion of his active duty as a second

lieutenant, the young Reserve officer returns to civil life, retaining his Reserve officer status. He is eligible to take examination for a commission in the Regular Army when and if vacancies exist, and can affiliate himself with local Reserve or National Guard Air Corps units, thus maintaining his flying experience and his military contacts and associations.

Students of the March, 1936, Class:

OFFICERS

INDIANA 2nd Lt. George E. Adams, Field Art.
IOWA 1st Lt. Grant A. Williams, Cavalry
WISCONSIN 1st Lt. James R. Andersen, Ord. Dept.

FLYING CADETS - CIVILIANS

Royal Edison Delp	Los Angeles, Calif.
Frank Allen Kurtz	Los Angeles, Calif.
Gordon Hugh Pierce	Los Angeles, Calif.
Dwight Elmer Herrold	Long Beach, Calif.
Raymond S. St. Clair	Orange, Calif.
Joseph Frederick Hunker	San Diego, Calif.
Donald Waters Macdonald	San Francisco, Calif.
Milton Scott Adair	San Francisco, Calif.
Kay E. Adams	Greeley, Colo.
Harold Ernest Watson	West Hartford, Conn.
Alfred L. Beaver	Washington, D.C.
Oswald Virgil Eifrig	River Forest, Ill.
Albert A. Johnson	Hammond, Ind.
George William Hogg	Fernald, Iowa.
William Klahr McNowm	Lawrence, Kans.
Lloyd Henry Delton, Jr.	Ottawa, Kans.
Sam Philippe Triffy	Detroit, Mich.
Russell R. Ostrander	Newberry, Mich.
Jacob Jerval Brogger	Butterfield, Minn.
Henry Oliver Winch	Minneapolis, Minn.
James Marvin Curtis	French Camp, Miss.
Hubert Zenke,	Missoula, Mont.
Earl Young	Sidney, Neb.
Edward Gerald Hillery	Boonton, N.J.
George T. Lyons	Buffalo, N.Y.
Kenneth C. Fuller	North Laurence, N.Y.
David Arnold Tate	Asheville, N.C.
Julian M. Bleyer	Tulsa, Okla.
Robert A. Theobald	Portland, Ore.
James Warren Phelps	Berwyn, Pa.
Sterling George Harvey	Bloomsburg, Pa.
Philip Gerald Cockran	Erie, Pa.
Richard W. Van Reed	Reading, Pa.
James Rembert DuBoise, Jr.	Aiken, S.C.
Steele Roy Patterson	Seneca, S.C.
Elbert Helton	Clifton, Texas
Clyde Box	Denton, Texas
Duncan Spence Hughes	Georgetown, Texas
Eugene H. Snavely	Harlingen, Texas
James Mack Humphreys	Houston, Texas
James Duey May	Lubbock, Texas
John Joseph Toudouze	San Antonio, Texas
Gilbert Haven Cady, Jr.	Seattle, Wash.
Clarence A. Gerber	Seattle, Wash.
Norris Perry	Sedro-Woolley, Wash.
William Emanuel Eubank, Jr.	Bluefield, W. Va.
Leslie Eldredge Colby	Viroqua, Wis.
Walter Dillingham	Honolulu, Hawaii

FLYING CADETS - ENLISTED MEN

(All Privates)

Edwin P. Hammond Carrollton, Ala.
Troop A, 8th Engrs. Ft. McIntosh, Tex.
Joseph A. Kreck Burbank, Calif.
73d Attack Squadron, March Field, Calif.

(Continued on Page 19).

Tactical School Details
(Continued from page 16)

From the Philippines

Captain Clinton W. Davies (1st Lieut.)
3rd Pursuit Squadron.

From San Antonio Air Depot, Texas:

Major Robert V. Ignico, Supply Officer,
(Captain)

From Randolph Field, Texas:

Major Clyde V. Finter

Major Lloyd N. Keesling

Major James D. Givens (Captain) Basic

Stage Commander, Primary Flying School

Major Edward D. Jones (Captain) Engineer
Officer, Primary Flying School.

Major Bob E. Nowland (Captain) Principal
Stage Commander, Primary Flying School.

Major Paul L. Williams (Captain) Direc-
tor of Flying Training, Training Center

Captain Harold A. Bartron

Captain James M. Bevans

Captain Francis P. Booker

Captain John R. Hawkins

Captain Edmund C. Lynch

Captain John F. McBlain

Captain David M. Schlatter

From Selfridge Field, Michigan:

Captain Earle E. Partridge

Major George P. Tourtellot (Captain),
17th Pursuit Squadron.

Captain Yantis H. Taylor (1st Lieut.)
94th Pursuit Squadron.

From Wright Field, Dayton, Ohio:

Major Frank D. Hackett (Captain), Chief,
Miscellaneous Supply and Maintenance
Branch, Field Service Section.

Major Frederick M. Hopkins (Captain),
Assistant Commandant, Air Corps
Engineer School.

Major David G. Lingle (Captain), Chief,
Repair Branch, Engineering Section.

Captain James M. Gillespie

Captain Wallace G. Smith

From Middle River, Maryland:

Captain George W. Polk, Jr., Air Corps
Representative at Glenn L. Martin Co.

Of the officers holding temporary in-
creased rank, the majority of them are
relieved of such rank, effective August
8, 1936. Major Tourtellot and Captain
Taylor, Selfridge Field, relinquish
their temporary increased rank August 7;
Major Zane and Captain Everest, of
Maxwell Field, on August 24th; and Cap-
tains Robinson (Panama C.Z.) and Davies
(Philippines) on the date of their de-
parture from their respective stations.

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HEAVIER-THAN-AIR TRAINING

Under Special Orders of the War Depart-
ment, recently issued, nine Air Corps
officers are assigned to station at
Randolph Field, Texas, and are directed
to report to the Commanding General of
the Air Corps Training Center for flying
training with the class commencing on or
about July 1, 1936, viz:

Major Raymond E. O'Neill, student, Air
Corps Tactical School, Maxwell Field, Ala.

Major Lester T. Miller

Major Laurence F. Stone

Students at the Army War College,
Washington, D.C.

Major Walter J. Reed (Captain), 9th Bom-
bardment Group, Mitchel Field, N.Y.

Captain Howard H. Couch

Captain James F. J. Early

Captain John P. Kirkendall

Wright Field, Dayton, Ohio.

Captain Benjamin B. Cassidy, Randolph
Field, Texas.

Major George G. Lundberg (Captain), Sup-
ply Officer, Station Complement, Bolling
Field, D.C.

Of the officers named above, Captain
Couch holds the ratings of Airship Pilot
and Balloon Observer, while the other of-
ficers hold, in addition to these two
ratings, that of Airplane Observer.

Major Reed is relieved from his tempora-
ry increased rank, effective June 25, and
Major Lundberg, June 26, 1936.

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New Radio Equipment for the Air Corps

(Continued from Page 12)

for every channel guarded and teletype
drops for the continuous reception of
weather reports will be installed as rap-
ly as funds become available.

10. It is intended and desirable that
the transmitters be operated remote con-
trol where feasible. To the end that all
installations may be uniform and for effi-
cient use of all apparatus, all of the
following should be located in one room,
preferably a control tower or room, imme-
diately adjacent to the Post Operations
Office, and from which a good view of the
flying field may be had:

a. Controls for 400 watt high frequency
transmitter.

b. Controls for combination homing, radi-
range and broadcast stations.

c. Controls for 15 watt airport trans-
mitter.

d. Controls for flood, boundary and
obstacle lights.

e. Wind direction and velocity indi-
cators.

f. Station altimeters.

g. Weather teletype machine.

h. All receivers and loud speakers.

i. Telephone to Post Telephone System.

j. Interphone connections to Operations
Offices, where necessary.

k. Monitoring equipment for instrument
landing system.

l. Logs, forms, files, typewriter, etc.

m. Large chart of all airways converging
on the station, so positions of airplanes
may be kept.

n. Chart of immediate area (30 miles) of
station to control landings and take-offs
in inclement weather.

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Captain Harlan W. Holden, Air Corps, who
is nearing the completion of 4 years of
duty in the Office of the Chief of the Air
Corps, is under orders to enter the next
class at the Air Corps Tactical School.

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New Class at Randolph Field
(Continued from Page 17)

Wallace Embry Nau Pasadena, Calif.
Station Complement, March Field, Calif.
Leslie M. Greene Denver, Colo.
Primary Flying School Det., Randolph Field.
John Homer Taylor Denver, Colo.
47th School Squadron, Randolph Field.
Henry G. Thorne Ft. McPherson, Ga.
79th Pursuit Squadron, Barksdale Field, La.

Jack G. Gregg Jerome, Idaho
Co. I, 38th Inf., Fort Douglas, Utah
Thomas Ewing Margrave Gordon, Nebr.
17th Inf. Service Co., Fort Crook, Neb.
Aaron H. Hoffeditz Greencastle, Pa.
Panama Air Depot, France Field, Canal Zone
Harold J. Rau Shavertown, Pa.
79th Pursuit Squadron, Barksdale Field, La.

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OBITUARIES

General William Mitchell

The sudden and unexpected death of William Mitchell, former Brigadier-General of the United States Army, on the afternoon of February 19, 1936, was a matter of keen regret to all who knew him personally or by reputation. In the untimely departure of this former officer, whose energetic qualities and forceful and dynamic personality were admired by all, despite whatever differences of opinion they may have entertained, aviation has suffered the loss of one of its staunchest advocates. He occupied a unique position in aviation which no one else can fill.

On the day following General Mitchell's death, the House Military Affairs Committee adopted resolutions of regret, as follows:

"Whereas the Committee on Military Affairs of the House of Representatives has learned of the death of Brig. Gen. William Mitchell, United States Army, resigned, in New York City, on February 19, 1936, at 4:45 p.m., and, whereas the said General Mitchell has appeared before this committee on numerous occasions since the World War and has always manifested an unselfish zeal for the cause of national defense, and whereas the said General Mitchell has courageously and patriotically championed the building up of an adequate air force as a most effective and most economical means for promoting the national defense: Now, therefore, be it

Resolved by the Committee on Military Affairs of the House of Representatives, That we record our admiration for the valorous and heroic services of the said General Mitchell rendered to the Army and to the country, in peace and in war, and that we acknowledge our obligation of gratitude to him for unselfishly and vigorously provoking the thought and action of the American people to build up an adequate air force for the defense of the country; be it

Further resolved, That in the death of General Mitchell the nation has lost a far-seeing and constructive leader of civic opinion with reference to a safe and sane program of national defense; be it

Further resolved, That these resolutions be spread upon the minutes of this committee as a memorial of our respect and esteem for the distinguished public service of General Mitchell, and that the Chairman of this committee ask permission of the House of Representatives to extend his remarks upon the life

and character of General Mitchell, and to include these resolutions therein; and that a copy of these resolutions, duly certified, be transmitted to the widow of General Mitchell as a testimonial of our sympathy with her in her sorrow.

John J. McSwain, Chairman,
Andrew J. May,
Charles A. Plumley,
Committee."

In offering the above resolutions for publication in the Congressional Record, Mr. John J. McSwain, Chairman of the House Military Affairs Committee, reviewed the career of the former Chief of Air Service, First Army, A.E.F., from which the following excerpts are quoted:

"The brilliant and glorious career of General Mitchell as an officer of the United States Army is the proud possession of all our people. Commissioned at the age of 18, at the outbreak of the Spanish-American War, he progressed by rapid strides by reason of his conspicuously efficient discharge of every responsibility placed upon him. I call especial attention to the fact that his citation, in which is based the award of a Distinguished Service Cross, is not for a single act of extraordinary heroism in the face of the enemy, but it is for repeated acts of extraordinary heroism in action at Noyon, France, March 26, 1918; near the Marne River, France, during July, 1918; and in the St. Mihiel salient, France, September 12 to 16, 1918. For displaying bravery far beyond that required by his position as Chief of Air Service, First Army, American Expeditionary Forces, setting a personal example to United States aviation by piloting his plane over the battle lines since the entry of the United States into the War.

"Mr. Speaker, any soldier may well be proud, exceedingly proud, of being awarded the Distinguished Service Cross, even for a single act of extraordinary heroism in the face of the enemy. But for 'repeated acts of heroism', extending through months of daring and dangerous activity, in airplanes by no means too safe and stable, over enemy lines with superior air force, locating strategic and vulnerable enemy positions, and taking back information of incalculable value to the ground forces, it is a combination of daring and heroic conduct unrivaled in military history. The friends of General Mitchell take great pride in his splendid career, all his relatives may properly prize the record of his service as a precious heritage, and his disconsolate widow and orphaned children may find some solace and supreme satisfaction that their names and their lives are forever linked with a man who always put his country's cause first."

Captain Karl G. E. Gimmler

While engaged in aerial gunnery practice at Barksdale Field, Shreveport, La., on February 26th, last, Captain Karl G. E. Gimmler, Air Corps, piloting a Pursuit airplane, failed to come out of a dive toward a target and crashed to his death. Stationed at Selfridge Field, Mt. Clemens, Mich., where he was on duty with the 27th Pursuit Squadron as Flight Commander, Captain Gimmler, with other personnel from that station, had flown to Barksdale Field for the purpose of participating in aerial gunnery practice.

Captain Gimmler was born in Milwaukee, Wis., March 27, 1906. He graduated from the United States Military Academy, West Point, N.Y., in June, 1928; was commissioned a second lieutenant of Field Artillery, and detailed to the Air Corps for flying training. He successfully completed the primary and advanced flying courses, specializing in Pursuit Aviation, and graduating on February 15, 1930. Fort Crockett, Texas, was his first station of duty as an Air Corps officer, and he served there until October, 1931, when he was detailed as a student in the Maintenance Engineering Course at the Air Corps Technical School at Chanute Field, Rantoul, Ill., from which he graduated in June, 1932, with the rating of "Excellent."

Captain Gimmler was next assigned to duty with the First Pursuit Group at Selfridge Field. He was promoted to 1st Lieutenant, March 1, 1934, and, by virtue of his duty as Flight Commander with the 27th Pursuit Squadron, was promoted to Captain (temporary) as of April 20, 1935.

While stationed at Fort Crockett, and during the course of a formation training flight to Kelly Field, Captain Gimmler, in company with Corporal Frank J. Sirovic, his mechanic, joined the mythical Caterpillar Club, July 15, 1930, both taking to their parachutes when the elevators of the airplane jammed, a safe landing of the plane being out of the question.

Captain Gimmler was the winner of the Mitchell Trophy Race, held at Selfridge Field on October 19, 1935, when, in a field of ten contestants, he piloted his Boeing P-26A airplane into first place by attaining an average speed of 212.596 miles per hour over a 100-mile course.

Fate plays rather strange tricks at times, since the donor of the Mitchell Trophy (Gen. William Mitchell) and the latest winner of this Trophy died within a week of each other.

Captain Gimmler is survived by his widow, two daughters and a son, the oldest child being 4½ years of age. The heartfelt sympathy of the Air Corps is extended to his bereaved family.

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Captain Lawrence C. Westley, A. C.

Flying in the vicinity of Sourlake, Texas, on February 18, 1936, Captain Lawrence C. Westley, Air Corps, apparently delayed too long in jumping with his parachute when his plane became disabled, and he lost his life in the crash which followed. His mechanic, Sgt. W. J. Kliffel, jumped from the plane at an alti-

tude of about 500 feet, and his parachute eased him down to safety.

Captain Westley was born at Clifton, Texas, October 20, 1902. He attended Clifton College for one year and the Texas A. & M. College for three years, graduating from the latter institution in 1928 with the degree of B.S. in Electrical Engineering. Appointed a Flying Cadet, he graduated from the Primary Flying School, March Field, Calif., in October, 1929, and from the Advanced Flying School, Kelly Field, Texas, in February, 1930, specializing in Attack Aviation, and being rated "Airplane Pilot" as of February 15, 1930. Under his commission as a second lieutenant in the Air Reserve, he was assigned to active duty with the 90th Attack Squadron at Fort Crockett, Texas. Passing the prescribed examination for appointment in the Regular Army, he was commissioned a second lieutenant in the Air Corps, with rank from May 8, 1930, and retained on duty at Fort Crockett.

On November 22, 1930, Captain Westley won the General Mason M. Patrick Trophy Race, held at Fort Crockett, and confined to members of the Third Attack Group, when he piloted his Attack plane over a 60-mile course at an average speed of 149.2 miles per hour.

Assigned to duty at Chanute Field in June, 1931, Captain Westley pursued the Communications Course at the Air Corps Technical School at that station, graduating in June, 1932, with the rating of "Superior." He then rejoined the 3rd Attack Group at Fort Crockett, and moved with it to its new station at Barksdale Field, La., in March, 1935.

Captain Westley is survived by his widow, whom he married in December, 1935, and to whom the sincere sympathy of the Air Corps is extended in her bereavement.

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WAR DEPARTMENT ORDERS AFFECTING A. C. OFFICERS

CHANGES OF STATION: To Boston, Mass.: Lieut.-Col. John N. Reynolds, Maxwell Field, to duty at Hqs. 1st Corps Area.

To Office of the Chief of the Air Corps, Washington, D. C.: Major Lynwood B. Jacobs, from Aberdeen Proving Ground, Md.

To Aberdeen Proving Ground, Md.: Captain Dudley W. Watkins, from Wright Field, Ohio.

To Wright Field, Dayton, O.: Captain Daniel C. Doubleday (1st Lieut.) 27th Pursuit Squadron, Selfridge Field. Relieved from temporary rank March 31, 1936.

To Mitchel Field, N. Y.: Major Thomas J. Hanley from Fort Leavenworth, Kansas, July 31, 1936, for duty with station complement.

To Maxwell Field, Ala.: Captain Charles Backes, from duty as Instructor, Air Corps, Ohio National Guard, Cleveland, to duty as student at Air Corps Tactical School.

To Kelly Field, Texas: Lieut.-Colonel Arnold N. Krogstad, for duty as Commandant, Air Corps Advanced Flying School, from Office of the Chief of the Air Corps. Previous orders in his case amended.

TRANSFER: 2nd Lieut. Marshall Benner, C. E., to the Air Corps, February 5, 1936, with rank from June 13, 1933.

NOTES FROM AIR CORPS FIELDS

Langley Field, Va., February 14th.

Three B-10E's of the 96th Bombardment Squadron formed one flight of the Composite Squadron which conducted Winter Service test of planes and equipment in the New Hampshire and Vermont sections. Seven officers and 19 enlisted men were with this squadron, which departed from Langley Field on January 31st and was scheduled to return about February 17th.

35th Pursuit Squadron: Owing to the heavy snowfall and the formation of ice, flying conditions were impaired for the first part of the month, with only occasional local flying on clear days.

36th Pursuit Squadron: Flying was curtailed to a great extent during the past two weeks due to weather conditions.

After a long delay, pilots from the Canal Zone arrived at this station and on February 11th returned with seven P-12F planes from this organization.

Ground school instruction was conducted during this period of inclement weather for enlisted personnel of the organization in Armament, Communications and Engineering. The instructors were: Armament, Lieut. W.H. Gist; Communications, Lieut. D.E. Williams; Engineering, Capt. A.R. Springer.

The 37th Attack Squadron welcomes Lieut. Barnes, Air Reserve, for a four-month tour of active duty. Lieut. Barnes, of the October, 1933, class, was formerly stationed at Mitchel Field and was recently connected with the N.A.C.A. (His return to active duty, we suspect, is another case of just not being able to stand by and watch the rest of the boys fly).

Another 37th Attack Squadron pilot and observer took the icy swim to shore when a badly missing engine let Cadet Thomas and Master Sergeant Skrobacke down in the Back River Bay. The plane nosed over and Cadet Thomas had difficulty in extricating himself from the inverted cockpit. Only by unbuckling his parachute and doing some serious mud crawling was he able to escape. Congratulations to these two.

Twelve enlisted men left for Mitchel Field to maintain and service the A-12's from Barksdale Field during the Winter Test Maneuvers.

Hawaiian Air Depot, February 3rd.

Although exact figures are not available at this writing, it is quite certain that the Engineering Section, during the month of January, exceeded all its previous records for aircraft overhaul.

The Hawaiian Air Depot, as originally organized, operated under difficult circumstances, in that the Supply Department was located in the City of Honolulu and the Engineering Department at Ford Island, about ten miles distant. Supplies were transported by truck and barge. On July 1, 1931, the Supply Department was moved to Ford Island, at which time the Depot began to really operate as such. Many difficulties were encountered through lack of experienced personnel, sufficient

personnel and sufficient space. During the past year the personnel has been increased, storage space increased, experience gained, and study of regulations, Air Corps circulars and other War Department publications has resulted in a smoother running organization.

As a result of requests that this Depot and other Insular depots be considered "Control Depots," the Materiel Division made an analysis, the results of which were forwarded to this Depot under date of December 19, 1934, by letter, subject: "Completely Self-sustaining Status for Insular Depots." It was decided at that time to allocate new stocks to this Depot of approximately 75% of the estimated annual requirements. In conjunction with this, authority was requested to maintain stocks of one-year level based on requirements for 18 months, this because of the fact that approximately six months are required from the time a requisition emanates from this Depot until the stock is actually received. The results have been most gratifying, and the flow of supplies to this Depot has increased in a most noticeable manner. The transition has been gradual, until today this Depot closely approximates the set-up of a Mainland Control Depot. We have been particularly fortunate in being able to accomplish the major portion of this transition prior to the receipt of anticipated additional airplanes.

Mr. and Mrs. William H. Cross, transferred to Hawaii from the Fairfield Air Depot, arrived on the Transport REPUBLIC on January 28th. Mr. Cross is accepting a position as machinist at this Depot, after having served in various capacities on the mainland. In addition to his duty at Fairfield, he was also employed in the Field Service Section at the Materiel Division, and later acted as Procurement Inspector at manufacturing plants throughout the Eastern part of the United States.

Mr. Lynn V. Young, accompanied by Mrs. Young, transferring from Pittsburgh Airport to Hawaii, also arrived on the Republic. Mr. Young, who is a Senior Aircraft Engine Mechanic, is a graduate of the U.S. Naval Aviation School, Great Lakes, Ill., worked for some 5 years at the Middletown Air Depot, and in 1930 was promoted to Chief Mechanic Aviation and transferred to Pittsburgh. The Hawaiian Air Depot extends its cordial aloha to these new employees.

Scott Field, Belleville, Ill., Feb. 17th.

Major Chester P. Haycock, Finance Department, visited Scott Field for the inspection of property accounts and property audit procedures. Due to a change in his schedule, he was forced to postpone the inspection until sometime in March.

Second Lieut. Eldon A. Rohl, Air Reserve, completed four months' active duty on February 13th. Second Lieuts. John L. Ames and Robert C. Ashley, Air Reserve, also Paul M. Norman, Air Reserve, completed two weeks' active duty on February 15th.

The Post Basketball Team lost its first game to a local team - 39 to 33. Soon the Post Team

will play its old rival, the 6th Infantry team of Jefferson Barracks, Mo.

Two of the six Scott Field soldiers placed in the St. Clair County Golden Gloves finals on Feb. 14th, and will go to St. Louis to meet other regional champions. The two soldiers, who won gold medals as well as the trunks given all contestants, are Pvts. J.K. Holmes, 15th Obs. Sqdn., novice heavyweight champion, and Edward M. Damiani, Medical Corps, novice middleweight champion. First Sgt. Robert L. Miller assisted the tournament officials as judge and referee. Pvt. 1st Cl. Harry B. Herton, who held the welterweight championship at Ft. Clark, Texas, 1925 to 1927, was trainer for the Scott Field men. Both are from the 15th Obs. Sqdn. Staff Sgt. Alfred A. Wittbracht, 21st Airship Group Hqrs., the Post Sergeant Major, also assisted in various capacities.

Chanute Field, Pantou, Ill.

On January 23rd, Colonel Junius W. Jones left for the West Coast, returning on the 31st with a spanking new A-17. Like the little chap who habitually inherits big brother's trousers, we must confess that we are all slightly awed by the gift.

On January 21st, the Chanute Field Officers' Club held its semi-annual election of officers with the following results: President, Major William R. Turnbull; Secretary-Treasurer, 1st Lieut. John J. Keough; Board of Governors, Captains Donald W. Norwood, Gerson K. Heiss and 1st Lieut. Forrest G. Allen. Capt. Gerson is from the Ordnance Dept.

Arrivals during the month were Major Orlan H. Quinn, Feb. 9th, from Langley Field, Va.; 1st Lieut. Hansford W. Pennington, January 15th, from Panama Department, and 1st Lieut. Nicholas E. Powell, Jan. 10th, from Hawaiian Department.

With Capt. James E. Duke, Jr., as A & R Officer, athletics at Chanute Field have gone indoors for the winter, bowling, badminton and basketball being the chief sources of recreation.

A fencing team was organized during the fall and, while the record to date is not a phenomenal one, it shows promise.

The A.C.T.S. basketball team, coached by 1st Lt. Nicholas E. Powell, continues to render a splendid account of itself. Starting early in November, the team has demonstrated consistent progress, engaging for the most part semi-pro and school teams, and occasionally taking on a professional outfit. The team stands second in the Champaign County League, having lost but two games in the tournament.

Selfridge Field, Mt. Clemens, Mich. Feb. 17.

Having completed gunnery practice at Barksdale Field, La., Captains Dixon M. Allison, Daniel C. Doubleday and Hanson H. Van Auken returned to the field on February 15th. Second Lieut. Joe S. Irvine, Air Reserve, departed on February 17th for temporary duty at Barksdale Field with the 27th Pursuit Squadron.

First Lieut. James R. Anderson, Ordnance Department, recently received orders relieving him from assignment at Selfridge Field and directing him to report to the Flying School,

Randolph Field, Texas, for duty as student with the class commencing training about March 1st.

The deciding game for the championship of the first round of the Inter-Squadron Basketball League season was played February 13th, the 57th Service Squadron defeating the 56th Service Squadron, 27 to 9. The championship of the second round was decided when the 57th Service Squadron defeated the Station Complement on February 11th, score 32-29. The 57th is now the proud possessor of the championship cup of the Inter-Squadron Basketball League.

The Post Basketball Team played their second game of the season when they met the Port Huron Junior College cagers for the second time - Feb. 14th - and defeated them by score of 34 to 32. Commencing February 17th, the Post Team is scheduled for sixteen games, following which contests with various Army posts are contemplated.

Arrangements were completed for the Post Bowling Team to compete in the American Bowling Congress tournament to be held at Indianapolis, Ind. The team plans to leave Selfridge Field on March 29th and return on April 3rd. They are scheduled to play a team match on March 31st and in minor events on the following day. The team is composed of Master Sergeants Jacob J. Brandner, Wilford L. Baxter, Staff Sgts. Arthur R. Hegemeier, Brown C. Tucker, Corporal Lewis D. Harner, and Pvt. John J. Manicki.

San Antonio Air Depot, Duncan Field, Texas.

Major-General Oscar Westover, Chief of the Air Corps, on his first inspection of Air Corps activities in this vicinity since his appointment, was welcomed on a visit to this Depot on February 6th.

Wing Commander W.R. Kenny, of the Royal Canadian Air Force, and Major David Barry, of the Royal Canadian Engineers, Ottawa, Canada, on a visit by rail to aviation activities in the southeast and southern parts of the United States paid a visit to this Depot on February 7th. Commander Kenny is chairman, and Major Barry is a member of the Royal Canadian Air Force Stations Development Committee.

Captain H.W. Wellman, Jr., of the Colorado National Guard Air Corps, Denver, was a visitor to the Depot, February 5th, ferrying in an O-19.

Captain N.D. Brophy, Air Corps Instructor on duty with the Colorado National Guard, Lowry Field, Denver, ferried an O-19E plane of that activity to the Depot on February 13th, for the annual inspection of the plane. Accompanying him in another O-19, on a visit to the Depot, were Major V.D. Stone, 45th Division Aviation, and Lieut. R.L. Qualls, 89th Brigade Staff, Colorado National Guard. Captain Brophy was warmly greeted by his many old friends here, as he was formerly Adjutant at this station.

Lieut. J.A. Austin, of the Field Service Section, Materiel Division, Wright Field, Ohio, arrived at the Depot February 6th for a conference on engineering shop practices, storage matters, depot layout problems, etc.; and departed on February 8th for the Rockwell Air Depot on a similar mission.

The Depot sincerely regrets to announce the death of Jesse B. White, 67, Civil Service employe of our Depot Supply Department, which occurred suddenly at his home in San Antonio on February

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10th. Interment was in the Mission Burial Park, San Antonio, on the 11th. Mr. White was a native of Jackson County, Texas. He had been employed in the Government service since May 1, 1920; first, with the Finance Department, Fort Sam Houston; and since Aug. 5, 1920, at this Depot. His long record of faithful and efficient service and his genial good will and friendly spirit had won him the

highest esteem of a wide circle of personnel, who greatly mourn his passing. Surviving him are his widow, a daughter and a son, and one sister.

During the month of January, the Engineering Department of this Depot overhauled a total of 23 airplanes and 79 engines, and repaired 10 airplanes and 19 engines.

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TECHNICAL INFORMATION AND ENGINEERING NEWS
Air Corps Materiel Division

Switch, Utility, Type B-7A.

The Type B-7A switch has been classed as "standard" according to an Engineering Section Memorandum Report. This switch is "full on" in one extreme position, "momentarily on" in other extreme position, and "off" in center position only, and is used for operation of running lights. It can also be used for propeller control on single engine airplanes.

Switch, Gun Control, Type C-2B.

The Type C-2B gun control switch has also been standardized. The carrying capacity of this switch is 80 amperes for a minimum of three minutes' continuous operation. It is used in connection with machine gun operation.

De-icers.

The experimental installation of propeller slinger-ring type de-icers in a Type B-12A airplane - which distribute an anti-freeze liquid over the propeller blades - is being made, and this equipment will be ready for testing soon. The starting and stopping of the flow of the liquid, as well as the rate of flow, are controlled by the pilot. Installation of rubber type de-icers to the radio mast and radio loop provides this airplane with complete de-icing equipment.

Medical Aspects of Stratosphere Flight of November 11, 1935.

An Engineering Section Memorandum Report was prepared covering the medical aspects of the National Geographic Society-United States Army Air Corps Stratosphere Flight, November 11, 1935. It was stated that the environmental conditions created in the gondola in the flight to 72,395 feet were satisfactory for the protection of the contained personnel; positive means of accurately controlling the environmental conditions were not provided; the method of heating the gondola by means of the sun's rays is not practical for general stratosphere flying; and no new injurious environmental conditions were found in the stratosphere.

Pilot Stature.

An Engineering Section Memorandum Report gives the results of a study on the effect of pilot stature on aircraft design and performance, pilot comfort, fatigue and accident hazard, and availability of candidates for pilot training of given limited statures. It was stated that all airplane cockpits should be sufficiently large to accommodate all pilots required to pilot such airplanes and that sufficient adjustment of cockpit seats and controls should be provided to permit the efficient operation of airplanes by pilots of all statures and weights accepted for training by the Air Corps.

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TEMPORARY PROMOTION OF AIR CORPS OFFICERS

To Captain

1st Lieut. William G. Bowyer, assigned as Engineer Officer, 65th Service Sqdn. Hawaii.

1st Lieut. John G. Fowler, assigned as Intelligence and Operations Officer, 50th Observation Squadron, Hawaii.

1st Lieut. Draper F. Henry assigned as Flight Commander, 44th Observation Squadron, Albrook Field, Canal Zone.

To 1st Lieutenant

2nd Lieut. Richard J. Meyer assigned as Armament Officer, 4th Observation Sqdn. Hawaii.

2nd Lieut. Thomas S. Moorman, Jr., Supply Officer, 4th Observation Squadron, Hawaii.

2nd Lieut. John G. Armstrong, assigned as Armament Officer, 23rd Bomb. Sqdn., Hawaii.

2nd Lieut. David N. Crickette assigned as Supply Officer, 23rd Bomb. Sqdn., Hawaii.

2nd Lieut. Milton F. Summerfelt assigned as Communications Officer, 23d Bomb. Squadron, Hawaii.

To 1st Lieutenant (Continued)

2nd Lieut. Douglas M. Cairns assigned as Communications Officer, 26th Attack Sqdn., Hawaii.

2nd Lieut. Vernon C. Smith assigned as Supply Officer, 26th Attack Squadron, Hawaii.

2nd Lieut. Harry S. Bishop assigned as Engineer Officer, 50th Observation Squadron, Hawaii.

2nd Lieut. Edward D. Marshall assigned as Supply Officer, 50th Observation Squadron, Hawaii.

2nd Lieut. Carlyle W. Phillips assigned as Communications Officer, 50th Observation Squadron, Hawaii.

2nd Lieut. William L. Travis assigned as Transport Officer, 65th Service Sqdn., Hawaii.

2nd Lieut. Travis M. Hetherington assigned as Communications Officer, 72nd Bombardment Squadron, Hawaii.

2nd Lieut. Marshall Bonner assigned as Chief Inspector, Hawaiian Air Depot.

Above promotions effective February 16, 1935; no changes of station involved.

To Captain

1st Lieut. John J. Morrow assigned as Intelligence and Operations Officer, 9th Bombardment Squadron, Hamilton Field, Calif.

1st Lieut. Murrey C. Woodbury assigned as Supply Officer, Station Complement, Selfridge Field, Mich.

1st Lieut. Donald N. Yates assigned as Flt. Commander, 22nd Observation Squadron, Brooks Field, Texas.

1st Lieut. Gerald C. Johnston assigned as Engineer and Armament Officer, 21st Airship Group, Scott Field, Ill.

1st Lieut. Max E. Warren assigned as Supply Officer, 3rd Transport Squadron, San Antonio Air Depot, Texas.

1st Lieut. Earl C. Robbins assigned as Flt. Commander, 32nd Bombardment Sqdn., March Field

1st Lieut. John H. Fite assigned as Flight Commander, 54th Bombardment Squadron, Maxwell Field, Ala.

1st Lieut. Morris R. Nelson assigned as Supply Officer, 20th Pursuit Group, Barksdale Field, La.;

1st Lieut. John J. Keough assigned as Supply Officer, 98th Service Squadron, Chanute Field.

1st Lieut. Oscar F. Carlson, Instructor, A.C. Technical School, Chanute Field, Ill., assigned as Engineer Officer, 98th Service Squadron.

Above promotions effective February 22, 1936; no changes of station involved.

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The duty assignments of the following-named Air Corps officers, holding temporary increased rank, were changed, effective February 16, 1936, these officers retaining their temporary rank:

Captain Waldine W. Messmore, 65th Service Squadron, Luke Field, to Adjutant, 18th Composite Wing, Fort Shafter, T.H.

Captain William C. Sams, Intelligence and Operations Officer, 50th Observation Squadron, Luke Field, T.H., to Flight Commander of this organization.

Captain Donald D. Arnold, 26th Attack Squadron, Wheeler Field, to Flight Commander, 6th Pursuit Squadron, Wheeler Field, T.H.

Captain Kingston E. Tibbetts from 6th Pursuit Squadron to Engineer and Armament Officer, 18th Pursuit Group, Wheeler Field, T.H.

Captain Mills S. Savage from 18th Pursuit Group, Wheeler Field, to Flight Commander, 26th Attack Squadron, Wheeler Field, T.H.

Effective February 22, 1936:

Captain Albert Boyd from Flight Commander, 48th Pursuit Squadron, Chanute Field, to Secretary, A.C. Technical School, that field.

Captain David P. Laubach, 1st Bombardment Squadron, assigned as Supply Officer, 61st Service Squadron, Mitchel Field, N.Y.

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Major Albert M. Guidera was relieved from duty with Station Complement, Langley Field, Va., and assigned to duty with the CHQ Air Force at that station.

1st Lieut. Walter C. Sweeney, Jr., Infantry, was transferred to the Air Corps, January 29, 1936, with rank from August 1, 1935.

2nd Lieut. Robert N. Tyson, Infantry, was relieved from duty with the Air Corps at Kelly Field, Texas, and assigned to the 2nd Division at Fort Sam Houston, Texas.

Captain John S. Griffith was transferred from Bolling Field, D.C., to Wright Field, Ohio.

1st Lieut. Elwood R. Quesada, student at Air Corps Tactical School, Maxwell Field, Ala., is under orders to report at the Command and General Staff School, Fort Leavenworth, Kansas, between August 17 and 26, 1936.

Orders assigning Captain Lawrence J. Carr from Air Corps Tactical School to Command and General Staff School, Fort Leavenworth, Kans., revoked.

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WHO IS THE CREW CHIEF?

The answer to the puzzle in the last issue of the Air Corps News Letter is --
SMITH.

The radio-man's nearest neighbor among the officers could not have been Captain Robinson, who is stationed at Hamilton Field. It could not have been Captain Jones, the wise-cracker, as he had \$5.00 on his person, and 5 is not divisible by 3. Therefore, the radio-man's nearest neighbor must have been Captain Smith, stationed at Fort Leavenworth. Captain Jones must, therefore, be the officer stationed at Langley Field, and as the namesake of the radio-man is stationed there, the radio-man's name must be Jones.

The gunner must be either Smith or Robinson, but it cannot be Smith, as Captain Jones said that "Smith beats the gunner, etc." Therefore, the gunner's name is Robinson and the crew chief's name is SMITH.

Major Michael F. Davis, Assistant Executive, Office of the Chief of the Air Corps, was the first to submit the correct answer to this puzzle. Since, however, he is so close to the editorial office of the News Letter, it is proper to mention the names of several individuals, stationed outside of Washington, who submitted correct answers, viz:

1. Private Herman T. Murray, Station Complement, Brooks Field, Texas.

2. Flying Cadet Hilmer C. Nelson, Mitchel Field, N.Y.

3. Private, 1st Cl. Kenneth C. Jones, 9th Airship Squadron, Scott Field, Ill.

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Here's another one:

After he had figured out the name of the Crew Chief, Capt. Robinson turned to Capt. Jones and said: "Now, I'll give you one to think about. An enlisted man, finding that his smoking habit proved rather expensive, started to figure how he could economize on his smokes. One solution was to save the tobacco from the butts of the cigarettes he smoked, and he found that the tobacco from the butts of six cigarettes made one whole cigarette. After smoking 36 cigarettes, how many additional cigarettes did he make?"

This looks easy, but - If you have a good puzzle, send it to the News Letter.

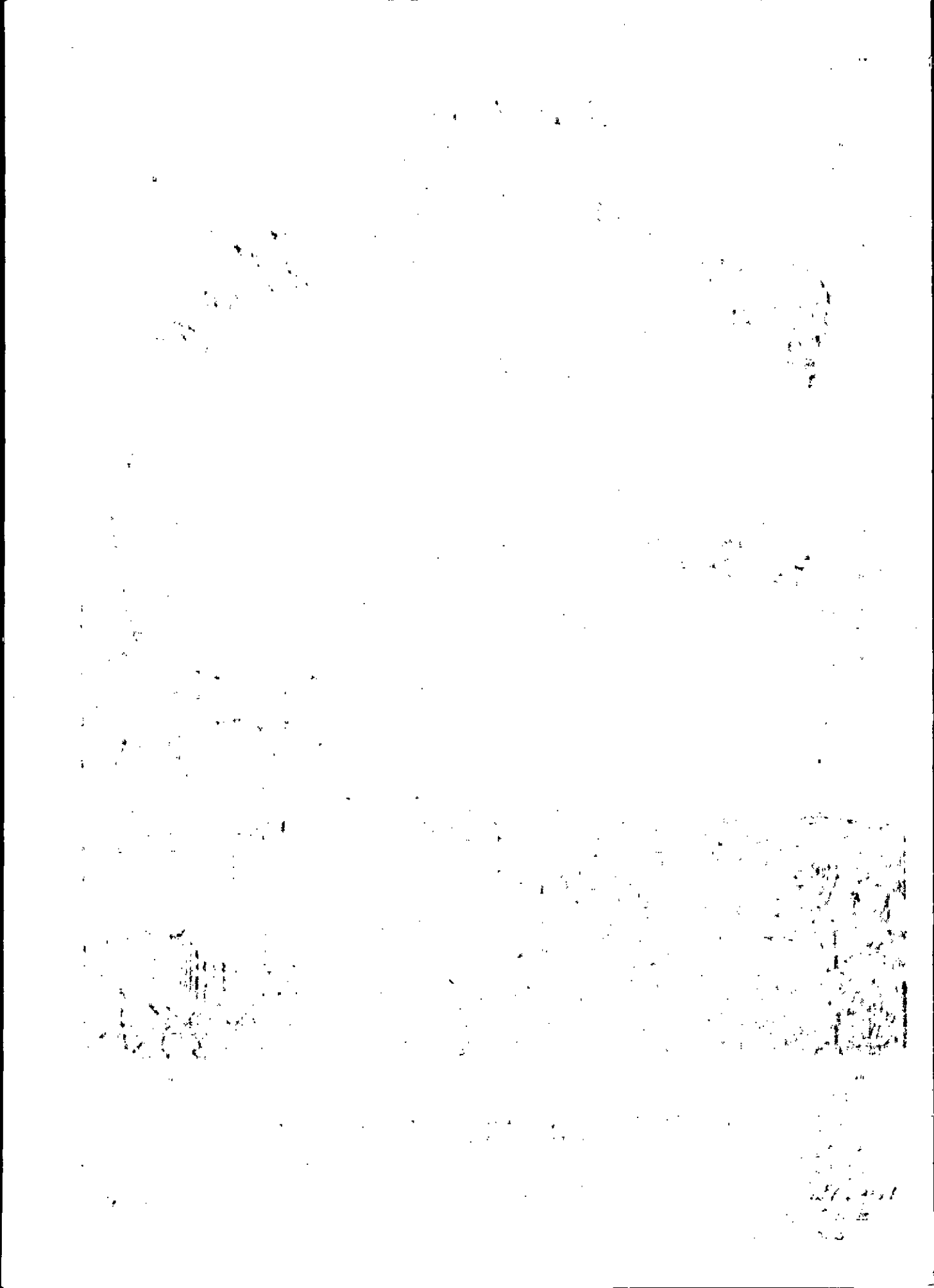
V-6958, A.C.

Air-Corps

News Letter



ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.



Information Division

Air Corps

March 15, 1936

Munitions Building.

Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE PERSONNEL REQUIREMENTS OF AIR DEFENSE

The commissioned and enlisted strengths of the Air Corps were fixed in the National Defense Act of 1920, and amended by the "Air Corps Act" of July 2, 1926. The latter Act increased the personnel strength of the Air Corps, as set by the former, as it was recognized that the increase in the size and complexity of aircraft, which had occurred between 1920 and 1926, required more men for their operation and maintenance.

This increase in size and amount of equipment of airplanes has continued since 1926, and at an even greater rate than in the preceding period. During this same time the improvement in performance has enlarged the field of employment of airplanes, with the result that more of them are required to perform the added missions they are now capable of accomplishing. This need for more airplanes was recognized by both the "Drum Board" of 1933 and the Baker Board of 1934, each of which set a goal of 2320 airplanes; a substantial increase over the existing legal limit of 1800 serviceable airplanes, as established by the Air Corps Act of 1926.

From discussions in the Congress, in connection with appropriations for the Army, it appears probable that the Congress is in accord with the Baker Board recommendations and intends to provide, ultimately, 2320 airplanes for the Army Air Corps. Part of increase will be accomplished when all the airplanes are delivered that are being bought with the funds now appropriated, and soon to be available under the War Department Appropriation Bill for the F.Y. 1937. This increase in the number of airplanes introduces the second important factor in the creation of a requirement for more Air Corps personnel.

The third and probably most important factor of all, is the general recognition now, throughout the War Department and in the Congress, that the Air Force of the Army must be maintained at all times upon a war footing, if it is to be effective in carrying out its mission. It is apparent that the time factor involved for an enemy to launch an air attack against us is, relatively, so small compared with the time that would be required to bring an army against us, that our Air Force must be ready at all times to fight.

Such a position of "readiness for

action" involves a greatly increased personnel requirement. It is one thing to operate airplanes at Regular Army stations upon a basis of peace time training, and quite another, and larger, order to operate the same, and probably an increased, number of airplanes in the field on the basis of the intensive operations demanded by war.

To do the latter requires enough trained personnel to improvise in the field all or most, of the operating facilities found at a Regular Army Air Corps station; enough to operate the airplanes upon a basis of at least a trebled number of hours of flying; and enough to carry on the greatly increased burden of supply and training of replacements. Summarizing, we have, then, three important factors operating to create a requirement for more Air Corps personnel.

First - a great increase in the size of airplanes and in the amount of their equipment.

Second - a considerable increase in the number of airplanes to be provided under the completed program.

Third - the maintenance of our Air Force in a state of constant readiness for field service.

The last of the above factors applies at the present moment in its full force, and the extent of the requirement it sets up has been under study in the War Department, in the Office of the Chief of the Air Corps, and at the GHQ Air Force Headquarters for more than a year. The force of the first of the three factors summarized above has been felt for a long time. Its effect is, therefore, cumulative. Furthermore, it will be a continually increasing factor, since the trend at the present moment, both here and abroad, is toward still larger and more completely equipped military - as well as commercial - airplanes.

The second factor, that is, the program for an increased number of airplanes in our Army Air Corps is being realized day by day, through the delivery of the airplanes now being fabricated; and by the formulation of plans for the purchase of a considerable additional number. This number is placed at 565, under the present W.D. appropriation for the F.Y. 1937, beginning July 1, 1936.

Our Air Corps personnel authorization still stands at the number set by Congress on July 2, 1926, and the actual personnel in service is below the auth-

orized numbers. We are face to face with the need for bringing this vital part of our Air Defense program up to requirements. To obtain the maximum benefit from the new and better airplanes we are buying, and are about to buy, it is desirable to secure, train and have ready the additional personnel required to operate and maintain them when they are received. To place our Air Force upon a basis of constant readiness for defense, it is believed we should also secure and train the additional personnel required for the intensive operation of our Air Force in the field in time of national emergency.

It is probably not essential that all this latter personnel should be assigned as Air Corps personnel. Many of the ground duties which must be performed to support active air operations in the field pertain to the special fields of other branches of the Army. Ground communications can be handled by Signal Corps personnel and bomb and ammunition supply by Ordnance and Service of Supply personnel. Airdrome construction is in the line of the duties assigned to Engineer Corps personnel. The men of any branch can be quickly taught the duties of observers in the Aircraft Warning Service.

However it is essential that the personnel we will require to perform all these duties for the Air Force when it takes the field at the first attack against us, shall be assigned to these duties and trained for them in time of peace. We have no enlisted reserve for the Air Corps and the present authorized enlisted strength of 16,500 amounts to just over, and the actual enlisted strength of 15,545 amounts to less than 7 men to each of 2320 airplanes. In the World War we used approximately 35 enlisted men per airplane. Considering published data applying to Great Britain, France and Italy, it is found that they have in the active air forces approximately 11.5 men per airplane. The data for these countries is far from complete,

no doubt, and it is fairly certain that many of the airplanes used to arrive at the figure of 11.5 are in reserve.

The important consideration, however, in making a comparison between these countries and our own is the great difference in the geographic situations. Each of these European countries has its aircraft warning system, including observation posts and ground communications in actual operation at all times. The men of this service are not charged to the air forces. Each of them has its permanent peace-time airdromes in the locations from which their air forces will operate in a defensive war. In our case we cannot expect more than one of our permanent Air Corps stations to be in the active theater of operations which will develop in a defensive war. This means that we must operate most of our air forces from bases which will have to be developed after the war opens, with the result that more men will be required. These European countries have their air force supplies, including gasoline, oil, bombs, and ammunition, right at the places where they will be needed in a defensive war. We must transport ours over long distances to improvised dumps and storage.

These important differences in our situation and theirs prevents any direct comparison between the number of men we should have assigned per airplane and those European countries have; who are charged to their air forces. On the other hand, these very differences emphasize the disparity in readiness for action between the loading powers of Europe and the United States, in so far as personnel for air defense is concerned. It is true that the same, or a greater disparity, is found when the ground armies are compared. However, as was pointed out earlier in this article, in a defensive war our ground armies will have a great deal more time than the Air Force to prepare for battle. The GHQ Air Force should be ALWAYS READY FOR DEFENSE.

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SEPARATE PROMOTION LIST FOR THE AIR CORPS

The Hon. John J. McSwain, M.C., Chairman of the Committee on Military Affairs, House of Representatives, introduced in that body of Congress on March 11, 1936 (by request) H.R. 11743, A Bill to promote national defense by creating a separate promotion list for Air Corps officers in the United States Army, viz:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,
That there is hereby created a separate

promotion list of commissioned officers of the United States Army Air Corps; which shall include all officers assigned to the Army Air Corps; the names on this list shall be arranged in the same relative order that they now have on the Army promotion list provided for in section 24a of the Act of June 4, 1920 (U.S.C., title 10, sec. 553; 41 Stat. 771), and the names of said officers shall be removed from the Army promotion list: Provided, That nothing in this Act shall be so construed as to

change the respective relative positions of Air Corps officers on the Air Corps separate promotion list from the relative position previously held by these officers on the Army promotion list. And provided further, That the method of determining the position of officers on the Air Corps separate promotion list shall be the same as that prescribed for the Army promotion list by the Act of June 4, 1920, as amended.

All promotions provided for in this Act shall be subject to the examination prescribed by existing law.

Sec. 2. That from and after the effective date of this Act, the authorized number of Air Corps officers in the grade of colonel shall be 3 per centum; the number of such officers in the grade of lieutenant colonel shall be 4 per centum; that the number of such officers in the grade of major shall be 15 per centum of the aggregate number of Air Corps officers authorized by law: Provided, That in making any computation under the provisions of this section whenever a final fraction of one-half or more occurs in the number of officers involved in any such computation the next higher whole number of officers shall be regarded as the authorized or required number thereof.

Sec. 3. All vacancies, including original vacancies resulting from the operation of section 2 hereof, occurring on or after July 1, 1936, in the respective grades of colonel, lieutenant colonel, and major shall be filled by the promotion of Air Corps officers in the manner provided in section 24c of the said Act of June 4, 1920: Provided, That all officers promoted under the provisions of this paragraph shall take rank in the grade to which promoted according to the dates stated in their commissions in said grade; and when the dates of rank of two or more officers in said grade are the same, such officers shall take rank among themselves according to their standing on the Air Corps promotion list.

The number of Air Corps officers that shall be in the respective grades of captain and first lieutenant at any time after the effective date of this Act shall be such as results from the operation of the promotion system hereinafter in this paragraph proscribed. Air Corps second lieutenants and first lieutenants shall be promoted to the respective grades of first lieutenant and captain immediately upon completing respectively three years' and eight years' commissioned service in the Regular Army, but not otherwise: Provided, That no Air Corps officer shall be promoted, under the provisions of this paragraph, in advance of any Air Corps officer in the same grade whose name appears above his on the Air Corps promotion list.

Sec. 4. That from and after the effective date of this Act, the number of

general officers of the line of the Army is hereby increased by three major generals and six brigadier generals; and that hereafter one additional brigadier general of the line shall be authorized for each additional wing of the Army Air Corps organized: Provided, That the additional general officers of the line authorized by this Act shall be flying officers.

Sec. 5. That from and after the effective date of this Act there shall be one Chief of the Air Corps with the rank of major general and one assistant with the rank of brigadier general: Provided, That the Chief of the Air Corps and the Assistant Chief of the Air Corps shall be flying officers.

Sec. 6. This Act shall be effective the first of the month following the date of enactment of this Act, and all laws and parts of laws, insofar as they are inconsistent with or in conflict with any of the provisions hereof, are hereby repealed as of that date."

This bill was referred to the House Military Affairs Committee.

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GENERAL CHANEY REPRESENTS MARYLAND AND ITS EXECUTIVE AT CENTENNIAL EXERCISES

At the Centennial Exercises in San Antonio, Texas, on March 6, 1936, commemorating the one hundredth anniversary of the Battle of the Alamo, General James E. Chaney, Air Corps, commanding the Air Corps Training Center, represented the Governor of Maryland and presented Maryland's flag to Governor Allred, of Texas, who accepted it on behalf of the Alamo.

Maryland was represented among the one hundred and eighty-one defenders of the Alamo who fought until the last man was killed. In presenting the flag, General Chaney stated: "In behalf of Maryland and its Governor, the Honorable Harry W. Nice, I have the honor to present this flag as a symbol of our admiration for the bravery and courage of the immortal heroes of the Alamo."

Governor McAlister, of Tennessee, representatives of England, Scotland, Ireland, and Germany, and other state officials participated in the exercises.

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Lieut. J.P. Stewart, Assistant Communications Officer, 50th Observation Squadron, Luke Field, T.H., is still working on the radio beacon which he hopes may be of use in helping pilots of this organization to gain the necessary training in beacon flying. The main trouble with this gadget so far is getting an antenna that will load up properly. However, Lieut. Stewart is a radio man, and radio men are known for their tenacity.

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Major William O. Ryan, Air Corps, was promoted to Lieut.-Colonel, with rank from February 1, 1936.

NATIONAL PLAN FOR AIR MARKERS

Describing his nation-wide plan for markers in the National Aeronautic Magazine for March, Mr. R.G. Parker, chief of the air marking division of the Illinois Aeronautics Commission, states that to "air mark" the United States so that airmen need never be lost for more than a few minutes during clear weather would require only 5,619 air markers, or an average of 117 per State.

Aviators everywhere will thank Mr. Parker for designing what he calls "sky-Hiway Trail Markers," for they are composed of enormous words, and the name of the town usually stretches out for a city block in length. Letters are twenty feet wide by twenty-six feet high and spaced eight feet apart. The average length of an air marker of this type is 275 feet, but the names of cities can be seen clearly by airmen flying 5,000 feet and higher. They are constructed out of broken paving block, brickbats and other waste material, but the material is painted white to make it visible.

The Illinois director is seeking to line up other States in a concerted air-marking drive through the National Aeronautic Association and with the full cooperation of the Bureau of Air Commerce. He says that the labor cost is only \$125 per marker when relief labor is used, and that the whole national program would cost about \$702,000. Works Progress funds would be used. The specifications for the markers have been copyrighted and registered to prevent commercial use by advertisers.

According to his State-by-State analysis, New York State needs 250 markers to be properly designated from the air, while Wyoming only needs thirty, Alabama 150 and Indiana, 150. Illinois launched its program two years ago and has most of its communities well marked.

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CAPTAIN STEVENS GUEST SPEAKER

Captain Albert W. Stevens, Air Corps, was the guest speaker at the annual banquet of the Engineers Society of Pennsylvania at Harrisburg, Pa., on the evening of March 4th. Honorary membership in The Engineers Society of Pennsylvania was conferred upon Captain Robert A. Bartlett, Arctic Explorer, an honored guest.

Among the listening guests were The Adjutant General, Frederick B. Kerr; Major-General Edward C. Shannon, Commander of the 28th Penna. National Guard; Brig.-General Edward J. Stackpole, Jr., Commander of the 52nd Cavalry Brigade, Penna. National Guard, and Lieut. Camille Vinet, Chief of Bureau of Aeronautics, Penna. Dept. of Revenue.

Among the items on the menu were

Registered Turkey, B.S.; Test Pit Olives; Stratosphere Potatoes, Depression Sprouts; Cranberry Logs; Biscuit Engineers and Highways Cake.

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MASS FERRY FLIGHT SUCCESSFULLY COMPLETED

The largest mass flight of U.S. Army planes made to a possession beyond the continental limits of this country was successfully completed on February 28th, with the arrival in the Panama Canal Zone of 12 P-12 Pursuit planes and 11 B-6 Keystone Bombers. A minor mishap to one of the P-12's (leaking main gas tank) delayed its arrival in Panama one day.

Prior to the Panama flight, all of these 24 planes had been in use by Air Corps organizations at Langley Field, Va. They were transferred to Panama to replace un-serviceable aircraft, and were ferried by Air Corps pilots on duty in the Panama Canal Department. The only officer participating in the flight stationed elsewhere was Major Malcolm C. Grow, Medical Corps, Flight Surgeon.

The Air Corps personnel made the journey from Panama to New York by army transport, and were then flown to Langley Field.

Taking off from Langley Field on February 11th, the planes were flown, via Atlanta, Ga., to San Antonio, Texas, where the Bombers were given a thorough check by personnel of the San Antonio Air Depot.

The flight of 13 Pursuit planes was led by Lieut.-Colonel Charles T. Phillips, and the flight of 11 Bombers by Lieut.-Colonel Junius H. Houghton.

Departing from Randolph Field, Texas, at 11:30 a.m., February 21st, the first stop was made at Brownsville, Texas. On the following day, at 9:46 a.m., the two flights took off from the Brownsville airport for Tampico, Mexico, only to return shortly thereafter due to unfavorable weather conditions encountered. Another take-off was made at 1:15 p.m. Tampico was reached in due time, and February 23d found the Army airmen in Vera Cruz, Mexico, the Pursuit planes arriving there at 11:45 a.m., and the Bombers at 1:10 p.m. Due to lack of accommodations for all of the personnel and the necessity for extra service for the Pursuit planes, the Bombers remained overnight at Vera Cruz and the Pursuit at Minatitlan.

The next overnight stop was at Guatemala City, Guatemala, the Pursuiters arriving at 2:00 p.m., February 24th, and the Bombers at 3:35 p.m. Stops were also made at Managua and at San Jose, Costa Rica.

Piloting the P-12 Pursuit planes, in addition to Lieut.-Colonel Phillips, were Lieut.-Colonel Donald P. Muse, Majors of Frank O'D. Hunter, Burton M. Hovey, Jr., Guy B. Henderson, Captains Charles A. Ross, Joel E. Mallory, William E. Hall, David D. Graves, Joseph H. Atkinson, Roland R. Walker, Leo W. DeRosier and 1st Lieut. Edward W. Anderson. These planes were as-

signed to Albrook Field, Canal Zone.
The pilots and co-pilots of the B-6
Keystone Bombers were, in addition to
Lieut.-Col. Houghton, Majors Willis R.
Taylor, Malcolm C. Grow, Captains
Donald W. Benner, Elmer P. Rose, Otto C.
George, Neil B. Harding, George C.
Macnair, James H. Wallace, Allen W. Reed,
Herbert E. Rice, Ward J. Davies, John F.
Guillett, Thayer S. Olds, James W. Brown,
Jr., Clarence T. Mower, 1st Lieuts.
James W. McCauley, Robin B. Epler,
George G. Northrup, Lawrence B. Kelley
and P. Ernest Gabel.

The enlisted mechanics, all of whom
were assigned to the bombing planes,
were Technical Sergeant Vernon Mick,
Staff Sergeants Harry A. Terrell, George
D. Malkemus, Elmer H. Meyer, Ross P.
Holland, Roby C. Davis, Richard W.
Davenport, Elmer L. Hill, Clark H.
Curtis, Sergeants Walter A. Jackle,
Harry P. Jones, George Russell, Harry
McHayes, Henry T. Swanson, John B.
Stewart, Frank Bayne, Corporal Clyde E.
Gilmore, Private 1st Class George T.
Baker, Privates Christopher J. Davis,
Robert P. Stewart, George R. Brownworth
and Edward F. Brown.

The bombardment planes were assigned
to France Field, Panama Canal Zone.

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GUNNERY PRACTICE AT BARKSDALE FIELD

Pilots of the 1st Pursuit Group,
Selfridge Field, Mt. Clemens, Mich., partic-
ipating in aerial gunnery practice
on ground targets at Barksdale Field,
Shreveport, La., continue to arrive and
depart. As soon as those officers fir-
ing have completed practice, they re-
turn to the home station, and others
are ordered to Barksdale Field for prac-
tice. It is expected that the gunnery
practice of members of the 1st Pursuit
Group will be completed about April 15,
1936.

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SELFRIDGE FIELD HAS CANADIAN VISITORS

Forty members of the Essex Scottish
Regiment from Windsor, Ontario, Canada,
were guests of the noncommissioned of-
ficers of Selfridge Field, Mich., on
February 22nd. Major Ernest Clark, com-
manding Selfridge Field, welcomed the
visitors to the post on their arrival.
Captain Brown, representing the Command-
ing Officer of the Regiment, and Regi-
mental Sergeant Major Parker, each gave
a short address before the assemblage.
The visitors made the occasion most en-
joyable by furnishing bagpipe music.

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Captain Leon E. Sharon, Air Corps, is
under orders to report to the Commandant
of the Air Corps Tactical School, Maxwell
Field, Ala., for duty on the staff and
faculty, upon completion of his present
course of instruction at this school.

MORE AERIAL SEED SOWING IN HAWAII

Four airplanes from the 23rd Bombard-
ment Squadron, Luke Field, T.H., were
utilized in sowing seeds of the Haole
Kao, or white Hawaiian mahogany tree,
over eroded areas on the Island of Oahu
on January 20th and 23rd, last. Mr.
G. S. Judd, Territorial Forester, fur-
nished 2,000 pounds of seed that was di-
vided among the four airplanes.

Major A. G. Liggett and Lieut. M. S.
Summerfelt scattered half the seed
along the southern slope of the ridge
which separates Waimanalo and Kaapa
Pond, near Koko Head. Lieuts. B. A. Bunch
and J. G. Armstrong scattered the re-
mainder of the seed over a pocket in the
Waianae Mountains near Kepuhi Point and
Barking Sands. An area of over seven
square miles was covered in about half
an hour.

The Air Corps has dropped seed in this
manner before with excellent results, so
the present project had the whole-hearted
approval of General James B. Gowen,
Acting Commander of the Hawaiian Depart-
ment.

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TC-14 AIRSHIP IN TEST FLIGHT

The TC-14 Airship at Scott Field,
Belleville, Ill., was flown in a test
flight on February 28th with its third
motor, a 100 horsepower pusher type, in
operation. Although no effort was made
to reach the maximum speed on this
flight, the Scott Field Correspondent
says that it is estimated that the air-
ship, with all three motors, will reach
a speed in excess of 85 miles an hour.

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PURSUITERS RETURN FROM WINTER MANEUVERS

The three officers and 30 enlisted men
from the First Pursuit Group, Selfridge
Field, Mt. Clemens, Mich., who departed
from that station on January 31st to
participate in the Winter Test Maneuvers
of the GHQ Air Force at Burlington, Vt.,
returned to their home station on Febru-
ary 20th.

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LANGLEY BOMBERS FOR WINTER MANEUVERS

On January 31st, nine B-10B airplanes,
furnished by the 20th, 49th and 98th
Bombardment Squadrons, Langley Field, Va.,
proceeded to Concord, N.H., to partici-
pate in Winter Test Maneuvers. Twenty
officers and 75 enlisted men were assign-
ed to this flight. The missions during
these maneuvers consisted of high altitude
endurance tests and attacks on Burlington,
Vt.; Mitchel Field, N.Y.; Boston, Mass.,
and Portland, Maine.

On February 18th, twelve B-10B planes
departed for Mitchel Field for the purpose
of ferrying enlisted men back to Langley.

FIRST ANNIVERSARY OF THE GHQ AIR FORCE

Prior to March 1, 1935, all Air Corps units in the United States were under the direct control of the Corps Area Commanders in whose territory the units were stationed. Under this system it was impracticable to secure coordinated thought leading to effective training for combat. And combat is the only reason for the existence of any Air Force. On several occasions in the past when Air Corps maneuvers were held, it was necessary to appoint a commander and improvise his staff to conduct the exercises. It became increasingly evident that improvisation of command echelons on the spur of the moment was not conducive to efficiency.

The creation of the GHQ Air Force, under an Air Corps Commander for the first time in the United States, brought together the combat air units and provided the machinery for effective coordinated training in peace and combat in war.

Several noteworthy accomplishments form a record of the GHQ Air Force during the first year of its existence. The average monthly flying time per GHQ Air Force airplane and per pilot during the past year has been materially increased. In spite of this additional flying, the percentage of aircraft continually in commission has risen. Whereas on March 1, 1935, but 9% of pilots assigned to the GHQ Air Force were qualified instrument flyers, on February 1, 1936, 84.6% of all pilots have been qualified to fly by instruments. It is expected that this high average will be maintained or even bettered by constant practice and periodic tests.

Realizing that future combat operations of the GHQ Air Force in the defense of the United States will require long flights over the ocean out of sight of land, it was decided to stress training in aerial navigation both by dead reckoning and by celestial observation without the use of known reference points. This training has been materially impeded through lack of airplanes and instruments suitable for the purpose, but considerable progress has been made as evidenced by many flights made on both coasts to considerable distances out of sight of land or vessels.

Upon the creation of the GHQ Air Force, everyone of its units proved by actual inspection and tests to be seriously deficient in aerial bombing and gunnery, which in the final analysis is the only reason for the existence of the Army Air Corps. Along with navigation, bombing and gunnery have been stressed, and it is gratifying to note that combat proficiency has been more than doubled.

During the past year numerous field exercises or maneuvers have been held. In the belief that training should progress in an orderly manner from lesser

to greater undertakings, the exercises held progressed from squadron to group, and then to wing exercises. It was possible to hold only one exercise in which all three wings of the GHQ Air Force were involved, namely, the one in Southern Florida from December 1st to December 15, 1935. Even this exercise was on a very modest scale, due to the fact that the numbers of modern tactical airplanes assigned to the GHQ Air Force numbered only about 165. This exercise was primarily designed as a test of Air Corps communications and to learn from actual experience just what was needed in the way of equipment, personnel and training to set up and operate the system of communications so vital to the efficient functioning of an Air Force. Advantage was also taken of the opportunity to determine the length of time required to concentrate the GHQ Air Force from one coast to the other. From the moment the "go-ahead" was given until the last unit was on the airdrome, in Southern Florida, required but twenty-two hours and fifty minutes elapsed time. Units from California, Michigan, Louisiana and Virginia participated.

Another interesting exercise involved two wings. About sixty airplanes concentrated in New England in February, 1936, for exercises under conditions of extreme cold. Daily operations for two weeks took place with the GHQ Air Force station, Mitchel Field, Long Island, as a base, and with operating airdromes at Concord, New Hampshire, and Burlington, Vermont. Many valuable lessons concerning cold weather operations were learned.

The concept of the GHQ Air Force is a force ready at all times to undertake combat operations immediately upon the outbreak of war. Its operations in the defense of the United States will be of more importance and more decisive during the early phases of an attempted invasion, than at any later time. The War Department has wisely got for the GHQ Air Force objective a unit trained, supplied and equipped in time of peace to be ready for operations immediately upon the outbreak of war. To meet the standards set will require a long time. Whereas the "Baker Committee" recommended 980 airplanes for the GHQ Air Force, its strength in tactical airplanes, both modern and suitable as to type, on January 1, 1936, was 174, including those in depot overhaul. In addition there were assigned 181 unsuitable obsolescent tactical airplanes and 57 transports and training airplanes. Although the numbers of modern and suitable tactical airplanes are now being increased by deliveries of new airplanes ordered from the factories many months ago, it will be years at the present rate before the objective of 980 can be reached.

Accompanying the shortages in airplanes,

there are serious shortages in personnel, funds for field exercises and manuevers, necessary equipment, air bases, and depot repair facilities.

In resumé on this its first birthday, the GHQ Air Force has made marked strides in spite of handicaps. Many nations abroad have embarked on programs of tremendous expansion in the air, but none of them surpasses the United States Army GHQ Air Force in the high quality of its personnel, airplanes, and accessory equipment. With continued public support, after a few more birthdays, it should reach such a state of vigorous maturity as to form a strong deterrent to any nation contemplating an attack on the United States. It should prove itself a powerful element in our National Defense should war, nevertheless, unhappily ensue.

The creation, maintenance, and training for combat of even the small Air Force deemed necessary for the air de-

fense of the United States, is a tremendous undertaking, and one which will require much concentrated thought, study and financial support to complete. The creation of the GHQ Air Force under one head constitutes the greatest forward step that has been made in national defense in this country since the World War. It could not have been expected that such an organization could be perfect from the beginning, and many details need readjustment. As required by the directive which created the GHQ Air Force, recommendations based on the experience gained to date have been submitted to the War Department, and are now being studied by the War Department General Staff.

The greatest single national defense need to make effective the nation's first line of defense, the GHQ Air Force, is a balanced program of airplanes, personnel, equipment, bases, and repair facilities.

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NEW CLASS REPORTS FOR TRAINING AT KELLY FIELD

The new class of students reported to the Advanced Flying School, Kelly Field, Texas, on February 21st. These students arrived a few days earlier than usual, in order to make room at Randolph Field for the new class.

After spending the first few days in getting settled, the class began ground school on Thursday, February 27th. Flying training was scheduled to begin on Monday, March 2nd, but poor flying weather caused the postponement of their first flights until Thursday, March 5th.

This class consists of 9 officers and 52 Flying Cadets, who arrived from Randolph Field; and 2 Flying Cadets who were held over from the last class at the Advanced Flying School. Assignments to specialized training were made as follows: Attack, 9 Flying Cadets; Bombardment, 4 officers and 24 Flying Cadets; Observation, 5 officers and 9 Flying Cadets; Pursuit, 12 Flying Cadets.

A course in the preparation, rendition and purpose of efficiency reports has been added to the ground school curriculum, and check flights on instrument flying added to that course.

In the approximately 3½ months allowed to train this class, they will spend at least 150 hours in classrooms at ground school and 135 hours in the air. This does not include, of course, time spent on drill, inspection, supervised athletics, practical instruction in the organizations, or the ground instruction given by each training section.

This class is scheduled to graduate during the latter half of June, 1936.

The 9 Flying Cadets assigned to the Attack Section are enumerated, as follows:

Converse, Lawrence F. Mears, Frank H.

Cullerton, Edward F. Reynolds, John N.
Fausel, Robert W. Russell, Clyde R.
Griffith, Willard D. Schaetzle, George E.
Trembley, Wonderful A.

BOMBARDMENT SECTION (4 Officers, 24 Cadets).

Officers

Captain Reginald R. Gillespie, Air Corps
Captain Wilfred J. Paul, Air Corps
1st Lt. Richard T. Coiner, Jr. AC (Cavalry)
2nd Lt. Gene E. Tibbetts, A.C. (Infantry)

Flying Cadets

Beardsley, Melville W.	Miller, William W.
Bicking, Charles W.	Nevitt, William R.
Bronson, Howard F., Jr.	Osborn, Roy W.
Burke, Kevin	Osher, Norman C.
Chapman, Charles T., Jr.	Peterson, Homer F.
Curry, William L.	Powers, Robert B.
Eyre, Lloyd	Ridings, Donald E.
Faulkner, Ted S.	Sandegren, Thomas E.
Grove, Robert L.	Sluder, Chester L.
Hardy, Robert F.	Strieber, Edward M.
Jones, James M.	Thomas, Jack
Ketcham, Edward W.	Warner, Jo K.

OBSERVATION SECTION (5 Officers, 9 Cadets).

Officers

Captain Karl S. Axtater, Air Corps
Captain Uzal G. Ent, Air Corps
Captain John G. Salsman, Air Corps
1st Lieut. Ralph E. Holmes, Air Corps
2nd Lt. William J. Holzappel, Jr. A.C. (C.E.)

Flying Cadets

Catlin, Ralph W.	Moore, Andrew D.
Hampton, Thomas K.	Pechuls, John A.
Flolo, Russell L.	Retherst, William
Martin, Ray H.	Schultz, Herbert D. Jr.
Zehring, Paul W.	

PURSUIT SECTION (12 Flying Cadets)

Baumler, Albert J.	Haws, Jesse W.
Eledsee, James L.	Helmick, Paul F.
Boyer, Jimmy V.	McCloskey, Richard D.
Buller, Howard L.	Michael, Bruce E.
Dane, Paul H.	Saehlenou, Hadley V.
Ferguson, James	Whitfield, Hervey H.

V-6969, A.C.

DEATH OF A NOTED EYE SPECIALIST

A sudden heart attack marked the passing on Thursday morning, March 12th, of the world's greatest figure in Ophthalmology, Dr. William Holland Wilmer, who of late maintained a practice in Washington, D.C. During his brilliant career, his patients were legion and ranged from the poor and lowly to persons prominent the world over. The King of Siam came half way around the world to receive treatment at Dr. Wilmer's skilled hands. He ministered to four Presidents of the United States, various members of the Cabinet, Ambassadors, Justices of the Supreme Court, prominent bankers, novelists, editors, inventors, opera stars, school teachers, baseball players, etc.

Dr. Wilmer left behind him the Wilmer Ophthalmological Institute at Johns Hopkins University, Baltimore, Md., a lasting monument to the man who devoted all his life to his fellow man. The institute, a \$4,000,000 tribute to the beloved physician from former patients, is believed to be the world's most complete institution of its kind - a haven that offers rays of new hope to people all over the world suffering the misfortune of a failing eyesight.

Although he was in his 73rd year, Dr. Wilmer was, until the day of his death, carried by the War Department as a member of the Medical Reserve Corps, his rank being that of Brigadier-General, which appointment was tendered him on November 4, 1921. He saw active service in the Medical Corps of the Army during the World War, both in the United States and overseas, and the work he performed was of such an outstanding character as to earn the award of the Distinguished Service Medal, which decoration was conferred upon him May 3, 1919. On August 4, 1924, the French Government made him a Commander in the Legion of Honor.

Dr. Wilmer's first appointment in the Army was as a first lieutenant, Medical Reserve Corps, in 1911. During the World War he was commissioned a Major in that Corps and placed on active duty on October 1, 1917, in the Office of the Chief Surgeon, Aviation Section, Signal Corps, Washington, D.C. He was subsequently promoted to Lieutenant-Colonel and to Colonel.

Assigned as a member of the Medical Research Board, he made frequent trips to the Medical Research Laboratory at Mineola, L.I., New York, for the purpose of studying the physical and physiological conditions which affect airplane pilots. On August 7, 1918, he departed for overseas service and was assigned to station at the Third Aviation Instruction Center at Issoudun, France. His service overseas carried him to various aviation camps and training centers in connection with medical aviation problems.

During the month of January, 1919, he was one of three American medical officers who attended the Interallied Medical Conference in Rome, Italy.

In recommending Colonel Wilmer for the award of the Distinguished Service Medal, Major-General Mason W. Patrick, Chief of the Air Service, A.E.F., and later Chief of the Air Corps, U.S. Army, worded the citation therefor as follows:

"A member of the National Council of Defence, chairman of one of its important subcommittees, a member of the Medical Research Board and in charge of the Medical Research Laboratory at Mineola, L.I., surgeon in charge of medical research laboratories, Air Service, A.E.F., since September, 1918. In all of these capacities Colonel Wilmer has rendered most distinguished service. While on duty with the American Expeditionary Force, Colonel Wilmer's thorough knowledge of the psychology of flying officers and the expert tests applied efficiently and intelligently under his direction have done much to decrease the number of accidents at the flying schools in France and have established standards and furnished indications which will be of inestimable value in all future work to determine the qualifications of pilots and observers. The data which have been collected under Colonel Wilmer's direction are an evidence of his ability, his painstaking care and of his thorough qualifications for the important work entrusted to him. The laboratory established by him at Issoudun and the new methods, instruments, and appliances devised under his direction for testing candidates for pilots and observers have attracted the attention and been the subject of enthusiastic commendation by officers of the Allied Services who have had the opportunity to examine them, and no doubt will be of great importance in promoting the safety and the more rapid development of aerial navigation."

Colonel Wilmer returned to the United States in the latter part of March, 1919, and on April 4th of that year was assigned to duty on the Administrative Staff, Office of the Director of Air Service, Washington, D.C. He was honorably discharged from the military service, May 15, 1919, and shortly thereafter commissioned in the Medical Reserve Corps.

Dr. Wilmer was born in Powhatan County, Va., August 26, 1863. He received his preparatory education at Episcopal High School in Alexandria, Va., and obtained his M.D. degree at the University of Virginia in 1885. He studied subsequently at New York Polyclinic Hospital and in several European hospitals. Honorary degrees were conferred upon him by Georgetown, Princeton and New York Universities. He began his active medical career in New York City in 1887. Later he

(Continued on page 14)

ZERO WEATHER OPERATIONS BY WASHINGTON NATIONAL GUARD AIRMEN
By Lieut. Ellsworth C. French

Some Air Corps officers go on so called Arctic Patrol Flights because they are ordered to do so, while others go voluntarily apparently because they like to. Perhaps it is because the 41st Division Aviation, Washington National Guard, Felts Field, Spokane, is the most northern Army Air Corps station in the United States that causes the pilots of this organization to laugh at zero weather. At any rate, the "Winter Games" for the 41st Division Aviation are thought to be over for 1936. In their wake is a vast amount of valuable information about flying conditions and airplane and motor repair, with the temperatures hovering 40 degrees below zero, gained in the Rockies and Promontory Mountains in Montana and Utah, respectively.

As a sequel to all such things there naturally comes some fun, which is scheduled to result in the presentation of the Air Corps' famous "Dumb Bell" and the joking suggestion that the 41st Division insignia, an Ace of Spades with a dagger through it, should be changed to a Four-Leaf Clover. But come what will, Major Robin A. Day, Instructor and Commanding Officer, is pleased with the results, regarding same as a credit to any Regular Army Air Corps organization.

Things started to happen in 41st Division Headquarters when a telegram was received from Lieut. E.A. Malstrom, at Salt Lake City, stating that he cracked up a Douglas O-38 when taking off from there for his home station, enroute from a cross-country trip to Denver. A heavy blanket of snow covered the Salt Lake field, making the take-off slow. What appeared to be a drift of snow turned out to be a snow-covered pile of dirt left by WPA airport workers, and which the landing gear "just quite" did not clear. Results: no injuries to pilot or passenger, Private Kavanaugh; to airplane, a crumpled lower left wing, wrecked left landing gear, damaged propeller and motor. The personnel returned home by motor bus.

Necessary repairs were shipped immediately from the depot at San Diego, but reports from the Air Corps Reserve detachment at Salt Lake City indicated that ten days or more would be required to repair the airplane.

To speed the repair work, Lieut. Malstrom, about a week after the accident to his plane, took off from Felts Field to fly Sergeant Warren Fackenthal, mechanic, to Salt Lake City. Between Boise, Idaho, and Salt Lake City, a heavy snow storm was encountered and darkness set in. The SCR-134 radio failed to function, despite the skilled operation by Radio Specialist Fackenthal. Only a faint voice could

be heard now and then. For miles north of Promontory, Utah, the natives are still telling the story of how Lieut. Malstrom was flying between the telephone poles in the snow storm.

"We milled around in the mountains as long as we could, but there wasn't another place to land," Lieut. Malstrom related. "What proved to be Promontory offered the only available landing field, and that was a farm."

But Old Man Snow had laid his second trap for Lieut. Malstrom, who was just about to glory in his emergency landing when a large snow drift was encountered near the end of the roll. Results: Douglas O-38 nosed over, spar broken in two places, upper wing damaged, also fin and rudder, no injuries to pilot or passenger. 5:35 p.m.

Promontory is historically prominent, it being the place where President Cleveland drove the golden spike at the dedication of the Southern Pacific Railroad many years ago. A monument marking this event is still standing, but that is about all there is left of Promontory

"Some people may remember Promontory because of what President Cleveland did there," Lieut. Malstrom declared, "but I'll never forget it because of that 43-degree below zero temperature that prevailed as we crawled out from under the airplane." It developed that the Lieutenant called "his shot" when he picked Promontory as the place to nose over. Once upon a time Promontory was a railroad roundhouse town, but not any more. The remains of the roundhouse stood in about four feet of snow, and trains from Salt Lake City only use the rails to Promontory every fourth day.

"It was a lucky break," continued Lieut. Malstrom. "Thirty minutes after we nosed over, along came a train for Salt Lake. There wouldn't have been another for four days. They called this one the 'Rabbit Special,' because it carried a lot of Salt Lake hunters who were returning from a week-end rabbit drive."

News of the second crack-up near Salt Lake resulted in considerable thought, but no alarm at 41st Division Headquarters. Somewhere in regulations is a provision that in case of accident the nearest Air Corps station will take command of the situation. But the Air Corps Reserve detachment at Salt Lake were apparently still "swamped" in their attempt to repair the first Douglas O-38 of about a week before. Therefore, a caravan of a Chevrolet truck, a trailer and a private touring car was organized at Division Headquarters for the trek of several hundred miles over snow and ice-covered roads, in sub-zero temperatures, for Promontory. Sergeant John Simpson, Regular Army Sergeant-Instructor, headed the party, composed of Mechanic Sergeants Andy Anderson,

Bill Finch and Elmer Erickson.

Major Day, a trailer enthusiast, donated his Silver Dome trailer to the cause. Food was stored in the truck, also a drum of gasoline, tools, and a pair of skis which, it was hoped, might be helpful in getting the ship out from Promontory.

Days of sub-zero driving in the mountains found the overland party snowbound when within about four miles of Promontory. The snow was about five feet deep and the temperature 43 below, with a stiff ground wind. Because of worse conditions in their locality, the Utah State highway department could not respond to the appeal to assist the snowbound auto caravan. Finally, a team and sleigh came to the rescue, and the party was transported into Promontory. Immediately, the Southern Pacific railroad was notified to send a car in which to ship the airplane to San Diego and, fortunately, the message arrived in time to catch the train on its "fourth day trip."

Flying suits, fur-lined boots and helmets constituted the clothing for the work party, which had the inquisitive volunteer assistance of the natives. Snow had continued to fall, covering part of the nosed-over airplane. Lines were fastened to each wing and made safe as the work of righting the ship started. As a team of horses pulled the ship up on its nose, one of the lines broke by the force of the wind. Here good fortune played an important part. The wind spun the ship around on its nose, leaving it in the proper flying position.

The greatest difficulty came in loading the ship into the automobile-end door freight car. The wings were removed, but the motor and landing gear remained intact. Crow bars, however, sprung the doors sufficiently to permit wiggling the fuselage back and forth so as to get the ship in the car.

These hardships, however, were not without fun and interest. Promontory is surrounded by a sheep and cattle country. News of the crashed airplane reached the hills, and on Sunday the cowboys with their 10-gallon hats and chaparejos came to town to see the fun. The inspection of the airplane satisfying their curiosity, they all gathered at the country store, where they munched peanuts, tossed the shells on the floor and warmed their shins.

Sergeant Erickson became the "aerial cowboy" as, wearing his flying suit and helmet, he rode back and forth on a pony for tools. Deep snow made it impossible for the pony to make the four miles in less than four hours.

But things were going on over Red Rock, Montana, where Lieut. Dale Swartz and Sergeant Miller Cowling, returning from a cross-country flight to Chicago, were forced to land on a farm. A temperature

of more than 40 degrees below zero welcomed them. No apparent damage, however, resulted to the airplane, which was started the next day after considerable difficulty. Enroute to Butte, Montana, from Red Rock, the oil gauge dropped to zero, resulting in a forced landing on the emergency field some distance from Whitehall, Montana, where the altitude is 5,000 feet, and with a temperature still lower than 40 degrees below. Inspection of the motor showed that it was burned up. Another motor was shipped from Felts Field to Whitehall.

The motor caravan drove from Salt Lake to Whitehall, crossing three ranges of mountains.

"It was more than 50 degrees below in Whitehall at night, but it warmed up 15 or 20 degrees in the daytime as we changed the motors," reported Sergeant Simpson.

Trees were cut to build a tripod for the removal of the burned motor, and a large truck was hired to transport the new motor to the field. It was here that the mechanics developed a unique idea for changing motors. The tail of the airplane was raised to a flying position and the hose of the ship shoved into the covered truck body which contained the motor. A large canvas was spread over the truck and airplane, thus forming a shelter under which the mechanics worked, again wearing flying suits against the sub-zero temperatures. "The tools would get so cold, and our hands were so cold that we would drop the tools just like they were hot," said Sergeant Anderson. "About four days were required to change the motor."

Heaters were operated inside of the truck body to provide heat for the workmen. The battery of the airplane was almost completely discharged, but after a prolonged warming the motor started after being pulled through twice.

As Lieut. Swartz took off for Felts Field, the motor caravan started its trek for Felts Field. Its arrival there marked the completion of a journey of 2700 miles on snow and ice over the largest mountains in the West and under sub-zero weather conditions.

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During the course of the Winter Test Maneuvers Major Barney M. Giles, of Langley Field, shortly after midnight on the morning of February 10th, departed from Concord, N.H., for Cape Cod, Mass., to locate seven CCC youths, marooned on drifting ice floes off their camp at Brewster, Mass. Major Giles sighted the youths before daybreak and sent messages to Concord to dispatch two airplanes with food and blankets for them. The airplanes promptly arrived over the scene, dropped the food and blankets, and returned to Concord before the outside world was aware of the location of the youths.

The Langley Field squadron in the maneuvers completed all required tests on February 14th, and returned to the home station the following day.

DEVELOPMENT OF MILITARY AVIATION IN PROGRAM OF NATIONAL DEFENSE

In an address over the radio on the night of March 5th, the Hon. William W. Rogers, M.C., of New Hampshire, a member of the House Military Affairs Committee, said:

"On July 2, 1926, Congress passed the act creating the Army Air Corps. Although nearly 10 years have elapsed, we still have a deficiency therein of 361 Regular and Reserve officers, and unless the American people are fully informed as to the facts and bring the matter to the attention of their representatives in Congress the Air Corps will never be filled.

"Let me illustrate: In 1931 only 33 additional officers were commissioned in the Army Air Corps; in 1932 only 18 additional officers; in 1933 only 28; in 1934 only 17 additional officers; in 1935, 46 additional officers; and in the first half of the fiscal year 1936 we had a loss of 2 officers. Thus during the last preceding 5 1/2 years there have been added only 140 commissioned officers to the officer personnel of the Air Corps. At this rate it will require 15 years to add 300 officers.

"During such a period many officers will have been killed, others will die from natural causes, still more will be disabled and retired, and some will be retired on account of reaching the age limit of 64. It has been well said that adequate preparedness, first of all for air defense, second for sea defense, third for land defense, will promote the peace of our Nation and enable the American people to carry on the parts of Christian civilization with actual security.

"Last month I went to New Hampshire in an Army plane to witness the Air Corps maneuvers held by the Army Air Corps in New England and New York. When I speak of the Army Air Corps, of what do I speak? On February 12 it was reported in the press that the chairman of the Committee on Military Affairs, of which I have the honor to be a member, was seeking a corps of 4,000 planes by 1938. The press then reported that England had plans for 5,600 planes by March 1937, and that Germany now has from 7,000 to 10,000 planes.

"As to America's inadequate air defense, let me quote from the testimony of Maj. Gen. Oscar Westover, Chief of the Army Air Corps, given before the Appropriations Committee in December 1935, in which he said, 'It is estimated that not more than 736 airplanes now on order will be delivered during the fiscal years 1936 and 1937. During this time there will be estimated losses of 981 airplanes. The net result of these factors, therefore, will leave the Air Corps on June 30, 1937, with an estimated number of 779 project air-

planes, with about 529 planes classed as obsolete on account of having passed the 5-year age limit. Such of the 529 as are suitable for retention will have to be continued in use in order to permit necessary flying by Air Corps personnel. The number and type of airplanes now available in our foreign departments makes the air defense of these possessions almost impotent, and the same lack of airplanes is greatly handicapping the ground force in the training for their part of the defense.'

"Hon. Harry H. Woodring, Assistant Secretary of War, also testified before the Committee on Appropriations on January 16, 1936, that 'the Army Air Corps will have approximately 777 airplanes in its possession on July 1, 1936.'

"We get only 565 planes under the War Department appropriation bill which passed the House last month. Allowing for washouts and considering the recommendations of the Howell Commission and the Baker Board that we should have 2,320 planes, how does that leave us? Mr. Woodring was asked how many planes he was able to purchase under the 1936 appropriations, and he said: 'A continuation of the appropriation of the above size will never permit the Army Air Corps to reach its desired strength, as it will only take care of approximately yearly losses. I am not one who advocates more airplanes than we need for national defense, but I do say that the best service we can render our constituents, our States, and the Nation is to provide for rational Air Corps development, so that we may carry on without the loss of a single life on account of inadequate preparation.

"Gen. Oscar Westover, Chief of the Air Corps, testified that in the past 5 years 1,371 planes were delivered to the Army, while during that same time we lost 1,621 planes by obsolescence or wash-outs, leaving us with a loss of 250 planes during the last 5 years.

"We are now nearly 10 years behind in the development of the Army Air Corps. The following is a list of airplanes on order or obtained during the last 6 years:

1930	555	planes
1931	364	"
1932	285	"
1933	118	"
1934	222	"
1935	401	"

"It has been reliably estimated that we must have 800 planes per year if we are to increase the present strength of our air force. The general headquarters air force for adequate self-defense must have a minimum of 980 serviceable airplanes able to take the air at any time. In spite of this fact the maximum number yet supplied to the general headquarters air force is 383 planes. When the recent maneuvers took place in Florida General

Andrews was able to take the air with only 162 serviceable planes.

"As showing the utter inadequacy of this situation from the standpoint of national defense, let me emphasize the fact that all great nations now have huge airplane carriers, which are, in fact, floating landing fields, to enable them to carry aerial warfare to enemy shores. They also have floating seaplanes and mother ships.

"We are advised that only 30 tons of explosives were dropped on London in the World War, resulting in the loss of 1,200 lives, while today planes are being constructed, any one of which will be able to drop 10 tons of explosives. The situation is well emphasized by the fact that German seaplanes of existing types now alight on the South Atlantic Ocean, between Africa and South America, to moor astern of a station ship (S.S. Westphalian). This vessel is an ordinary merchant type, supplied with aviation fuel and other serving facilities. Fuel and oil are transferred to the seaplane on the water. Meager reports mention experiments with a canvas ramp astern on which the seaplane may be hauled; also trials of canvas shelters for protection during refueling operations. The military significance of this commercial

'mother ship' for seaplanes appears to have been ignored. As seaplanes become larger their ability to alight safely on the ocean increases. Acknowledging only the existing sizes of seaplanes, it is rather startling to contemplate that small, inexpensive merchant ships are capable of serving as ocean supply bases for transoceanic bombing planes.

"The Federal Aviation Commission has been advised that seaplanes are now in course of design that can transoceanic 10 tons for a nonstop flight of 2,000 miles. A single seaplane of that type - which is a prospect for the immediate future - then could drop 10 tons of bombs on any American coastal city simply by prearranging a rendezvous with a small servicing vessel at sea a thousand miles from the coast line.

"These facts strongly emphasize that our homes in New England and throughout the Nation are no longer protected from air attacks, because of the wide extent of the Atlantic and Pacific Oceans, and we must govern ourselves accordingly if we are to maintain adequate national defense.

"In conclusion let me say that I am a firm believer in national economy, but the neglect shown in the development of Army aviation is nothing but false economy. While foreign nations are making available thousands of planes for attack and aggression, I ask you without further delay to advocate a policy of national defense by urging your representatives in Congress to enact legislation which will enable the United States of

America to bring its Army Air Corps to 2,320 planes, as advocated by the unanimous report of the Baker board and the Howell commission.

"The enactment of this legislation is essential to achieve a full realization of the words of counsel uttered by our first President, George Washington, when he said, 'We should maintain a respectable defensive posture.'

"For the United States of America the development of air power because of its limited range is purely a weapon of defense, but such development as proposed herein is necessary for adequate defense.

"In the matter of national defense we frequently fail to recognize the relative protection afforded by an adequate Navy. We must remember that the hostile fleet is the main objective of the home fleet, therefore depends largely on the action of the enemy. Since our fleet must be free to meet the enemy fleet, we cannot predict what portion of our coast will be protected by our Navy or how long such protection may last. As a result of this important factor we must realize the necessity of an adequate Air Force in the maintenance of an effective national defense."

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EXCITING RIDES IN TRUCKS AND PLANES

By the Luke Field Correspondent

Tobogganing in reconnaissance trucks is really a most novel experience. Did you ever ride over one of Schofield Barracks red mud trails (they call them roads) just after a heavy rain? During our last artillery adjustment problem, several of our pilots (4th Observation Squadron) were at the battery C.P., observing the fire when a miniature cloud-burst fell on the firing range and forced cessation of fire. We climbed into our truck and started back to the flying field to get our planes. The red mud trail was a quagmire; one minute the truck was scraping against the hill and the next moment it would skid over toward the gulch, enabling the passengers on that side to have a very marvelous view of the 200-foot precipitous drop to the bottom of the gulch. Sliding sideways down a one-way road in a truck is very hard on the nervous system, and everyone was glad to climb into the cockpit. The hazards of flying seemed trivial after that trip.

The short "hop" home, however, was a memorable one. The terrific air currents coming over the mountains tossed the O-19's around with little regard for personal comfort. Captain Upthegrove will testify that trying to observe fire and operate a radio with rain pouring down your neck and yourself half way out of the cockpit most of the time is a great Hawaiian sport. An indication of the force of the air currents is the fact

that of the five planes on the flight, three of them sprung leaks in their gas tanks.

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"INSIDE AIRWAY" TO ALASKA

Members of the 41st Division Aviation, Felts Field, Spokane, Wash., have seen another one of their wishes come true.

For many years they were active in the promotion of the Northern Transcontinental Airway, now a reality. During recent months they have been equally interested in the development of the so-called "inside airway" between Spokane and Alaska. Even hoping against hope that one of them might some day be authorized to fly the "inside route" to Alaska, they have long waited for the first flight from Spokane to the interior of the northland.

It came on February 28th, when Joe Crosson, Alaska's No. 1 birdman, and his co-pilot, Walter Hall, took off from Loon Lake, 30 miles north of Spokane, in their ski-equipped Lockheed Electra over the "inside airway" to Tanana, Alaska, home station of the Pacific Alaska Airways, a subsidiary of the Pan-American Airways.

As none of the commercial hangars on Felts Field was large enough, including their present storage of commercial ships, the Division Aviation extended Crosson the privilege of housing his airplane in the Division hangar while he switched from wheels to skis. It was an interesting observation as Crosson installed a pair of newly designed duralumin skis, costing \$25,000, and designed by Lockheed factory engineers, who assisted with the installation under the observation of a representative of the Department of Commerce.

The Electra was powered with "Wasp Seniors." Empty, the ship lifted its skis from the snow in 11 seconds after the take-off. Loaded, a "coast" of 20 seconds was required before the ship was in the air. It was the same airplane which Crosson utilized to return to the United States the remains of the late Will Rogers and Wiley Post. The plane had been sent to the factory for a major overhaul.

"It is much shorter from Spokane to the interior of Alaska over the 'inside route' than the coastal route, and the winter flying conditions are much better," Crosson stated. His take-off from 15 inches of ice at Loon Lake rather than from Felts Field was rendered necessary by a chinook wind which freed the airport of all snow overnight.

Crosson's path of flight over the "inside route" went north from Spokane to Prince George, thence to White Horse, Fairbanks and Tanana, a distance of 2200 miles. He carried 265 gallons of gasoline in his tanks and 150 gallons

in cans.

Known often as the "mercy flyer" because of his daring and rescue flights in the north country, Crosson did not leave here without a mission of great importance awaiting him near his base. Before he left he was handed an Associated Press dispatch from Fairbanks, Alaska, where friends of Mary Joyce asked that Crosson search for Miss Joyce on his homeward flight. Miss Joyce and her Indian guide, Jimmy Allen, have been missing since February 9th, when they started with a dog team on a 300-mile trek across a sparsely settled frozen region.

Crosson's plane took the air easily off the ice. He circled low once around the lake and disappeared quickly into a tree-top fog which hovered over it. Special weather reports indicated he would have no trouble in the "inside airway."

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NEW BOOK ON AVIATION

"This Flying Game" is the title of a new book recently published by Funk and Wagnalls, New York. The authors are Brigadier-General Henry H. Arnold and Major Ira C. Eaker, Air Corps. In this authoritative and profusely illustrated volume are the answers to the almost countless questions of eager air-minded boys and their elders, viz: How can I get into aviation? What training do I need? etc. These questions and many others are competently handled by the authors.

The book is designed not merely for the would-be flyer, but for all readers interested in aviation. The authors tell of the technique of flight, of the making of airmen and airplanes, of aviation's present problems and of its hopes, and in the final chapters they venture into prophecies concerning the future of aviation.

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FERRYING FLIGHTS BY SELFRIDGE FIELD PILOTS

Departing from Selfridge Field, Mt. Clemens, Mich., on February 22nd for Seattle, Wash., for the purpose of procuring and ferrying to their home station P-26C airplanes manufactured by the Boeing Company, were Majors Warren A. Maxwell, Alfred A. Kessler, Jr., Captains Earle E. Partridge, Dixon M. Allison, Daniel C. Doubleday and Hanlon H. Van Auken.

The five pilots, led by Lieut.-Colonel Ralph Royce, Commanding Officer of the 1st Pursuit Group, who departed on February 6th for the Boeing plant at Seattle, Washington, to procure P-26C airplanes, returned to Selfridge Field in these new planes on February 28th. The four other pilots were Majors Edwin J. House, Fred C. Nelson, George P. Tourtellot and Captain Emmett O'Donnell, Jr., Air Corps.

came to Washington and practiced in the nation's capital until 1925, at the same time being a professor of ophthalmology at Georgetown University. He then became director of the Wilmer Ophthalmological Institute at Johns Hopkins Hospital in Baltimore, and taught at Johns Hopkins University while supervising work of the hospital institute. In 1934 he returned to Washington to carry on private practice.

Dr. Wilmer was a member of numerous Medical Societies, both civil and military, as well as patriotic societies and organizations. On innumerable occasions he rendered invaluable assistance to the Army medical staff at the Walter Reed General Hospital as a consultant in ophthalmological cases.

The Air Corps shares in the universal regret which the demise of this great specialist has occasioned, being fully conscious of the outstanding pioneering service he has rendered to safeguard flying and reduce casualties. His contribution to aviation proved of incalculable value in the introduction of certain physical standards during the World War and in the years which followed which are required to be met by those seeking a career in flying before airplanes are entrusted to their care.

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NATIONAL DEFENSE DEMONSTRATION AT SPOKANE

By Lieut. Ellsworth C. French

National Defense is to be presented in a manner that will win for it thousands of new friends throughout the Northwest at the Military Defense Demonstration to be staged at Felts Field, Spokane, Washington, the station of the 41st Division Aviation, on May 29, 30 and 31, 1936.

Approval of the program has been given by Spokane's most prominent business men, who have pledged their support to the demonstration and are working actively with the sponsors of the demonstration, namely, the 148th Field Artillery, Coeur d'Alene, Idaho; the 161st Infantry regiment and the 41st Division Aviation.

Both Governor Clarence D. Martin, Commander-in-chief of the Washington National Guard, and his Adjutant General, Brigadier General Maurice Thompson, are working with the committee in charge. The cooperation of the Reserve Army, Navy and Marine Corps groups in Spokane has been enlisted.

There is every prospect at this time that the demonstration will be the occasion for the largest assembly of military troops in the Northwest this year.

Every possible civilian contact is being made a part of the demonstration. Spokane Post No. 9, American Legion, is being asked to sponsor contests among local high schools for the purpose of selecting "Miss Memorial Day," who will

be crowned by the oldest member of the Grand Army of the Republic as a feature on the Memorial Day program.

Committees of the Spokane Chamber of Commerce are being asked to sponsor a banquet, or luncheon, at which visiting high ranking Army officers will be the honored guests. The aviation committee is being asked to sponsor an aviation conference at which the completion of all public works airports will be urged.

The Junior Chamber of Commerce is to be asked to cooperate in entertaining the visiting military officers and, possibly, to stage a military ball.

Efforts of the sponsoring organizations are being directed toward the actual demonstration. Major Edwin Patrick, Regular Army Instructor attached to the 161st Infantry regiment, is in command of the ground activities, while Major Robin A. Day is commanding the aviation activities.

Following their Federal inspection, all companies of the Infantry regiment will start specializing in special events for the demonstration.

The motor caravan that will move into Spokane for the demonstration will be a feature in itself. Infantry companies from Yakima, Pullman, Wenatchee, Prosser and Pullman will all come by truck.

The 148th Field Artillery from Coeur d'Alene, with its new motorized light field artillery equipment, will move in by truck. Although not officially invited, Lieut.-Colonel Howard Wright, commander of the 146th Field Artillery, Seattle, has stated that he desires to bring his organization over the Cascade Mountains to participate.

Colonel Louis Farrell, commander of the Regular 4th Infantry, Fort George Wright, proposes to camp his men at the airport during the demonstration and to participate in all reviews and parades.

Efforts of the committee are now being directed on the GHQ Air Force in an attempt to secure Regular Army Air Corps for the demonstration. Naval air officers in Seattle have already indicated their desire to attend the demonstration.

"More such demonstrations like the one planned by Spokane should be held throughout the United States," said Brigadier-General Carlos Pennington, commander of the 81st Brigade. "Much good will come to the services through such favorable contacts with the military. Too many people have the wrong impression of the service, but by actually mingling with the troops in the field, as they will at Felts Field, and seeing them operate, they will gain the correct impression and will have a feeling of pride about their military."

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Thanks are extended to Corporal Floyd A. Rice, 21st Airship Group Headquarters, Scott Field, Ill., who drew the attractive cover for this issue of the News Letter.

B I O G R A P H I E S

COLONEL RUSH B. LINCOLN, AIR CORPS

After a lapse of almost 14 years, Colonel Rush B. Lincoln, Air Corps, is back in a position in the Office of the Chief of the Air Corps which is quite familiar to him - that of Chief of the Personnel Division, which he held from November 13, 1918, to July 4, 1922.

Colonel Lincoln became affiliated with aviation, September 22, 1917, when he accepted a commission as Major in the Aviation Section, Signal Corps. At that time on duty with the 22nd Infantry at Fort Jay, N.Y., as Adjutant and Assistant Mustering Officer, he was ordered to Wilbur Wright Field, Fairfield, O., where he served as Executive Officer until December 12, 1917. He then reported for duty at Camp MacArthur, Waco, Texas, where he commanded the 1st Provisional Regiment, Aviation Section, Signal Corps, and was engaged in organizing and equipping squadrons for overseas duty.

On April 28, 1918, Colonel Lincoln reported for duty in the Air Division, Office of the Chief Signal Officer, Washington, D.C., and was assigned as Personnel Executive, a position he occupied until his appointment as Chief of Personnel. During his tenure of duty in the last-named position, he was on four months' detached service as student at the Army Balloon School at Ross Field, Arcadia, Calif., from which he graduated September 18, 1921, receiving the rating of "Balloon Observer."

A student in the 1922-1923 course at the Command and General Staff School at Fort Leavenworth, Kansas, he graduated in June, 1923, following which he was assigned to Scott Field, Belleville, Ill., as student at the Balloon and Airship School. He performed additional duty as Assistant Commandant of this School from May, 1924, to July, 1924, when he was assigned as student at the Army War College, Washington, D.C. He was rated "Airship Pilot" as of July 2, 1924.

Graduating from the Army War College, June 29, 1925, Colonel Lincoln was detailed as a member of the War Department General Staff, Washington, D.C., and assigned to the G-3 Division (Training Branch). On September 8, 1926, he was assigned as Chief of Air Section, G-4, Supply Division, and also to the Construction Branch of that Section of the General Staff.

Completing his four-year tour of duty as a General Staff officer, he reported on July 1, 1929, for duty as Air Officer of the 1st Corps Area, Boston, Mass., and he served continuously in this capacity until his assignment on February 17, 1936, to his present duty in the Office of the Chief of the Air Corps.

Colonel Lincoln was born on December 8, 1881, in Boonesboro, Iowa. He graduated from the Iowa State College of Agriculture and Mechanical Arts, with a B.S. degree, in 1904. Commissioned from the ranks as second lieutenant of Infantry, February 11, 1907, he served for several years previous thereto as private and as noncommissioned officer with the 2nd Infantry, and later with the 18th Infantry. He was promoted to 1st Lieutenant, 8th Infantry, June 7, 1911; to Captain, 22nd Infantry, July 1, 1916; to Major, Signal Corps, September 22, 1917, and to Lieut.-Colonel, Air Service, August 24, 1918. He reverted to his regular rank of Major on July 1, 1920, on which date he was transferred to the Air Service. On May 21, 1930, he was promoted to Lieut.-Colonel, and on August 1, 1935, to Colonel.

Colonel Lincoln served with his regiment at Jolo, P.I., June, 1907, to March, 1908. From May, 1908, to March, 1911, he served at Fort Thomas, Ky., and thereafter, until February 15, 1912, at Schofield Barracks, Hawaii. Proceeding then to the Philippines for the second time, he served with the 8th Infantry at various stations until February, 1914. Upon his return to the United States, he was on duty with the 3rd Infantry at Madison Barracks, N.Y., to October, 1914; as Professor of Military Science and Tactics at the Iowa State College of Agriculture and Mechanical Arts, Ames, Iowa, to July, 1916; with the 22nd Infantry on Mexican border patrol duty in Arizona, to March, 1917, and with this regiment at Fort Jay, New York, to September, 1917, when he transferred to the Aviation Section, Signal Corps.

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LIEUT.-COLONEL WM. C. McCHORD, AIR CORPS

A native of Lebanon, Ky., where he was born December 29, 1881, Lieut.-Colonel William C. McChord, Air Corps, at present on duty as Chief of the War Plans and Training Division, Office of the Chief of the Air Corps, has been affiliated with military aviation since the World War. Previous to that time he served with the Cavalry, in which branch of the service he was commissioned as second lieutenant on June 14, 1907, following his graduation from the United States Military Academy. He also graduated from the Central University of Kentucky, receiving the degree of B.L. in 1901.

Col. McChord was promoted to 1st Lieutenant, August 9, 1914, and to Captain, March 31, 1917. He graduated from the Mounted Service School, Fort Riley, Kans., in 1914; from the Air Service Tactical School, Langley Field, Va., in 1923; from the Command and General Staff School, Fort Leavenworth, Kansas, in 1924, and

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from the Army War College, Washington, D.C., in 1929.

Prior to his appointment as a Major, Signal Corps, November 16, 1917, Col. McChord served with the 1st Cavalry, which was stationed along the Mexican Border. From the latter part of November, 1917, to early in February, 1918, he served in the Air Division, Office of the Chief Signal Officer, Washington, D.C. He was then assigned for flying training at Rockwell Field, Coronado, Calif. Passing the required tests for the rating of Junior Military Aviator, he was given this rating as of May 31, 1918.

In June, 1918, Col. McChord reported for duty at Ellington Field, Houston, Texas, where he completed the course in Bombardment Aviation, serving also as Executive Officer of that station. On August 16, 1918, he assumed command of Park Field, Millington, Tenn., and served there for four months when he was transferred to Gerstner Field, Lake Charles, La., for duty as Commanding Officer. In March, 1919, he was transferred to duty in the Office of the Director of Air Service, Washington, D.C., where he served in various capacities, such as duty in the Finance Section, Supply Group; as a member of the Air Service Claims Board; as Assistant to the Chief of the Materials Disposal and Salvage Division, Supply Group, and Assistant to the Chief of the Property Division, Supply Group.

Assigned as Air Officer of the Central Department (later the 6th Corps Area) in July, 1920, Col. McChord served on this duty for two years, and following his graduation from the Tactical School and the Command and General Staff School, he was assigned as Commanding Officer of Chanute Field, Rantoul, Ill., and Commandant of the Air Corps Technical School at that station. Early in 1928 he was transferred to the Advanced Flying School, Kelly Field, Texas, where he took the Special Observers' Course, graduating in June, and receiving the rating of "Airplane Observer" as of June 25, 1928.

Following his graduation from the Army War College, Washington, D.C., Col. McChord served as Instructor at the Command and General Staff School, Fort Leavenworth, Kansas, for a period of four years. He was then transferred to the Panama Canal Department and, by virtue of his duty as Commanding Officer of the 19th Composite Wing, he was temporarily promoted to the rank of Colonel. In October, 1935, upon the completion of his foreign service tour in the Panama Canal Zone, he was assigned to duty in the Plans Division, Office of the Chief of the Air Corps, and later as Chief of the War Plans and Training Division.

Col. McChord's total flying time as pilot and observer exceeds 3,000 hours.

FIRST WING MANEUVERS AT MUROC DRY LAKE

The 1st Wing of the GHQ Air Force, with the exception of the 19th Airship Squadron at Sunnyvale, Calif., and the 19th Bombardment Group, March Field, Calif., concentrated at Muroc Dry Lake in the Mojave Desert for bombing and gunnery maneuvers from March 10th to 20th. Muroc Dry Lake has been selected as the location of the semi-annual field exercises of the 1st Wing. The last exercises were held in the San Joaquin Valley in November, 1935, when the 1st Wing dispersed to several civilian airdromes scattered throughout that region.

Participating in these maneuvers are 110 officers, 700 enlisted men, utilizing 55 combat airplanes; 60 officers and 400 enlisted men being present from the 34th, 73rd and 95th Arrack Squadrons and the 64th Service Squadron, of the 17th Attack Group and the 1st Wing Headquarters Detachment, March Field, Calif., and the remaining 50 officers and 300 enlisted men from the 9th, 11th and 31st Bombardment Squadrons and the 70th Service Squadron of the 7th Bombardment Group, Hamilton Field, Calif., which is 25 miles north of San Francisco.

The announcement regarding these maneuvers from the Headquarters of the 1st Wing, GHQ Air Force, March Field, Calif., Brig.-General Henry B. Clagett, commanding, stated, substantially, as follows:

Thirty-eight motor vehicles will transport the 17th Attack Group to Muroc from March Field and furnish one-half of the motor transportation for the maneuver camp. These will consist of 23 trucks, 9 motorcycles, 3 radio service trucks and 8 reconnaissance cars. The First Wing Headquarters Detachment will be carried to Muroc by the 76th Service Squadron.

Advance detachment of the First Wing Headquarters Detachment left on the morning of March 5th to make preliminary arrangements. Other units of the First Wing sent detachments to Muroc prior to March 10th, it having been directed by General Clagett that all of the squadrons must be prepared to engage in aerial combat by the morning of the 10th.

Army dignitaries expected to visit the camp during the ten-day period are Major-General Frank M. Andrews, commander of the General Headquarters Air Force; Major-General Paul B. Malone, commanding the 9th Corps Area, headquarters in San Francisco; Brigadier-General Edward M. Shinkle, Assistant Chief of the Ordnance Department.

Concrete bombs will be tried out during these exercises for the first time in the history of the Air Corps. These weigh exactly the same as the others and have a reasonable degree of accuracy. Invented by Captain Philip Schwartz, First Wing Ordnance Officer, these bombs will be used to test ability of ground crews to maneuver them, also to observe what effect they have on airplane formations when they are dropped.

An official radio transmitting set will keep March Field informed concerning important developments at the Muroc camp. This

net will be too heavily loaded with official news to permit the transmission of unofficial business.

Bombing will not be limited to the dropping of concrete missiles. A considerable number of high explosive demolition bombs will be taken along by the 27th Bombardment Group of Hamilton Field. As the only machine guns in the First Wing are limited to the .50 caliber, all firing will naturally be in that category.

Officers on the First Wing Staff at Muroc, in addition to General Clagett, will be Lieut.-Col. Hubert Harmon, Wing Executive; Major Ray A. Dunn, Supply Officer; Captains Eugene H. Beebe, Adjutant and Public Relations Officer; Lloyd H. Watnee, Communications and Intelligence Officer; Charles B. Overacker, Assistant Operations Officer, and Philip Schwartz, Ordnance Officer.

Leading the thirty Pursuit planes of the 17th Attack Group to Muroc from March Field was Lieut.-Colonel John H. Pirie. His staff comprises Major Walter R. Peck, Executive; Capt. Edward H. Alexander, Communications and Armament Officer; Lieut. Jesse Auton, Adjutant; 1st Lieut. Hunter Harris, Assistant Operations Officer.

Lieut.-Colonel Clarence L. Tinker commands the 7th Bombardment Group at Hamilton Field. His Executive Officer is Major Kenneth Walker; Supply Officer, Captain E.T. Noyes; Adjutant, 1st Lt. E.W. Suarez; Armament Officer, 1st Lt. Marvin L. Harding.

The 19th Bombardment Group (30th and 32nd Bombardment and 76th Service Squadrons) remaining at March Field will busy itself with other duties. The Bombardment squadrons will continue with their work in developing methods of adapting celestial navigation methods to air usage, while the Service Squadron will furnish the post transportation for the 50 officers and 750 enlisted men left behind.

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BUZZER INSTRUCTION AT LANGLEY FIELD

Pilots of the 35th Pursuit Squadron, Langley Field, Va., have been taking "buzzer" instructions under the capable supervision of Captain H.W. Dorr and have made rapid progress in both sending and receiving. Captain Budd Peaslee is now at the "head" of the class by virtue of his position next to the instructor.

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On February 7th, Lieut. Cunningham, of Langley Field, was forced to land at Mitchel Field, N.Y., on account of one retracted wheel. He was highly praised by the press and radio news flashes for his ability to act in a crisis.

LARGE CONTRACT PLACED FOR ENGINES

The Assistant Secretary of War, Hon. Harry H. Woodring, recently announced the placing of orders with the Wright Aeronautical Corporation, of Paterson, N.J., for 512 new aircraft engines. The total contract amounted to approximately \$3,850,000. The purchase of this quantity of engines at this time parallels the recently awarded contracts for new airplanes.

A total of 432 engines, costing approximately \$3,544,000, known as the Wright Cyclone R-1820-G, a 9-cylinder, air-cooled, radial engine, rated at 1,000 horsepower for take-off, the most powerful single row radial production aircraft engine in the world, will be procured for installation in the new Bombers.

This engine is the result of the cooperative effort of the engineering staff of Wright Field, Dayton, Ohio, and the Wright Company engineers. In its manufacture are incorporated the new dynamic damper which practically eliminates torsional vibration in crank shafts, new supercharger devices, new types of cylinder heads with greatly increased cooling area, which has resulted in lowered fuel consumption which, according to engineers, is now comparable to that of Diesel engines.

Of these engines, 328 will be used for installation in 82 new all-metal twin-engined bombing planes being manufactured by the Douglas Aircraft Company, of Santa Monica, Calif., and as spares, while 104 engines will be used for 13 four-engined all-metal bombing monoplanes being manufactured by the Boeing Airplane Company, of Seattle, Washington.

In addition to the powerful engines for the Bombers, the War Department has also contracted for eighty 9-cylinder Wright Whirlwind engines of 450 h.p., which will be used for installation in and spares for 40 Basic Training monoplanes now being manufactured by the North American Company of Los Angeles, Calif.

In accordance with the established practice of the War Department, the engines have been thoroughly tested by the Air Corps at the Materiel Division, Wright Field, Dayton, Ohio.

The large order for modern engines will be of the greatest value to the Air Corps in the replacement of many engines now nearly obsolete or worn out, and without question will add to the safety and effectiveness of the equipment in which they are installed.

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Captain J.B. Jordan, of the faculty of the Air Corps Advanced Flying School, Kelly Field, Texas, conducted a group of graduating student officers of that School on a tour of inspection of the San Antonio Depot Engineering Shops on February 26th.

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The CATERPILLAR CLUB

The Caterpillar Club is still doing business at the same old stand, and at the time this is being written there are recorded on the roster of this mythical organization 771 names - 762 men and 9 women, those lives were saved by the parachute. The number of emergency parachute jumps thus far made has reached 808, inasmuch as 32 members of the Caterpillar Club made two emergency jumps each; one, Major Frank O'D. Hunter, Air Corps, three; and one, Colonel Charles A. Lindbergh, who made his fourth parachute jump on November 3, 1926, over nine years ago, still the High Mogul of the Mystic Order of Caterpillars.

There was a falling off in Caterpillar Club initiations in the calendar year 1935 as compared with the previous year. The number of emergency jumps in 1934 totalled 84 as against 69 for 1935.

The highest number of initiations into the Caterpillar Club occurred in 1930, when a total of 134 individuals yanked the rip cord of their parachute to gain another lease on life.

The jumps by calendar years are set forth below, as follows:

1919 - 2	1925 - 13	1931 - 99
1920 - 1	1926 - 17	1932 - 95
1921 - 0	1927 - 40	1933 - 92
1922 - 2	1928 - 46	1934 - 84
1923 - 0	1929 - 92	1935 - 69
1924 - 10	1930 - 134	1936 - 12*

*up to February 27, 1936.

It will thus be noted that not since 1928 was the number of emergency parachute jumps in one year as low or lower than the number in 1935.

The reader may form his own conclusions as to the cause for the gradual decline in the number of parachute jumps since 1930. This much, however, may be said, and that is that this decline is not due to any reduction in the number of aircraft hours flown by military and civilian pilots.

Those who have joined the Caterpillar Club from January 1, 1935, to February 27, 1936, inclusive, are listed below, as follows:

No.	Date	Name	Rank	Place of Jump
1935				
695	January	J. W. Johampeter	Civilian	Pittsburgh Landing, Tenn.
696	January	Charles W. Wellman	Corporal, Air Corps	Brooksville, Indiana
697	January	F. R. Cook	Flying Cadet, Air Corps	Cortoro, Arizona
698	March	John H. Price	Sergeant, Air Corps	Near Centerville, Texas.
699	March	Clarence D. Fields	Staff Sergeant, Air Corps	Pescado River, Panama
700	March	Maurice E. Graham	Civilian	Grand Prairie, Texas
701	March	A. R. Redford	Lt.-Commander, U.S. Navy	Near Woodville, Texas.
702	April	John F. Guilmartin	Flying Cadet, Air Corps	Colton, Calif.
703	April	Daniel S. Campbell	2nd Lieut. Air Corps	Pearl City, Hawaii
704	April	A.B. Thompson	Lieut. (JG) U.S. Navy	Ravenna, Calif.
705	April	J. Hulme	Lieut. (JG) U.S. Navy	Ravenna, Calif.
706	April	H. G. Holden	Seaman, 1st Cl. U.S. Navy	Ravenna, Calif.
707	April	Thomas H. Smith	Civilian	Weaver, West Va.
708	April	William C. McDonald	Sergeant, Air Corps	Ashland, Ky.
709	April	John W. Greene	Civilian	Boston, Mass.
710	April	John B. Ackerman	2nd Lieut., Air Corps	Kelly Field, Texas
711	May	Lee Gehlbach	Civilian Test Pilot	Ravenna, Ohio
712	May	Frank P. Hunter, Jr.	1st Lieut., Air Corps	Brujas Point, Panama
713	May	Miss Ya Ching Lee	Civilian student pilot	Oakland, Calif.
714	May	*Lee Gehlbach	Civilian Test Pilot	Dahlgren, Va.
714	May	Earnest Piercy	Civilian	Orrilia, Wash.
715	May	William A. Matheny	1st Lieut. Air Corps	Talassee, Alabama
692	May	*George S. Buchanan	Flying Cadet, Air Corps	Montpelier, Indiana
716	June	Hilmer Anderson	Civilian	Parkwater, Washington
717	June	Hanlon H. Van Auken	Captain, Air Corps	Chesterfield, Mich.
716	June	John L. Giles	Tech. Sergeant, Air Corps	Banning, Calif.
719	June	Francis H. McDuff	Flying Cadet, Air Corps	Banning, Calif.
115	June	*Richard I. Dugan	Captain, Air Corps	Banning, Calif.
720	June	Armin F. Herold	Major, Air Corps	Near Taylertown, La.
721	July	Frank B. Schaede	Lieut. (JG) U.S. Navy	Peridido Bay, Fla.

*Second emergency parachute jump.

No.	Date	Name	Rank	Place of Jump
	1935			
722	July	Douglas K. Cairns	2nd Lieut. Air Corps	Kaena Point, Oahu, T.H.
723	July	Clyde E. Shockley	Civilian	Muncie, Indiana
724	July	William J. Bell	1st Lieut. Air Corps	Guelph, Ontario, Canada
725	July	George E. Leach	Major General, U.S.A.	Near Seligman, Arizona.
726	July	Lyman W. Drew	Civilian	Tulsa, Oklahoma.
727	July	Forrest G. Allen	1st Lieut. Air Corps.	Chanute Field, Ill.
728	July	Robert L. Conover	Civilian	New Brunswick, N.J.
729	August	John A. Dunkle	Civilian	Willoughby, Ohio.
730	August	Fulton G. Bulloch	Staff Sergeant, Air Corps	Pontiac, Ill.
731	August	Lucien N. Powell	Flying Cadet, Air Corps	Near Chelsea, Mich.
732	August	George W. White	Private, Air Corps	Watertown, New York
733	September	Donald T. Wright	Private, Air Corps	San Diego, Calif.
734	September	John L. Bailey	Sergeant, Air Corps	San Diego, Calif.
735	September	Samuel E. Brown	Major, Medical Corps	San Diego, Calif.
736	September	Frank B. Connor	Corporal, Air Corps	Enfield, Va.
737	September	Daniel C. Murdock	Private, Air Corps	Enfield, Va.
738	September	Charles A. Johns	Sergeant, Air Corps	Enfield, Va.
739	September	Willis S. Marvin	Flying Cadet, Air Corps	Enfield, Va.
740	September	Alva E. Knight	Civilian	Maplewood, Illinois.
741	September	William S. Decker	Private, Air Corps	Near Randolph Field, Texas.
742	September	Herbert A. Ottewill	Civilian	Westbury, L.I., New York.
743	October	William A. Hatcher	2nd Lieut. Air Reserve	Near March Field, Calif.
744	October	Raphael Bacz	Captain, Air Corps	Near Chillicothe, Ill.
745	October	Julius A. Hudson	Civilian	Corning, Calif.
746	October	E. T. Corbin	Lieut., U.S. Navy	Pensacola, Fla.
747	October	Will A. Hielscher	Private, Air Corps	Premont, Texas
748	October	John H. Cheatwood	2nd Lieut. Air Reserve	Premont, Texas
749	November	Harold W. Fisher	Corporal, Air Corps	Near Flemington, N.J.
750	November	L. C. Simpler	Lieut. U.S. Navy	Clanton, Ala.
118	November	*Norme D. Frost	Captain, Air Corps	Ray Center, Mich.
197	November	*Lindsay M. Bawsel	Captain, Air Corps	Ocu, Panama.
751	November	William R. Tanner	Sergeant, Air Corps	Ocu, Panama.
752	November	R. D. Prescott	Major, Signal Corps	Ocu, Panama.
753	December	Edward L. Smith	Private, Air Corps	Eagles Mere, Pa.
754	December	Homer F. Berry	Sergeant, Air Corps	Eagles Mere, Pa.
755	December	Charles D. Heinbach	Private, Air Corps	Eagles Mere, Pa.
756	December	James R. Breslin	Private, Air Corps	Eagles Mere, Pa.
757	December	Samuel R. Brentnall	Captain, Air Corps	Balboa, Canal Zone
758	December	James D. Greer	Civilian	Bellbuckle, Tenn.
	1936			
759	January	George L. Brown	Private, Air Corps	March Field, Calif.
760	January	Frederick G. Huish	Flying Cadet, Air Corps	Randolph Field, Texas.
761	January	Thomas E. Lanigan	Private, Air Corps	Near Ford Island, T.H.
762	January	Charles E. Fisher	2nd Lieut. Air Reserve	Near Ford Island, T.H.
763	February	W. A. Trembly	Flying Cadet, Air Corps	Near New Braunfels, Texas.
764	February	Otto C. George	Captain, Air Corps	Near Stonewall, Ga.
765	February	Robin B. Epler	1st Lieut. Air Corps	Near Stonewall, Ga.
766	February	George Russell	Sergeant, Air Corps	Near Stonewall, Ga.
767	February	Harry McHayes	Sergeant, Air Corps	Near Stonewall, Ga.
768	February	Harry N. Burkhalter	2nd Lieut. Air Corps	Fulton, Arkansas.
769	February	W. K. Durham	Private, Q.M. Corps	Near Mansfield, La.
770	February	W. J. Kliffel	Sergeant, Air Corps	Near Sourlake, Texas.
771	February	George F. Rice	Lieut. (JG) U.S. Navy	Near Pensacola, Fla.

*Second emergency parachute jump.

Of the previously mentioned total of 809 emergency parachute jumps, made during the period of over 16 years, starting with the jumps made from a burning airship over Chicago, Ill., July 21, 1919, by Messrs. Henry Wacker and John Boettner, up to and including February 27, 1936, 401 were made by Army Air Corps personnel (Regular Officers, 161; Enlisted Men, 94; Reserve Officers, 79; Flying Cadets, 67); 17 by National Guard personnel (12 officers and 5 enlisted men); 81 by personnel of the U.S. Navy (48 Regular officers, 25 enlisted men, 6 Reserve officers and 2 Re-

serve enlisted men); 36 Marine Corps personnel (20 Regular officers, 13 enlisted men and 3 Reserve Officers); 10 by personnel of other branches of the Army (8 Regular Officers, one enlisted man and one Reserve Officer); and 264 by civilians.

Air Corps personnel; it will be noted, lead in the number of emergency jumps made, but the reason for this is obvious - the type of flying performed by them.

The fact should be borne in mind that the above number of parachute jumps does not mean the loss of aircraft to that extent, for in

many instances passengers jumped where pilots were able to make safe landings with no injury to themselves and little or no damage to the aircraft. In one instance as many as six enlisted men "bailed out" of an Army Transport plane, following which the pilot made a safe landing. The Navy equaled this record when six men hastily deserted via the parachute a seaplane flying in the vicinity of Pearl Harbor, Hawaii.

According to the Caterpillar Club Register, there were eight instances where four men took to their 'chutes and sailed down safely to terra firma, sixteen occasions where three men in unison yanked at the rip cord of their parachute and eighty-eight critical moments where two occupants of a plane rapped simultaneously at the portals of the Caterpillar Club for admittance.

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STARTING AVIATION ENGINES IN COLD WEATHER

A Navy Department press release, touching on an extended flight of two airplanes of the Utility Unit of the U. S. S. LANGLEY to Salt Lake City, Utah, and return, states that the main point of interest of the flight was the procedure required for cold weather starting of the airplane engines.

After the failure of a starter gear with temperature at 15 degrees F., it was decided to use more caution. During the remainder of the trip, the following procedure was used whenever the planes were to remain overnight. Upon securing for the night, the oil was drained and placed in containers, ready for heating the next morning. Forty-five minutes before time for starting engines, asbestos lined engine covers were placed over the engines and gasoline stoves, with long metal chimneys which connected to the engine covers, were lighted and placed under the engines. When the engine was thoroughly warmed, the hot oil was put in and the engine started readily. This equipment is kept available by the air line operating in this area during the winter months.

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THE SCOTT FIELD COMMUNICATIONS OFFICE

The Scott Field Radio Communications Office moved on February 27th from the Headquarters building to its new quarters in the Post Operations Office. Last fall the Operations Office was enlarged by PWA workmen, and special quarters were constructed in the enlarged portion for the Radio Communications Office.

The new radio room is equipped with acoustical wallboard to control and dampen voice reception while several loud speakers are in operation and to confine these communications to the radio room. The new quarters are being equipped with more radio apparatus, for it is planned to operate the station on a 24-hour basis as an alert station. For this work three new short wave receivers are being installed. These will be used to copy airplanes in flight as well as adjacent air-alert nets. The equipment moved from the old quarters

consisted of one intermediate frequency, one high frequency and one all frequency receivers. Remote controlled equipment consists of one intermediate frequency code transmitter and one intermediate frequency voice and code transmitter.

At present the station has four regular operators. This number, however, will soon be increased.

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TRANSFER OF OFFICERS TO THE AIR CORPS

Special Orders of the War Department, recently issued, announced the transfer of the following-named second lieutenants to the Air Corps on January 29, 1936, with rank from June 12, 1934:

Harvey T. Alness, Cavalry
Paul C. Ashworth, Corps of Engineers
Herbert M. Baker, Jr., Infantry
John G. Benner, Infantry
Byron E. Brugge, Coast Artillery Corps
William M. Canterbury, Coast Artillery Corps
George B. Dany, Coast Artillery Corps
William M. Gross, Field Artillery
Paul T. Hanley, Infantry
John deP. Hills, Infantry
John M. Hutchison, Cavalry
Richard A. Legg, Infantry
Elvin S. Ligon, Jr., Infantry
Arno H. Luchman, Infantry
Lawson S. Moseley, Coast Artillery Corps
Wilson H. Neal, Field Artillery
Jack J. Neely, Infantry
Frank C. Norvel, Field Artillery
Raymond J. Reeves, Cavalry
Jack E. Shuck, Coast Artillery Corps
Curtis D. Sluman, Coast Artillery Corps
Dale O. Smith, Infantry
William S. Stone, Field Artillery
Hudson H. Upham, Infantry
John W. White, Infantry
Albert T. Wilson, Jr., Infantry
William H. Wise, Cavalry

The above-named officers graduated from the United States Military Academy in June, 1934; were assigned to the Air Corps for flying training with the October, 1934, class, and graduated from the Advanced Flying School, Kelly Field, Texas, on October 12, 1935.

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Effective June 17, 1936, Lieut.-Colonel Davenport Johnson, Air Corps, is relieved from detail as a member of the General Staff Corps and from assignment to the War Department General Staff, Washington, D.C., and is directed to report for duty at Hamilton Field, San Rafael, Calif.

Captains Kirtley J. Gregg and Joe L. Loutzenheiser, stationed at March Field, Calif. and 1st Lieut. Fay O. Dice, at Crissy Field, Calif.; Captain John K. Nissley, on duty with the Organized Reserves of the 9th Corps Area, with station at Crissy Field, Calif, Majors Ra A. Dunn (Captain) Supply Officer, 1st Wing, GH Air Force, and Bernard T. Castor, Executive Officer, Station Complement, March Field, Calif. are under orders to report not later than August

25, 1936, to the Commandant of the Air Corps Tactical School, Maxwell Field, Ala., for duty as students in the 1936-1937 course. Majors Dunn and Castor are relieved from temporary rank, effective July 15, 1936.

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ASSIGNMENT OF GRADUATES OF C. & G. S. SCHOOL

The following-named Air Corps officers, now on duty as students at the Command and General Staff School, Fort Leavenworth, Kansas, have, under Special Orders of the War Department recently issued, been assigned to duty at the stations indicated, reporting not later than June 30, 1936, viz:

To Langley Field, Va., for duty with the Headquarters, GHQ Air Force:

Lieut.-Colonel Carl Spatz, Captains John DeF. Barker, Charles C. Chauncey and Walter L. Wheeler.

To the Office of the Chief of the Air Corps, Washington, D.C. - Majors Gerald E. Brower, Harry H. Young, Captains Charles Y. Banfill, and Morton H. McKinnon.

To Langley Field, Va., for duty with the GHQ Air Force - Captains Warren R. Carter, Howard A. Craig, Edgar E. Glenn, Caleb V. Haynes, James P. Hodges, Vincent J. Meloy.

To March Field, Calif., for duty with GHQ Air Force - Captains William S. Gravely, Howard K. Ramey, Victor H. Strahm.

To Barksdale Field, La., for duty with GHQ Air Force - Captain Harry A. Johnson.

To Seattle, Wash. - Captain John D. Corkille for duty as Air Corps representative at the plant of the Boeing Aircraft Company.

To Kelly Field, Texas. - Lieut.-Colonel Carlyle H. Wash for duty as Assistant Commandant of the Advanced Flying School.

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CHANGES IN STATION OF AIR CORPS OFFICERS

To Panama: Colonel Jacob E. Fickel from duty as Commandant of the Advanced Flying School, Kelly Field, Texas, to duty as Wing Commander, 19th Composite Wing, Panama Canal Zone, about July 3rd. - Lieut.-Colonel Benj. G. Weir, from duty as Instructor, Infantry School, Fort Benning, Ga., about July 3rd.

To Philippines: 1st Lieut. Frederick A. Pillet, about Sept. 16, 1936, from duty as student, A.C. Technical School, Chanute Field.

To Randolph Field, Texas: Lieut.-Colonel William B. Mayer (Major). Relieved from temporary rank upon departure from Panama.

To Langley Field, Va.: Major Frederick I. Eglin, on duty with staff and faculty, Air Corps Tactical School, Maxwell Field, Ala., to duty with Headquarters, GHQ Air Force.

To Hamilton Field, Calif.: 1st Lieut. Carl A. Brandt, from Philippines, for duty with GHQ Air Force. - 2nd Lieut. Edward Flanick (Field Artillery) Air Corps, from the Advanced Flying School, Kelly Field, Texas.

To Brooks Field, Texas: Lieut.-Colonel J.H. Houghton (Major), with 6th Composite Group, Panama. Relieved from temporary rank upon departure for new station.

To Barksdale Field, La.: Captain John F. Guillett (1st Lt.) 7th Obs. Squadron, Panama. Relieved from temporary rank upon departure for new station.

To Mitchel Field, N.Y.: Captain Joel E. Mallory (1st Lieut.) 74th Pursuit Squadron. Relieved from temporary rank upon departure from Panama. - 2nd Lieut. Paul Burlingame, Jr., detailed to Air Corps March 4, 1936, relieved as student at Advanced Flying School, Kelly Field, and assigned to duty with GHQ Air Force.

To Chicago, Ill., for duty as Air Corps Procurement Planning Representative: Captain James B. Jordan, from Advanced Flying School, Kelly Field, Texas.

To Wright Field, Dayton, Ohio: Major Hubert V. Hopkins and Captain Merrick G. Estabrook, upon completion of course of instruction at the Army Industrial College, Washington, D.C.

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DETAILS TO THE AIR CORPS TECHNICAL SCHOOL

The following-named Air Corps officers have been assigned to duty at the Air Corps Technical School, Chanute Field, Rantoul, Ill., as students in the courses of instruction indicated: Communications Course:

Captain John F. Wadman (1st Lieut.) 73rd Attack Squadron, March Field, Calif. Relieved from temporary rank July 15, 1936.

1st Lieut. John J. Hutchison, from Hawaii. Airplane Maintenance Engineering-Armament Course:

Captain Narcisse L. Cote (1st Lieut.) 4th Composite Group. Relieved from temporary rank upon departure from Philippines.

Captain Clarence T. Mower (1st Lieut.) 25th Bombardment Squadron. Relieved from temporary rank upon departure from Panama.

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TEMPORARY PROMOTIONS

To Major:

Captain Bayard Johnson assigned as Squadron Commander, 87th Pursuit Squadron, Maxwell Field, Ala., March 11, 1936.

Captain Samuel C. Eaton, Jr., assigned as Squadron Commander, 14th Bombardment Squadron, Bolling Field, D.C., March 9, 1936.

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Captain Ralph E. Fisher, Air Corps, has been relieved from duty with the 16th Observation Squadron, Langley Field, Va., and assigned to the Station Complement.

Major Charles D. McAllister (Captain) has been relieved from duty as Squadron Commander of the 87th Pursuit Squadron, Maxwell Field, Ala., and from temporary rank, March 11, 1936, and directed to report to the Commandant of the Air Corps Tactical School for duty.

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Captain Orvil A. Anderson, Air Corps, co-holder with Capt. Albert W. Stevens of the world's record flight of nearly 14 miles into the stratosphere, was presented the Oak Leaf Cluster citation for his participation in the successful flight made on November 11, 1935, near Rapid City,

S.D. The presentation was made on Saturday morning, March 7th, before a formation of Kelly Field troops, the corps of Flying Cadets and officers of the field, by Brigadier-General James E. Chaney, Commanding General of the Air Corps Training Center.

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PRESIDENT ROOSEVELT INVITED TO SAN ANTONIO

An elaborate leather-bound invitation to President Roosevelt to visit San Antonio, Texas, in June, and lay the cornerstone of the new Federal Building, was carried to Washington by Captain W. H. Hardy, Air Corps.

Following a breakfast given by the San Antonio Chamber of Commerce, and attended by Colonel Jacob E. Fickel and Captain Hardy from Kelly Field, the group went to the Alamo, where Captain Hardy purchased air mail stamps from Postmaster Dan Quill, who cancelled them in the Alamo. This is the first time that stamps have ever been sold or cancelled in this historic shrine. The stamps themselves are special issue commemorating the 100th anniversary of the fall of the Alamo. Following the ceremonies in the Alamo, the entire group went to Kelly Field to witness the departure of Captain Hardy, who took off at 9:45 a.m. with Sergeant W.O. Trager as mechanic, for Washington, D.C.

It is planned to have the invitation formally presented to the President by a group of Texans, including Vice President Garner, Senators Connally and Shepard, and Congressman Maverick.

Stamp collectors at Kelly Field have been casting longing eyes at the photographs of this special cover and have assured the News Letter Correspondent that it will find a sincere welcome in the President's unusual collection of stamps.

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ALAMO SHOWERED WITH LONE STARS

A shower of 25,000 blue, silver and gold paper stars, bearing the inscription "The Alamo, 1836-1936," was scheduled to be dropped upon the historic Alamo, at San Antonio, Texas, from a height of 3,000 feet, at 6:00 p.m., on Friday, March 6th, from a formation of nine Kelly Field airplanes. This flight of Bombers was to constitute a part of the celebration of the 100th anniversary of the fall of the Alamo with the following-named Air Corps officers as pilots of the planes: Captains W.E. Whitson, L.S. Smith, J. Smith, Orvil A. Anderson, J.M. Fitzmaurice, W.G. Bryte, D. T. Spivey, 1st Lieuts. R.D. Butler, W.L. Kennedy and E. J. Timberlake.

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Captain John W. Monahan, Air Corps, who recently completed a tour of duty as Assistant Military Attache at London, was a recent visitor at Kelly Field, where he had served for many years and was for some time the Chief of the Bombardment Section. After a trip to California for some deep sea fishing, Captain Monahan will report to Maxwell Field, Alabama, to attend the Air Corps Tactical School.

OBITUARIES

Lieut. Robert K. Giovannoli

Fate decreed that the man who was selected to receive the Cheney Award for the year 1935, for an act of extraordinary heroism in a humanitarian interest, should die before the actual presentation thereof.

Flying a Pursuit airplane at Logan Field, near Baltimore, Md., at about noon on Sunday, March 8th, Lieut. Giovannoli had just started to zoom his plane from a low altitude when its right wing crumpled. Instantly the airplane careened out of control and crashed in the northwest section of the airport. Lieut. Giovannoli was thrown clear of the wreckage but was dead before help could reach him.

Lieut. Giovannoli, who would have been 32 years of age on March 29th, was selected for the 1935 Cheney Award for his outstanding bravery in aiding in the rescue of Major Ployer F. Hill, Air Corps, and Leslie Tower, Boeing Test Pilot, who were trapped in the flaming wreckage of a Boeing bombing plane when it crashed at Wright Field on October 30, 1935. For this act of valor he was also given the Soldiers' Medal.

Lieut. Giovannoli was born in the District of Columbia and lived in Washington until he was about 13 years of age when his family moved to Lexington, Ky. He graduated from the Air Corps Training Center in 1928, and was commissioned in the Air Corps, Regular Army, on May 8, 1930.

Flying Cadet Marion Reeder

Taking off from Fort Bragg, N.C., on the morning of March 7th, on his return flight to his station at Langley Field, Va., Flying Cadet Marion Reeder was instantly killed when his plane crashed. The cause of the crash has thus far not been determined.

Cadet Reeder was born at Woodland, Calif., September 7, 1912. He attended high school at Atlanta, Ga., and graduated from the University of Georgia, Athens, Ga., in 1934. Appointed a Flying Cadet, he graduated from the Air Corps Training Center in June, 1935, and was assigned to active duty under his Cadet status at Langley Field, Va.

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School started again for the officers over in the Pilots' room of the 50th Squadron, Luke Field, on Monday, February 10th. Promptly at 9: a.m., the officers assembled with pencil and pad to learn from Capt. J.G. Fowler the latest developments in Navigation, Dead Reckoning, Celestial Navigation, which for all their high sounding terminology means nothing more than - "How to get where you want to go without going somewhere else."

When the "Duck" comes out of the Depot all set to go places, it is hoped by the officers, who are now busy scratching out theory on the subjects as above, that they will be able to get permission to make extended flights at sea and to the other islands to put into practice some of the items Captain Fowler has put on the blackboard.

WASHINGTON OFFICE NOTES

On February 27th, General Westover and Lieut.-Colonel R.L. Jones, Executive, attended the National Industrial Conference in New York City.

On February 28th, General Westover addressed the officers of Mitchel Field, N.Y., advising them of some of the things discussed at the National Industrial Conference in New York, and acquainted them with things of interest in the Chief's Office.

On March 4th Generals Westover and Arnold attended a special meeting of the Institute of Aeronautical Sciences, at which Dr. Lewis, of the National Advisory Committee for Aeronautics, gave an illustrated lecture. General Westover stated that this lecture brought out most forcibly the value of fundamental research in the field of aeronautics, and that he was quite impressed with the studies that had been made regarding the ultimate speed of flight, which is predicted to be 575 m.p.h. Above this speed, the principle upon which the flight of heavier-than-air machines is based, will cease to be applicable. At this speed the forces of lift and drag which sustain airfoils propelled through the air will reach the vanishing point.

Lieut.-Colonel William C. McCord, Chief of the Training and War Plans Division, left on March 4th for March Field, Calif., for the purpose of observing the air activities of the 1st Wing of the GHQ Air Force, during the maneuvers at Muroc Dry Lake, March 10-20. During the course of this trip he is scheduled to visit the Air Corps Training Center, Randolph Field, and the Air Corps Tactical School, Maxwell Field, Ala., for the purpose of coordinating matters relating to training and operations.

General Westover left March 9th on an inspection trip, visiting Selfridge Field, Oscoda and Bay City, Mich.; Chanute Field, Ill.; Fort Leavenworth, Kansas; Scott Field, Ill., and Wright Field, Ohio, returning to Washington on March 13th.

On March 23rd, General Arnold will give a lecture on the subject "Air Defense Problem as Studied by the First Wing," at the Army War College at 9:00 a.m. On the next day, General Westover will deliver a lecture before the National Geographic Society as guest speaker.

NOTES FROM AIR CORPS FIELDS

Luke Field, T.H., February 18.

23rd Bombardment Squadron: The officers gave a dinner at the Moana Hotel in honor of Lieut. Clarence W. Gilkes and his bride, the former Miss Mildred Hughes. After a merry meal the officers and their ladies danced to the music of Harry Owens and the Royal Hawaiians.

72d Bombardment Squadron: Three Bombardment airplanes piloted by Majors Edwards, Melville and Captain Lauer, departed from Luke Field for Molokai at 7:30 a.m., January 27th, and after stopping at John Rodgers Airport to pick up Mr. Jacob K. Ordenstein, Honolulu undertaker, proceeded to Kalapapa Leper Settlement on Molokai, landing there at 9:15 a.m. The entire party then proceeded, by automobile, to Kalawao, 3 miles distant, where the remains of Father Damien were disinterred, carried back to the landing field at Kalaupapa, loaded in the bomb bay of one of the Bombers and taken to John Rodgers Airport, arriving there at 3:00 p.m.

4th Observation Squadron: Lieut. F.S. Henley has deserted the Squadron for the Hawaiian Air Depot, but is still attached for flying. All the junior officers are becoming expert in maintenance work due to all airplanes being grounded for a week for a complete check by the inspectors.

Training for the period has been the completion of various phases of the yearly program, including Smoke Puff, Instrument Flying check flights with instructors, and ground training for junior officers.

Due to excellent weather for the last few weeks, photography has been stressed as much as possible.

Sergeant A.G.B. Hinkle from Brooks Field is Sergeant Johnson's replacement. Sergeant Hinkle is at present a member of the Maintenance crew, the busiest crew in the hangar these days, since flying machines in the 50th Observation Squadron are getting "scarer and scarer" while repairs are more or less plentiful on those planes remaining in service.

Lieut. H.S. Bishop is the new Engineering Officer of the 50th Obs. Sqdn., replacing Capt. Fowler, who has taken over the Operations Office with Lieut. C.F. Tiemann to help him during the rush hour. Lieut. Tiemann, in addition to being Assistant Operations Officer, is Squadron Athletic Officer and reports his charges shaping up nicely for the coming squadron campaign. When candidates gather on the diamond to prove the rumors of the qualifications they are said to possess, they will report to Coach Tiemann, of the Post Team.

Scott Field, Belleville, Ill., March 2nd.

The Post Bakery has just completed the installation of a new 400-lob capacity oke oven. This new oven replaces two field oven types which had been in use.

The Ninth Airship Squadron has just completed the installation of a small electric baking oven to be used for baking pies, cakes and rolls for the squadron. No attempt will be made, of course, to bake bread. The equipment installed was obtained from the Quartermaster.

The Ninth Airship Squadron has obtained a number of pieces of new kitchen equipment which are being installed now. These were also drawn from the Quartermaster.

A second floor has been built inside the Quartermaster warehouse by WPA workmen. The purpose

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of this new storage space is so that all the more important Quartermaster property can be housed under one roof. The Salvage warehouse has been vacated by the Quartermaster; the materials and the salvaged equipment have been moved either to the warehouse or to a small storage building. The salvage warehouse which was vacated will be used for an officers' garage. The old officers' garage, a flying hazard, will be torn down soon.

2nd Lieut. Stanley J. Young, Air Reserve, completed six months' active duty on March 1st. Second Lieut. Leo C. Allen, Air Reserve, reported for two weeks' active duty March 2, 1936.

Boston Airport, East Boston, Mass., March 9.

The recent improvements to our day-room have materially added to the enjoyment of the members of this command. What with new lounge chairs, a writing desk, wall lamps and floor lamps, and with the addition of newspapers and magazines and, of course, the radio, has made it very easy to stay here nights and listen to the radio and read.

1st Lieut. W. Harlow, Air Reserve, completed his training schedule in effect at this station.

Recent visitors at this station were Captain Eaton from Bolling Field; Captain Reilly from Middletown Air Depot; Lieut. Hersam, from Selfridge Field; Lieuts. Graff, Miller, Winch, Waterman, Snell, McDuff and Cadet Fisher from Mitchel Field, and Mr. Lample, Department of Commerce.

Reserve activities, with the tempering of the weather the last few week ends, have shown a marked increase, thereby making its own prediction that the coming summer months will be busy for all concerned at this station.

Total flying time for the Fiscal Year, to March 1st, is as follows: Regular Army, pilot, 1326:50 - Obs. time, 1177:15. Reserve, pilot, of 1900 hours allotted to this station 1074.55 hours have been consumed. Under hood time, 123:10; observer time, 234.45.

Langley Field, Va., March 10th.

Pilots on the Panama flight have been flying all available airplanes in order to get the necessary 80 hours which were required prior to departure to Panama on March 14th.

On the 10th of February, four B-6A airplanes were transferred to the Air Corps Station Supply prior to shipment to Panama.

Flying Cadets Frank J. Bennett and Joseph H. Wilson, having served one year on active duty, were separated from the service on February 29th, and on March 1st were appointed second lieutenants, Air Reserve. Their assignment to this command is expected.

Selfridge Field, Mt. Clemens, Mich., March 5.

First Lieut. Gordon A. Granger, Medical Reserve Corps, reported at Selfridge Field for six months' active duty on February 21st, in connection with the Civilian Conservation Corps patients that are ordered to the Station Hospital from time to time. He will be relieved from active duty about August 19, 1936.

On the morning of February 17th, in making landings at the southeast end of the flying

field, a PT-3A airplane, piloted by 2nd Lieut. George A. Hersam, Jr., Air Reserve, with Privat Willard A. Millar as passenger, and a P-6D airplane, piloted by 2nd Lieut. William W. Harding, Air Reserve, nosed over when they landed, due to drifted snow about two feet deep with a two-inch crust. No one was injured. There were several minor damages to the airplanes.

Captain Gimmler's death is a great loss to the service, and Selfridge Field extends heartfelt sympathy to his bereaved family.

San Antonio Air Depot, Duncan Field, Texas.

Major E. J. House, of Selfridge Field, Mich., flying a P-26C plane from the West Coast to his home station, was forced down with engine trouble at Fort Bliss, Texas, and the Depot sent civilian mechanic L. J. Milhan by air on February 27th to make the necessary repairs. Major House resumed his journey on the 28th, stopping at the Depot for a brief visit en route.

Among recent cross-country visitors at the Depot were the following from the 45th Division Aviation, Colorado National Guard, Lowry Field, Denver: Captain C. J. LaGue, February 27th, on a navigation training flight, with Major Ralph Baird, O. R. C., as passenger; Lieuts. H. S. Houghton and H. M. Williams, Feb. 26-28, ferrying a National Guard O-19E to the Depot for inspection; and Lieut. Foster Burns, in an O-19, Feb. 26-28.

Lieut. Max E. Warren, Assistant Depot Supply Officer, who has also been Supply Officer of the 3rd Transport Squadron since January 1, has received the latter assignment by War Department orders, effective February 22nd, with the temporary rank of Captain for the period of the assignment.

A detachment of 27 men from the 8th Engineers Fort McIntosh, Texas, is engaged in dismantling four of the old hangars at this Depot, the material from which is to be removed to Fort McIntosh for use in the construction of motor sheds for the 8th Engineers. The detachment is quartered at the Normoyle Quartermaster Depot during this work. These hangars are among those built during the World War for the former "Kell Field No. 1" and were subsequently used by the Air Service Mechanics School before its removal to Chanute Field. The hangars were then used as Engineering Shops of this Depot prior to the erection of the new Engineering Shops Building in 1933.

Hawaiian Air Depot, Luke Field, T.H.

With the return of Capt. Charles E. Bronshaw from Tripler General Hospital, where he underwent a three weeks' minor overhaul and inspection, the Engineering Section is functioning with renewed activity.

The problem of corrosion is again our major enemy. The humid atmosphere of the tropics, coupled with the proximity of the ocean, necessitates a constant guard against the oxidation of the metal structures of aircraft. Periodically, sections must be taken from longerons and struts and inspected for possible weakness due to corrosion.

Lieut. Harry S. Bishop, formerly Assistant Depot Supply Officer, has been transferred to the 50th Observation Squadron as Engineering Officer

KEEPING FIT

Hamilton Field, Calif.



Close to one thousand spectators took in the boxing bouts on February 18th at this field for the benefit of the Army Relief Society. Several substitutions were necessary, but in spite of these last minute entries, Chaplain Reilly managed to recruit a

very creditable card which was thoroughly enjoyed by fans and fanettes alike. In what many believed to be the best bout of the evening, Jimmie Roach was awarded the verdict over Ray Sullivan. The boys were bantams. The Winners:

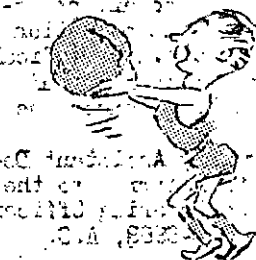
Emmett Buckley, State C.Y.O. Champ, lost to Paul Smith of Petaluma. Red Hansen was badly outclassed by Frank Vodich, and was saved an unnecessary beating when his seconds tossed in a towel. Bill Burnett's "Big Berthan" sprung a little "Trunion Friction" and with his main weapon out of action, Bob Reinshagen was given the nod. Leo Hettinger won over Raymond Roland in a wild scrap, and Pete Quinones and Bobby Jones waltzed thru three slow rounds, Bobby taking the decision. Two trips to the canvas, both for the nine count, proved too great a handicap for Johnnie Jones to overcome, and although he came up fighting, Johnny Juris took the decision. Ray Lunney won easily from Tom Quinones. Crum of Navato and Keffer of San Rafael were two of Chaplain Reilly's pinch hitters, and in a close match Crum won.

Clarence English and Mike Kuzurco, Hamilton Field's clowning "Grunt and Groaners," closed the show.

Army Relief Society Committees: Mrs. Clarence L. Tinker, President. Mrs. C.W. Russell, Mrs. D.H. Dunton and Mrs. Oliver K. Robbins were assistants to the President.

Tickets, Mrs. C.E. Griffin; Games, Major Fabian Pratt; Finance, Lieut. Milliard Lewis, Mrs. J.M. Davies; Smokes, Mrs. Carlyle Ridenour; Boxing, Chaplain Stanley J. Reilly, Lieuts. H.M. Baker, R.O. Cote; Dance, Mrs. K.N. Walker and Captain J.E. Moore.

Scott Field, Ill. The Post E. & R. Officer, Captain Haynie McCormick, completed a card for a boxing show held March 12th. There were five bouts, featuring 7 Scott Field soldiers, 3 Scott Field ex-soldiers and one civilian. Several of the Scott Field entrants were eliminated in the recent Golden Gloves Tournament held in this vicinity in February.



The Post Basketball team swamped the Jefferson Barracks 6th Infantry team with a score of 79 to 15. Games on the Scott Field schedule are as follows: With Selfridge Field, March 9th; Bolling Field, March 6th; Jefferson Barracks, March 11; Naval Reserve of St. Louis, March 19th and 23rd.

The Volleyball season was scheduled to start the week of March 15th. Intersquadron games will be arranged so that they will not conflict with the basketball games.

Selfridge Field, Mich.

Out of fourteen games played by the Post Basketball Team, they have lost one, which was to the Port Huron YMCA team on February 27th. Following are the teams the local quintet has competed with and defeated, with scores as indicated:

Port Huron Junior College	26-23
Port Huron Junior College	34-32
Vagabonds of Detroit	50-31
Briggs-Vernor of Detroit	43-29
Nardin Park Athletic Club, Detroit	31-23
Macomb County Offices of Mt. Clemens	27-25
St. Leo's of Detroit	27-21
Sergeants Club of Detroit	46-18
Gibson Auto Service of Royal Oak	42-26
Port Huron Y.M.C.A.	36-32
New Baltimore	42-21
Murphy Bros. of Mt. Clemens	37-28
Nardin Park Athletic Club, Detroit	26-24



Luke Field, T.H.

The 23rd Bombardment Squadron began baseball practice under the guidance of Lieut. Summerfelt and Corporal Probasco. Several new men reported and the outlook is favorable for a successful season.

The 23rd played the Oahu Prison team on Sunday, February 23rd, and won by score of 4 to 1. An interesting point was that the prisoners did not steal a single base, while the Squadron Supply Sergeant stole two bases.

San Antonio Air Depot.

The stirring of baseball interest is one of the first signs of spring. The San Antonio Air Depot Airmen, baseball champions of the last half of the 1935 season in the City Major League, San Antonio, expect to take the field again this season with an even stronger team, under the same manager, Julius Glau, and under the sponsorship of the Duncan Field Recreation Association. There is quite a little excellent material among the Depot personnel. Most of the old stalwarts will again be on the team, and it is hoped to repeat last year's enthusiastic work.

The Puzzle in last issue: The enlisted man smoked 36 cigarettes. The 36 butts would make 6 cigarettes. The 6 butts would make one cigarette. Thus the enlisted man smoked 36 cigarettes and then from their butts made 7 cigarettes with one butt left over.

Answered by Pvt. 1st Cl. Kenneth C. Jones, Scott Field, Ill.

Send in your puzzles - but no easy ones, mind you.

TECHNICAL INFORMATION AND ENGINEERING NEWS
Air Corps Materiel Division

Landing Lights:

Two representatives of the Westinghouse Lamp Company (one from Bloomfield, New Jersey, and the other a local representative) visited the Materiel Division on February 17, 1936, with reference to a 1000-watt, 110-volt airplane landing light. A light shielded lamp (landing) with a reflecting coating is being developed by that company and will be submitted to the Materiel Division for test in the near future.

Measurements of Pressure Altitude at Ground Level.

An Engineering Section Memorandum Report describes the measurements of pressure altitude at ground level in order to obtain a comparative record of atmospheric pressure measurements secured by available methods. In the conclusions the following statements were made:

- a. The Department of Commerce Aircraft Weather Reports from the Vandalia, Ohio, Weather Station, through the teletype system, have an accuracy of ± 70 feet of pressure altitude.
- b. Pressure altitude measurements indicated by a Type C-7 sensitive altimeter are as reliable as a mercurial barometer reading corrected for temperature and converted to sea level conditions. The accuracy was within ± 15 feet of pressure altitude.
- c. The "tapping" of altimeters to remove friction effects by a uniform method is essential to obtain corresponding readings.

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WASHINGTON OFFICE NOTES

Additional

Major William E. Lynd recently returned from temporary duty at Maxwell Field, Ala., where he worked with the Air Corps Board. The day before his departure for Maxwell Field he returned from an absence of six weeks, during the course of which he acted as an aerial observer in connection with the Marine Corps maneuvers, Porto Rican area. Major Lynd left for Porto Rico by boat on January 5th, via Norfolk, Va., and returned to Washington on February 20th in a Marine Corps plane.

Dropping into the Chief's Office during the course of their Spring leave from the Air Corps Tactical School, Maxwell Field, Ala., were Majors Harold McClelland, R.E. O'Neill, Lieut.-Col. E.L. Hoffman, and Captain Harry A. Halverson.

Captains Orvil A. Anderson and R.P. Williams arrived on March 14th for temporary duty.

Lieut.-Colonel Ira A. Rader was a visitor on March 16th. He is now on leave of absence from his duty as Air Officer of the 4th Corps Area.

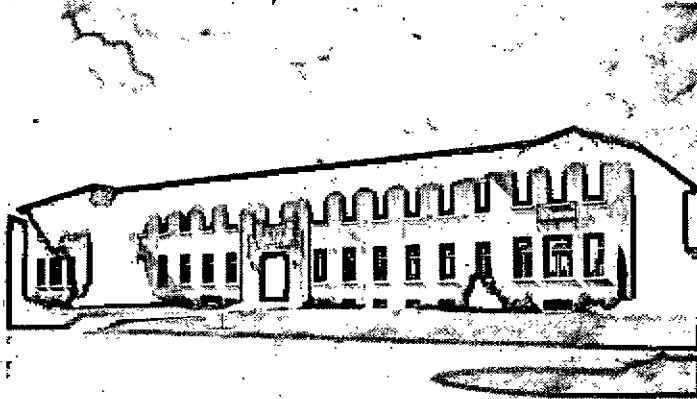
Captain Gordon P. Seville arrived on March 16th for temporary duty for the purpose of consulting various officers in the Chief's Office concerning a study made by the Air Corps Board at Maxwell Field.

Major E. H. Dichman, Air Reserve, who, prior to his resignation from the service, was on duty at the Materiel Division, Wright Field, dropped in to shake hands with his friends in the Chief's Office who, in turn, congratulated him on his recent marriage. Major Dichman just returned from a tour of China. He is associated with the Chance Vought Corporation.

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★ Air Corps ★
News Letter

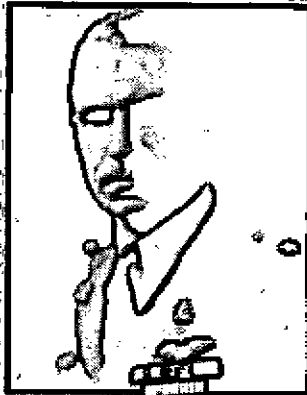
Issued by the Office of the Chief of the Air Corps,
War Department, Washington, D. C.



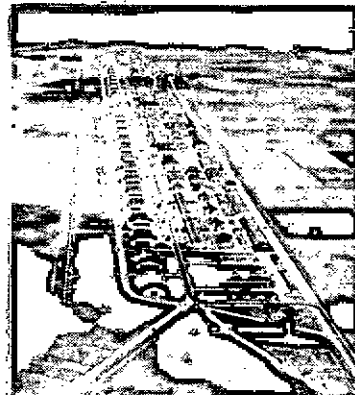
School of Aviation Medicine, Randolph Field, Texas



Hangar One, Randolph Field, Texas



Brigadier General James F. Clancy,
Commanding
The Air Corps Training Center



Kelly Field, Texas



Randolph Field, Texas

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Information Division
Air Corps

April 1, 1936

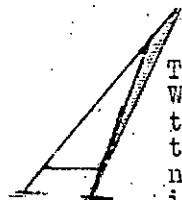
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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YESTERDAY AND TODAY

By Brigadier General James E. Chaney, Air Corps



At the beginning of the World War, France and England were the strongest belligerents in the air. They were the first nations to appreciate the military possibilities of the airplane and to prepare for its use. Germany had concentrated her main efforts in the development of dirigibles but also had kept well abreast of the progress in airplane development. The Air Corps at that early date was a separate branch of the Army both in France and England, the Royal Flying Corps having been established as a separate branch in England as far back as April, 1912. In Germany and Italy the Air Service was part of the Communications Troops. When we entered the war in 1917, our Air Service was a section in the Signal Corps.

At the close of the war, Great Britain was the strongest nation in the air. By that time England had formed an Air Ministry coequal with the Ministries of War and Navy. France had an Under-Secretary of State for both military and naval aviation, and Italy, Germany and the United States had changed over to the separate branch organization.

During the war period, tremendous strides had been made in developing new types of airplanes. Initially the Observation type only was used. Then it soon became apparent that it was just as important to prevent the enemy from getting information as it was to secure it for one's own forces. This resulted in air fighting and the beginning of the Pursuit airplane. Pursuit airplanes also forced mutual protective measures resulting in formation flying. They operated in flights, squadrons and groups, facilitated the carrying out of observation and bombing missions and tried to prevent the enemy from doing so.

Then the Bombardment airplane was developed for the strategical bombing of industrial centers and key positions in lines of communications. Light Bombers and Pursuit planes were used in special situations against ground troops. Bombardment operations were being undertaken on an ever-increasing scale by

the Allies, and had the war continued these operations against Germany would have increased at least sixfold by the spring of 1919.

The Germans were the first to develop and utilize a special attack airplane and attack units. This was in 1917. However, the French and the British recognized the value of Attack aviation under certain conditions and used light bombing, pursuit and observation units for this purpose in practically every major operation in 1918.

At the conclusion of the World War and as a result of the experience gained thereby, it was apparent:

That Observation aviation, with developments in photography and radio, would play continuously more important tactical and strategical roles.

That two new classes of aviation had been found to be essential, namely, Bombardment and Pursuit.

That, in addition to the direct cooperation with ground units, an air force, composed of all classes of aviation, was a new and effective weapon for executing distant strategic missions to further the plan of the armies as a whole.

Today France is the strongest nation in the air. England has retained its Air Ministry. Both France and Italy have changed to Air Ministries since the war. Russia and Germany are building up strong air organizations under their Ministries of National Defense. All of these countries, due to their geographical proximity to each other and their contiguous frontiers, consider their Air Forces as their first line of defense. In Japan and the United States, military aviation is being built up as arms of greatly increasing importance in both the Army and the Navy. This is due to their greater geographical isolation and to the fact that their navies are considered their first line of defense.

Today military airplanes are far superior to those of 1918 in speed, radius of action, useful load, rate of climb, ceiling, reliability and defense in the air. These factors, together with improvements in navigation equipment, radio and armament, have greatly ampli-

fied their strategical and tactical roles both as to scope and effectiveness. All efforts towards an all-purpose airplane have been failures, and specialization in types continues in all countries. Today the leading nations have corps and army Observation, long range strategical Observation planes of land, flying boat and amphibian type, light and long range Bombardment, single-seater, two-seater and multi-seater Pursuit, Attack airplanes, Cargo and Troop Transports, and Primary, Advanced and specialized training types. The outstanding developments today are in range, speed and military loads, use of cannon and multi-machine guns, and in the ability of Bombing aircraft to operate readily and effectively from floating bases.

Based on press reports of air maneuvers in the leading countries in recent years, it is apparent:

That today Bombardment aviation is the most important and main air arm and is rapidly playing an increasingly major role year by year.

That Bombardment, Pursuit, Attack and Observation operate as an Air Force to get the best results; that while each in its action contributes to the success of the bombardment mission, Bombardment when in the air neither requires nor expects protection other than its own defensive means.

That Attack aviation is no longer a weapon of opportunity, for, due to its greatly increased powers, remunerative targets are always available.

That initial results may well be the decisive factor in modern war.

That the immediate and successful employment of an air force and highly mobile mechanized ground forces permits the assumption of the initiative and paves the way for retaining it both in the air and on the ground.

That without freedom of action in the air, without adequate information of the enemy, and with his supply lines harassed and main reserves attacked and delayed, a belligerent is helpless in modern war.

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"BIRD OF PARADISE" GOES TO THE MUSEUM

The Fokker airplane "Bird of Paradise" in which Captains Lester J. Maitland and Albert F. Hegenberger made their historic flight from the West Coast to Hawaii in June, 1927, is now being prepared for shipment at the Hawaiian Air Depot, Luke Field, T.H., preparatory to shipping it to the Aeronautical Museum at Wright Field, Dayton, Ohio. The "Bird of Paradise" had been out of commission for several years and was stored in a building on the Schofield Barracks Military Reservation.

RADIO PRACTICE AT LUKE FIELD

The students of the Wing Communications School at Luke Field, T.H., used squadron equipment in an interesting radio project recently which lasted three days. Students, in groups of three, set up a net of six stations composed of squadron permanent and field ground sets. All sets were on Luke Field, but scattered around the airrome.

On the first day the students met the expected difficulties of putting their newly-learned theory into practical use. On the second day there was a tremendous improvement, and on the third and last day the net was working smoothly and enthusiasm was so high that the students wanted to continue the project. The Luke Field Correspondent states that Lieut. D.A. Cooper, Air Corps, is to be congratulated on putting the communications instruction across in such a practical and interesting manner.

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AIR CORPS SERGEANT FLIES HIS OWN

Sergeant Truman F. Taylor, of the 4th Observation Squadron, Luke Field, T.H., has distinguished himself by constructing a commercial airplane. This work was, of course, done during his spare time. According to the Luke Field Correspondent, Sergeant Taylor's work is even more commendable than it might be, due to the fact that his duties do not require him to work on airplanes. The Sergeant has been in the 4th Squadron since his enlistment in 1927, and during practically the entire time he was assigned to the armament section. Possessing a student pilot license, he flies the ship himself and, according to all reports, the plane handles very well.

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WORK STARTED ON HICKAM FIELD PROJECT

The work of transforming a small village and hundreds of acres of algaroba-covered land into a future great airport is slowly forming into shape at Hickam Field, according to the Honolulu STAR-BULLETIN.

The village of Watertown is fast becoming a thing of the past as the many small houses are being torn down and salvaged or moved away. The many, many acres over which algaroba grew so thickly as to be almost impenetrable a few months ago, now lie covered with thousands of cords of wood which is being hauled away daily in convoys from Schofield Barracks and other posts.

According to Captain Howard B. Nurse, Constructing Quartermaster, the biggest job of all preliminary work is wrecking and clearing away the small homes of the former residents of the town and clearing the land of trees and undergrowth.

(Continued on page 6.)

RANDOLPH FIELD AND ITS HISTORICAL SIGNIFICANCE

BACK of every great undertaking that has succeeded may always be found that fighting spirit of a few who, from the beginning, believed in it way down deep in their hearts, labored for it without stint, gave it their time, and turned a deaf ear to any suggestion of possible failure.

Without such men many great enterprises would never have become realities. The Air Corps being no exception to this rule, it is therefore fitting at this time that we acquaint our readers with the circumstances of the acquisition of Randolph Field and the personnel who, when a new flying field was first rumored, envisioned its meaning, realized its possibilities, and resolved that this great undertaking should be born.

In recalling the names and the work of these pioneers of aviation, we do not desire to belittle the courage and efforts of those who have carried on the successful completion of this project. However, without those first few to blaze the trail, Randolph Field would still be a vision and not a reality.

The first intimation that a new flying field was to be built in or around San Antonio followed the establishment of the Air Corps Training Center on September 1, 1926, then located at Duncan Field, Texas. Major-General M.M. Patrick, then Chief of the Air Corps; Brigadier-General Frank P. Lahm, then Commanding General of the Air Corps Training Center; Brigadier-General James E. Chaney, then commanding officer of Brooks Field, and Major-General Frank M. Andrews, then commanding officer of Kelly Field, recommended the concentration of all primary training at San Antonio. In view of the excellent climatic condition and suitable terrain, it was considered ideal for flying training throughout the year.

Various suggestions for new training fields were made, and on February 19, 1927, Congressional action was taken and funds were provided for the construction of a new flying field. These funds, however, were withheld until the land on which to build was made available to the Government.

A board of officers was appointed by the Air Corps Training Center in April, 1927, to submit plans and specifications for a model flying field that would serve the purposes in mind.

During the ensuing months, many possible sites were inspected by this board and representatives of the San Antonio Chamber of Commerce, but none possessed the necessary requirements.

Finally, in November, 1927, this committee visited a proposed site on the south of Houston Highway between Schertz and Converse. They agreed unanimously upon it as being the most satisfactory location available and recommended its procurement.

As a result of the efforts on the part of the city of San Antonio, its Chamber of Commerce and many interested individuals, the preferred site, consisting of approximately 2,300 acres, was secured at a cost of \$546,000. It was offered to the United States Government on December 31, 1927, as a gift, in fee simple, and was subsequently accepted by the Acting Secretary of War on August 19, 1928.

Early in 1927, when it was definitely established that a new Air Corps Training Center would be built, recommendations for a suitable name were requested by the War Department. May we deviate here and relate one of the little ironies of fate which deals with the name of the officer for whom the field was named. A memorandum was sent out to the Commanding Officers of Brooks, March and Kelly Fields, requesting an appropriate designation for the new field. Captain William Randolph, at that time Post Adjutant of Kelly Field, was requested to take this matter under consideration. He presided at subsequent meetings of Kelly Field officers when several possible names were discussed and discarded. His ultimate recommendations are not available; a short time later, or to be exact, on February 17, 1928, Captain Randolph met his untimely death in an airplane crash at Gorman, Texas. Very strange, but fittingly, "RANDOLPH FIELD" was named in memory of Captain Randolph, a native Texan, a war-time officer, a pilot, and one who gave his life on his native soil to the progress of aviation. The name "RANDOLPH FIELD" was recommended to the War Department by General Fechet, then Chief of the Air Corps, as a fitting tribute to "BILL." It was accepted and officially announced in orders of that Department, dated September 27, 1928.

The actual construction of Randolph Field was begun on October 11, 1928. The first buildings were occupied by school troops on October 15, 1931, when the Primary Flying School and the School of Aviation Medicine from Brooks Field, the Air Corps Training Center Headquarters from Duncan Field, and the Primary Flying School from March Field, Calif., took up permanent residence. The project as it now stands represents a total investment of some \$12,000,000 exclusive of aircraft, supplies and equipment.

Randolph Field was officially dedicated on June 20, 1930.

The land, on which stands the most complete and modern air training center in the world, consists of 2368 acres, of which 400 acres in its geometric center are confined to the building area. The remaining 2,000 acres, comprising four distinct landing areas, known as the "NORTH," "EAST," "SOUTH" and "WEST" fields, completely surround this central web-like pattern of buildings and streets.

Looking south from the main entry, one sees the Administration Building, which is an ingenious architectural achievement in modernistic design, and which houses the Photo Section, administrative offices, War Department theatre, and the post office. This building, which is the predominating structure on Randolph Field, rises to a height of 175 feet and overlooks the surrounding plain. At night, the beams from a powerful revolving beacon atop the tower can be seen by flyers for a distance of fifty miles.

The circular residential area in the center of the great flying field is of Spanish architecture. In fact, all buildings on the post show the Spanish influence. In the exact center of the building area stands the Officers' Club. It is beautifully appointed, having a ballroom, grill, card rooms, barber shop and lounges, and is one of the finest clubs in the service today. The officers' homes surround the club, being symmetrically spaced on the concentric circular streets and radial spoke-like roads. The majority of the homes are of two-story design. However, there are a number of the bungalow type.

Immediately surrounding the central circular quarters' area is a square pattern of other buildings; shops, hangars, barracks, etc. The administration building previously mentioned, with its majestic tower, is the key-structure of this group and is the point of orientation for the casual visitor confused by the maze and similarity of the many streets.

Flanking the administration building at the left of the main double boulevard entrance to the field stands the Post Chapel, a recent addition to the station. It is a magnificent structure of Spanish design, where one is privileged to worship regardless of religion, creed or nationality.

Just across the main traffic artery is located the Post Exchange. This building consists of three separate wings, octagon-shaped, with patio in the center, beautified by a cool tiled fountain with sparkling goldfish. One wing houses the Post Exchange proper; the second is occupied by a grocery store and meat market, and the third by a restaurant and beauty parlor.

Extending the full length of the building area and forming the boundary on the west and east sides are eight hangars in a line. Each hangar measures 220 feet

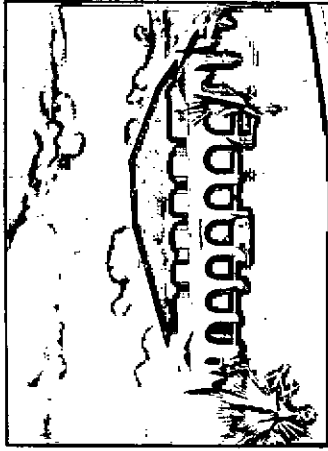
in length, 110 feet in width and is 47 feet high. In the center of the line of hangars on both the east and west sides is located the stage operations and parachute building. On the northwest boundary, two large warehouses house the Post Quartermaster and the Air Corps Station Supply.

The personnel of the field consists of approximately 200 officers and 1500 enlisted men. This personnel includes student officers and flying cadets. To house this group there are 174 houses for married officers; 80 sets of bachelor officers apartments, in two buildings of 40 apartments each, and 168 sets of non-commissioned officers' quarters. There are five sets of barracks accommodating 250 enlisted men each, and one barracks for 300 men. Also, just south of the quarters' circle are two sets of barracks which accommodate 400 flying cadets. Nearby, and convenient, is the academic building which houses the classrooms for instruction in ground subjects, as well as a radio laboratory and technical library.

The post hospital, tangent to the quarters' area, operates wards totalling a capacity of one hundred men. In addition thereto, there are 26 private rooms to handle special cases. Adjacent to the hospital is the School of Aviation Medicine, the only school of its kind in the world, where the necessity for physical standards for aviation pilots is taught to flight surgeons.

The reservation is approximately two miles square, with the building area in the center. The advantages of this type of field are (1) It provides a flying line of sufficient length to accommodate the required number of airplanes; (2) It provides a clear field irrespective of wind directions; (3) It is possible to get airplanes from hangars, off the field, and vice versa in the safest, most expeditious and most efficient manner possible; (4) Taxying of airplanes is reduced to a minimum; (5) Maintenance, operation and school activities are more concentrated, tending towards economy of effort and transportation.

The gigantic gasoline distribution system in use is a marvel of engineering. Briefly, it is described as follows: It is known as the Aqua System and operates on the hydraulic principle and utilizes two laws of nature - first, that gasoline is lighter than water; and, second, that gasoline and water cannot mix. Gasoline is unloaded from railroad tank cars into eight storage tanks by gravity and is then forced by water pressure, obtained from the post water system, to four auxiliary storage tanks located adjacent to the flying line. The same principle of water pressure is applied to each auxiliary tank to force gasoline to numerous servicing pits. An operator or mechanic desiring to service an airplane merely closes an electric switch located in the



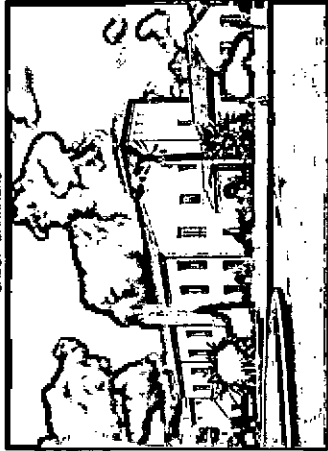
CADET ADMINISTRATION



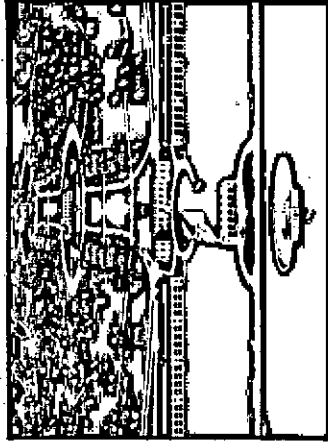
TRAINING PLANE



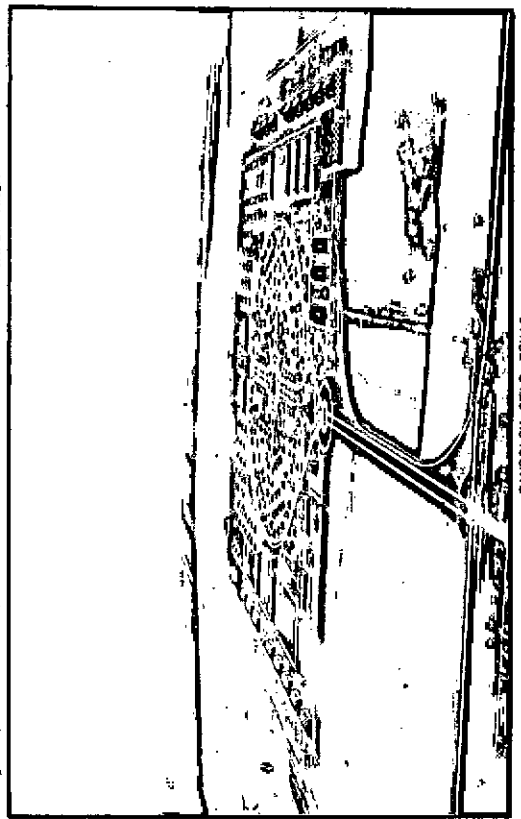
CADET BARRACKS



OFFICER'S CLUB



CADET AREA



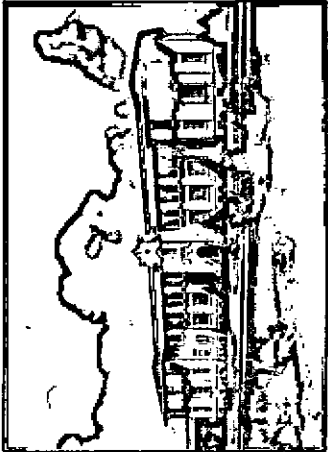
RANDOLPH FIELD TEXAS



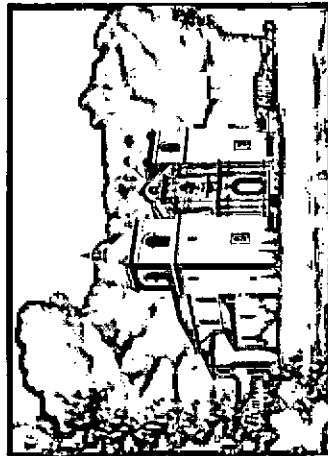
CADET INSTRUCTION



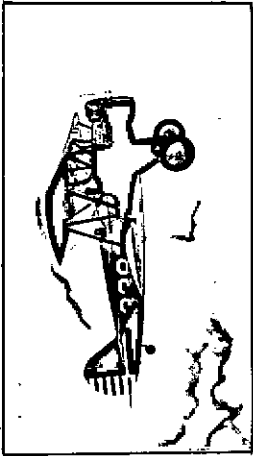
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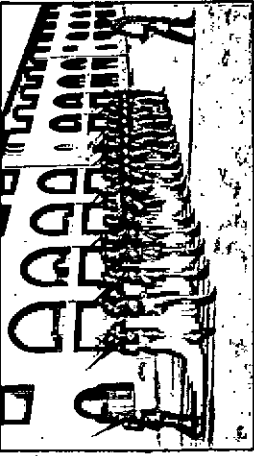
ACADEMIC BUILDING



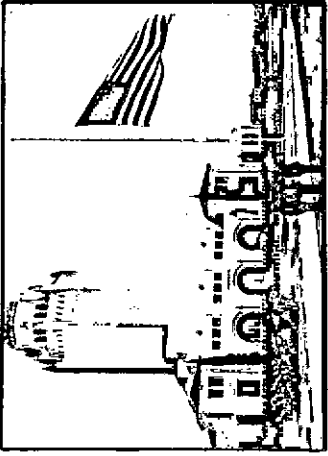
POST CHAPEL



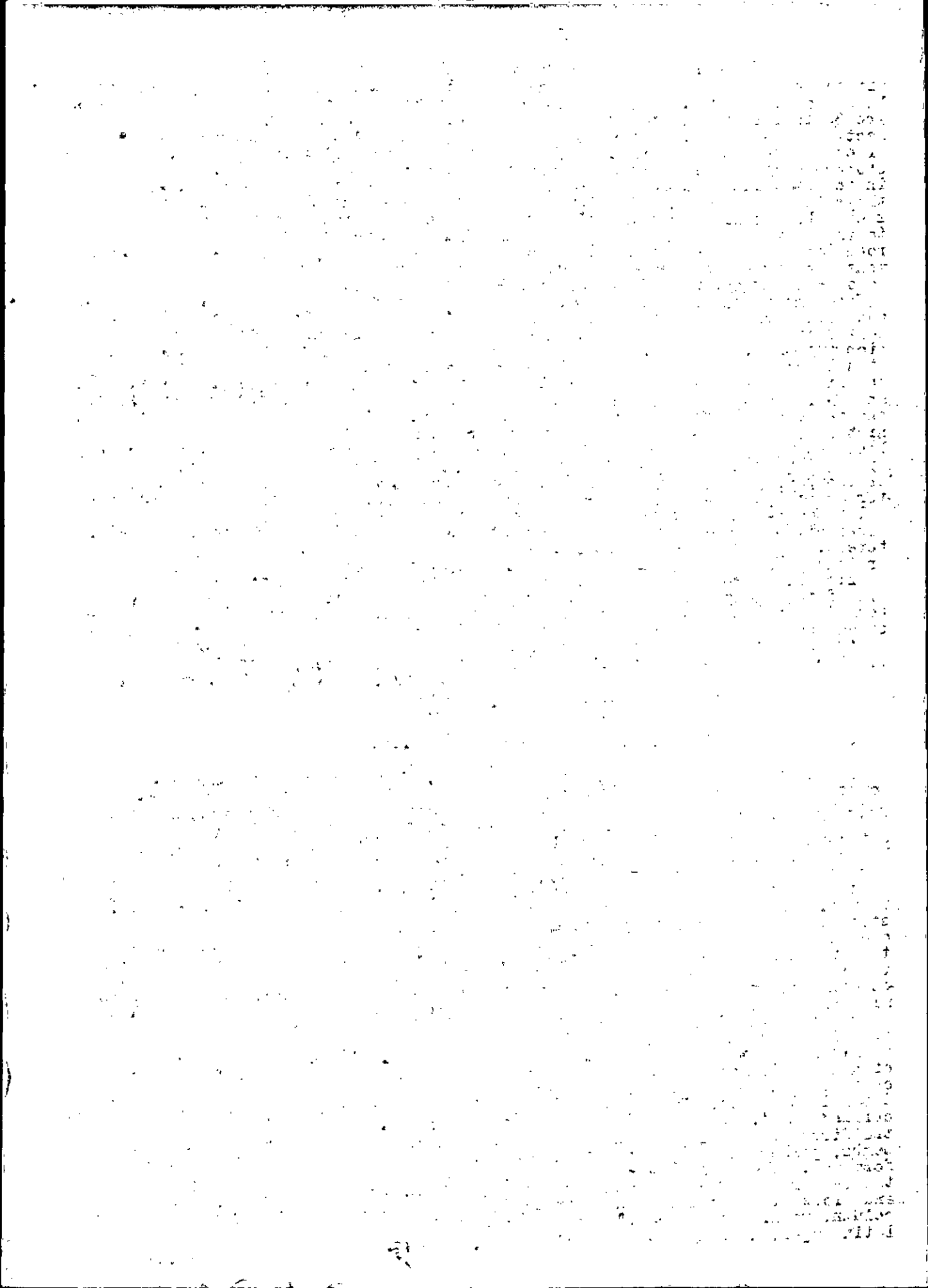
TRAINING PLANE



CADET DRILL



ADMINISTRATION BUILDING



pit to secure a metered flow of gasoline from his servicing hose. There are 32 individual servicing pits connected through a complicated system of pipes to the 300,000-gallon gasoline storage system. Any dirt which may be in the floating gasoline sinks into the water below. Since the water keeps the gasoline pressing tightly to the roofs of the tanks, there is no room for air in the tank, which prevents gas fumes forming explosive vapor - truly a safe and ingenious idea.

Water is obtained locally from wells and pumped electrically to the tank concealed in the tower of the administration building, from where it is distributed by gravity to the entire field. Of the nine wells sunk, five are active and four are inactive. Only three of the wells are operated at one time, furnishing a combined output of 1,725 gallons per minute. This quantity is barely sufficient in the summer season and presents a future problem for the Quartermaster Department.

The following facts relative to the reservation area in general are of interest. There are 35 miles of field drainage. The entire building area is planted with trees, shrubs and grass. All of the flying field is planted with bermuda grass. There are 18 miles of paved roads. The utilities are provided by means of 12 miles of water mains, 11 miles of sewers, and 10 miles of gas

lines. There are also many miles of electric light and telephone wiring, all of which are underground.

Broad, tree-lined boulevards, with their parallel drives separated by wide strips of lawn and gardens; ornamental rock piles with sparkling fountains; lily pools and exotic flower beds with rare varieties of cacti, sotol and yuccas, are all immensely effective in making Randolph Field the show spot of the southwest, if not the most beautiful in the world.

Randolph Field is a thriving community of which Bexar County and the State of Texas may well be proud, as it is today virtually a city within itself, with a population of approximately 3,000, of which 1,700 are military personnel and the remainder civil members of the military family head, civilian employees and domestic help.

Randolph Field is also a station that the Air Corps in general and San Antonio in particular may point to with pride. It is not only an attraction and point of interest for visitors, but it is a vital part of the defensive scheme of the United States. This military city is a well organized, disciplined and controlled unit which, as such, contributes materially to the prosperity of the surrounding country, not alone because it is a physical attraction and an artistic asset to the State, but because of its great monthly payroll and the associated business enterprises which it requires for its existence.

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ATTACK DEMONSTRATION AT MAXWELL FIELD

Coordination of the Attack Aviation course at the Air Corps Tactical School with the present work carried on by the 3rd Attack Group of Barksdale Field was effected in part by a demonstration at Maxwell Field, Ala., on January 27th. Nine planes of the 8th Attack Squadron, commanded by Major Lester J. Maitland, flew to Maxwell Field on the 26th and stood by to undertake such missions as ordered. Unfortunately, the demonstration was limited to two problems due to the lack of facilities to enable the students to view the numerous types of missions possible.

The first problem called for the spraying of an enemy airdrome with chemical, and was accomplished by means of a low altitude approach in an echelon of elements, each plane covering a predetermined area. The second problem, carried out in much the same manner as the first, was an attack with parachute bombs, perhaps the most impressive performance. Upon the completion of these, the squadron drilled in both tactical and close order formation emphasizing column, rallies and concluded by simulating a group using code signals. The

drill gave evidence of excellent air discipline and ease of maneuverability.

During the demonstration, a receiving set, adjusted to the frequency used by the squadron, enabled those on the ground to hear all commands given by radio. The Third Attack Group Commander, Lieut.-Colonel E.L. Naiden, was present to explain the maneuvers and answer questions.

Officers of the 8th Attack Squadron who participated were: Major Maitland, Captains R.F. Tate, K. Crosher, P. Meisenholder, Lieuts. Sweeney, Kunish, Vidal, Lawing, Carney and Templeton.

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MORE FIRST PURSUIT ENLISTED MEN SENT TO BARKSDALE FIELD TO ASSIST IN GUNNERY

In addition to the eleven enlisted men of the 1st Pursuit Group already at Barksdale Field, Shreveport, La., assisting in gunnery operations of members of this Group, twenty-seven enlisted men were transported from Selfridge Field, Mich., to Barksdale Field on March 4th, last.

AIR CORPS ACTIVITIES AT MOFFETT FIELD, CALIF.

By the News Letter Correspondent

On October 25, 1935, the Navy Department formally transferred their partly developed western airship base to the Army Air Corps. Lieut.-Colonel Horace N. Heisen, Air Corps, with a station complement of six officers and 140 enlisted men from Rockwell Field, Calif., formed the original garrison, which was later augmented upon the arrival of the 19th Airship Squadron from Langley Field, Va. The garrison today consists of these two units; the first having four Air Corps officers, a Quartermaster, and one Medical Corps officer. The latter unit has three Air Corps officers. In January, Major Clarence B. Lober, Air Corps, succeeded Lieut.-Colonel Heisen as commanding officer upon the latter's transfer to the Letterman General Hospital, in addition to retaining command of the 19th Airship Squadron.

The Naval Evacuation unit completed their evacuation of the field soon after January 15, 1936. Army machinery and equipment soon were in place, and the Station Engineering Department began to function.

On February 1, 1936, the 19th Airship Squadron resumed tactical training and the conduct of engineering tests which had previously been held in obedience pending a resumption of operations. Slight handicaps have somewhat hindered airship operations. At first the most serious of these was the maneuvering of the airship on the wet field and the subsequent "miring in" of the mobile mooring mast. This condition is being corrected by applying mud-scrapers to the wheels of the mast, and by providing crushed rock approaches to the south hangar entrance. Valley fogs are an occasion for concern, particularly upon the return of the airship from cruises extending overnight. The closeness of the mountain ranges bounding this valley on the east and west and the presence of other obstacles, such as the 600-foot commercial radio mast located six miles to the north, point to the necessity for extreme caution during foggy periods. This is particularly true during this period when the station is awaiting receipt of a portable radio beacon and the return of the airship's radio compass, recently transferred to the Materiel Division for modifying changes.

To those not acquainted with the station, the following points may be of interest: Moffett Field is located on the Bay Shore Highway to San Francisco, which is forty miles to the north. Palo Alto is six miles to the north, and San Jose twelve miles to the south of the field. Mountain View, a city of 6,000, is but one and one-half miles from the field and the place of residence for the majority of military personnel on a commu-

tion status. This group must of necessity use their own transportation to and from the field.

The field boasts of an excellent commissary, post exchange, and motion picture theatre with three buildings. All buildings are of the Spanish California type of architecture, except the airship hangar. There is one large barracks in which is operated a consolidated mess. This building can accommodate 450 enlisted men. There are no noncommissioned officers' quarters, although temporary buildings have been occupied by two families. Nine sets of quarters for married officers, five of which are of the field officers' type, form one section of the post. A bachelor officers' quarters, consisting of thirty apartments, occupies a balancing position opposite the barracks and is separated from the barracks by the parade ground. The hospital, located next to the bachelor officers' quarters, is balanced on the other side of the parade ground by the recreation building. The effective landscaping of the grounds, together with the attractive arrangement of buildings and their distinctive type of architecture, might easily suggest the thought, "most beautiful of posts."

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HICKAM FIELD

(Continued from Page 2).

This preliminary work is almost completed. Only a few of the houses still remain and they are in the process of being moved. The brush is cleared away and the wood is stacked in piles of a truckload each and fast being hauled away.

Some of the future streets are already laid out, named and partly graded, all streets being named for officers and soldiers of the Air Corps who have been killed or who have died in service in Hawaii.

In Captain Nurse's office are the plans for the whole new post, showing in detail the arrangement of headquarters and administrative buildings, hangars, barracks, officers' and noncommissioned officers' quarters, recreation centers and streets.

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A NEW KIND OF A CLUB

An organization recently has been started in the City of Shreveport, La., calling itself "The Avigators' Club." Its members are given courses in "Avigation" and allied subjects by Captain Albert Wood, formerly of the Air Corps. In addition, those desirous of so doing are to be given instruction in flying. A great deal of publicity has been given this organization and the leaders propose to do all in their power to advance aeronautical knowledge.

V-6973, A.C.



THE COLD WEATHER TEST FLIGHT

By the Barksdale Field Correspondent

The 55th Pursuit Squadron, under the command of Major Armin F. Herold, left Barksdale Field on January 30th for Mitchel Field. This Squadron of 20 pilots and P-26A airplanes was a part of the winter test group which conducted tests of cold weather equipment from February 1st until February 15th.

Bad weather barred the southern route to New York. When the time came for the take-off, it was decided that the northern route would be used. This was sad news to many of the pilots. Instead of two or three more days of warm southern climate, they were taken right into the cold wave that had been gripping the central U.S. for days. At Louisville, the next morning after leaving Barksdale Field, several of the planes refused to start. Many suggestions were handed out as to how to start motors in cold weather. Finally, all but four were started, and the Squadron landed at Dayton in ten degrees below zero weather. From Dayton, all planes (the four balky engines had rejoined the flight) went to Bolling Field. Here bulkheads were cracked in the tails of two planes, making it necessary that they be ferried to Middletown Air Depot for minor repairs. The next morning a Transport plane ferried the pilots of the two damaged planes the rest of the way to Mitchel Field, where the winter test was getting under way.

Heavy equipment was issued to the pilots for use in the cold weather, and during the course of the day it was nothing to see some weary looking pilot sitting in a snow drift complaining of the heat.

At Mitchel Field the Squadron went on the alert each morning and awaited radio orders. All maneuvers were radio-controlled, and orders were radioed from the central plotting room of a simulated observation net. At the end of each problem, all machine guns were fired, the airplanes were staked down upon the ice-covered field and were barred from anything that even looked like a hangar.

Lieut. Strother and his crew of Selfridge Field mechanics were busy after each problem. Planes had to be covered and maintenance had to be performed in zero weather. In the morning before the sun had risen, the mechanics were down on the line starting the fire pots, placing them under the engine tents and standing by watching very carefully until the engines were warm enough to crank. Let it be said right here that these men never failed once at starting engines during the entire maneuvers. They knew their fire pots.

On the 7th day of February, the pilots prepared their equipment for an early take-off for Burlington, Vermont. It seems that they all welcomed this change of scenery and were glad to escape the lure of the big city.

At Burlington, Vermont, the Pursuit problem was "The defense of the Burlington area." No observation net was used, and all work was done by patrol method. The missions were much longer, and some were scheduled for three hours' duration. The "Enemy" aircraft were Bombardment and Attack planes from Concord. These planes would come through at different intervals and in different sized formations.

The Burlington Airport was used for the Pursuit base. Runways were plowed through the 18-inch snow that covered the airport. It was this snow, piled up some five or six feet high along these runways, that Lieut. Desmond had the misfortune of hitting while taking off one morning. His plane was completely wrecked, but he escaped without a scratch. He was, indeed, very fortunate.

Another piece of tough luck hit the Squadron that same morning. As he landed, Lieut. Minnis overshot the runway and his plane turned over on its back in a snow bank. Minnis was unhurt and his plane, with a few minor repairs, was flown during the rest of the maneuvers.

The temperature encountered varied from ten degrees above zero to twenty degrees below zero on the ground. One pilot reported to Captain R.E. Lee, the surgeon, with fingers frozen, while another had V-6973, A.C.

his face frozen. A good bath in the snow fixed these frozen individuals and they continued with their flying.

While at Burlington, Vt., the Squadron lived at Fort Ethan Allen, and members thereof were warmly received by many of their old army friends, and the citizens of Burlington. The Squadron was delightfully entertained by both of these groups and made many pleasant contacts which will long be remembered.

After all the Attack and Bombardment airplanes had been "shot down" and the Concord Airport "destroyed," the maneuvers ended on February 15th. The Squadron proceeded to Mitchel Field for a check-up on planes before departing for home. Bad weather set in as soon as the Squadron landed at Mitchel, and the meteorological expert said that it would continue for several days. His statement was correct, and the Squadron did not leave until the 19th. After an overnight stay at Bolling Field, the rest of the trip was made via Spartanburg and Maxwell Field in one day. Despite the beauties of the frozen North, home looked especially good to all of the pilots when they landed after dark on a rainy night at Barksdale Field.

The 13th Attack Squadron, under the command of Major E.M. Morris, departed from Barksdale Field at 10:30 a.m., Tuesday, January 28th, for the cold weather test flight. This flight was made up of ten officers and ten enlisted men. Captain W.P. Sloan was sent ahead to Mitchel Field as advance agent and contact man. This was a very effective method of assuring cooperation and attention from the ground troops at the points where necessary stops were made for gasoline, etc. The flight to Mitchel Field as our first base of operations was made without mishap. Intermediate stops were made at Jackson, Miss.; Maxwell Field, Ala.; Candler Field, Ga.; Pope Field, N.C., and Bolling Field, D.C. The weather on this trip seemed extremely cold to the orchids nurtured in the warm and sunny climes of Louisiana and Texas and to everyone seemed a bad omen of the times to come.

Upon arrival at Mitchel Field, all of the planes but one were immediately staked out in the snow, and the war was on. One ship was taken to the machine shop shorn of its pants and decked out in skis. This ship was henceforth very affectionately (?) known as the "Robert E. Lee" after the redoubtable paddle boat it so closely resembled.

At Mitchel Field the socialites immediately stepped into their own - to be sure some stepped just as hurriedly out - and New York may never recover from the shock. The reunion between some of the P-shooters and the 13th was heartrending, especially since they hadn't seen each other since leaving Barksdale Field, three full days before.

Here we had attached to us 20 men to act as crew chiefs, gunners, armorers and radio men. Twelve of these men, including Sergeant Nero, were from the 37th Attack Squadron and eight were from 8th Pursuit Group Headquarters. The morale of the men throughout the Test was of the highest possible caliber, and the attached men worked in perfect cooperation with our own personnel. The high morale may be easily inferred from the fact, that on Sunday, February 9th, a holiday with a cold snow falling, the men accomplished eight 40-hour inspections. This work, done on their own time in freezing cold, did more than anything else to keep all the planes in the air. Sergeant Nero was made line chief and functioned as such throughout the Flight. The character of the men, their morale and efficiency and their desire to "put out" cheerfully, no matter what the job or the weather, was at all times gratifying.

New flying clothing was issued at Mitchel Field that was a great improvement over that issued last year. New mechanical contrivances of all sorts were issued, and on the 1st of February we were ready to begin. The flight stayed at Mitchel Field until the third. Some trouble was experienced with our machine guns, but that was soon ironed out. None of the heated Pitot tubes worked satisfactorily, and it was not possible to correct this immediately, although it was corrected in time. But we did have cases at first of ships landing at 220 miles per hour and at 0 miles per hour according to the air speed indicators. On the fourth we were unable to fly due to severe icing conditions, and on the fifth we moved to Concord, N.H.

Through no fault of the personnel responsible, the living conditions at Concord were neither comfortable nor satisfactory. The personnel concerned did everything humanly possible to make our stay as pleasant as possible, but the handicap was too great. We all slept in an armory, Bombardment and Attack, much on the order of sleeping in a hangar. There were 63 beds in one room with space enough to hold a dance besides. Sleeping on canvas cots that proved anything but comfortable, and so many humans in there together - well, it is a wonder that there were not a few dozen murders before we were through. The food, however, was excellent, which was a great saving feature.

All of our missions, save one, were attacks on the Burlington area, supposedly defended by the 55th Pursuit Squadron. Of seven attacks staged on Burlington, the Attack was intercepted by the Pursuit on but one. One mission was an attack on the Albany area, flying over Florida on the way, which called forth hoots and catcalls from nine half-frozen pilots.

On Friday, February 14th, at 8:30 a.m., the war was declared over, and prepara-

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tions were begun to evacuate. On the 15th, the evacuation was accomplished, and the Provisional Cold Weather Test Group was disbanded at Mitchel Field.

The weather was very good for the duration of the Test. The temperature was uniformly in the neighborhood of zero Fahrenheit, for starts in the mornings, and slightly colder during flight. The visibility was usually excellent, with distances up to 60 miles at times. One snow storm or blizzard hit Concord on a Sunday when we were not scheduled to fly, so no time was lost due to weather. One mission attempted by the Attack Squadron had to be called off after reaching the mountains on our way to Burlington, because of a thick snow storm, in which the flight leader had only momentary glimpses of the second and third element and finally lost the third element altogether.

The average flying time was around four hours a day. No discomfort was experienced by the pilots equipped with the new flying clothing except for the hands. The new gloves were very pretty but lacked warmth. The rest of the equipment was very satisfactory.

On February 8th, almost all of the officer personnel took advantage of an opportunity to go to Hanover to see the Dartmouth College Winter Carnival. This magnificent spectacle was enjoyed by everyone who went to see one of the few scenes of its kind in the world. On February 12th, there was a winter carnival in Concord, featuring the antics of the fearless Bombardiers on skates. In the morning there was an engine starting contest, which was won by the crew chiefs et al of the 13th Attack Squadron. In the afternoon, after the flying activities of the morning, there were snow shoe races, ice skate races, ski races and, finally, a hockey game. The hockey game was won by 1st Lieut. A.F. Merewether who, with the aid of five others, by the name of Joe, represented the Attack Squadron. The final score was - Merewether, 4; Bombardment, 2.

The Chamber of Commerce of Concord held a very nice banquet on February 10th for all officers of the Flight. Numerous dances were held for the men, and the whole city made every effort to make our stay a pleasant one. The weather was never unbearably cold, and the whole test was a complete success. Most of the airplanes in the 13th had 900 or more hours' use behind them since overhaul. We had all airplanes running every day for at least one mission, and on most days we had all airplanes running for all missions. The trip back was without incident. The planes did return in bunches, we must admit, but all airplanes did return, and without anything more serious than one ship losing a pair of pants in

a snow drift. Not enough credit can be laid to the 61st Service Squadron, the members of which rendered such valuable assistance throughout the flight. The entire ground echelon worked with remarkable efficiency and was instrumental in making the flight the success it was.

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GENERAL WESTOVER VISITS AIR CORPS POSTS

Selfridge Field was honored by a visit from Major-General Oscar Westover, Chief of the Air Corps, on March 9th. The General arrived by air at 11:00 o'clock in the morning. He was the guest of Lieut.-Colonel Ralph Royce at luncheon, after which he proceeded to the Officers' Club, where all of the officers and cadets at Selfridge Field were assembled and were permitted to hear an excellent talk by the General on future Air Corps policies and other pertinent information. After the talk, an opportunity was afforded each officer and cadet to greet him personally. In company with Colonel Royce, General Westover then proceeded by motor car to make a brief inspection of post activities, departing from this station the same afternoon.

On February 6th, General Westover arrived at Barksdale Field, Shreveport, La., from the West Coast in the midst of weather which was holding all pilots to very restrained local flying. A few minutes after landing, General Westover met all officers at the Club, where he generously offered to answer questions, and closed by acquainting the assembled officers with his general policies as Chief of the Air Corps and certain of his desires concerning the activities of individuals. General Westover spent the night at Barksdale Field and left the next day with even poorer weather conditions than those prevalent upon his arrival.

General Westover stopped at Scott Field, Belleville, Ill., for 30 minutes on March 10th. The visit was on official business.

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MARCH, 1936, CLASS STARTS TRAINING

The class of March '36 began flying training at Randolph Field, Texas, on March 9th. The class is composed of 61 Flying Cadets and 7 student officers, the smallest class to report for training since the opening of Randolph Field. With a class of this size, officers who are not on duty with the Flying Department are practically sure of being able to get a PT to fly during the forenoon, if they can spare the time from their other duties.

NEW DATA ON RADIO FADING
By the Maxwell Field Correspondent

On October 10th, last, the Bureau of Standards sent a request through the War Department to all Army stations with radio facilities, expressing the desire that radio operators watch carefully for an expected complete fade-out of all radio signals for about fifteen minutes between October 21-25, 1935.

During this period, no especial fading was noticed. In fact, the phenomenon was not noticed at Maxwell Field until February 14, 1936. The data are of great interest scientifically and are briefly described, as follows:

A complete fade-out occurred at 9:20 a.m., C.S.T., between 3000 and 11,000 K.C. Heavy static was present at the time. The operators looked over all bands immediately. Above 11,000 K.C., a few signals, so weak as to be unreadable, were heard. At 9:26 a.m., KDKA was heard on 15,000 K.C. with a signal strength of two. In another minute, strengths of signals above 11,000 K.C. appeared to be improving. At that time a few other commercial stations were heard with signal strengths of two. A few minutes later, several amateur stations were heard around 14,000 K.C. at a signal strength one. At this time KDKA signals had reached a strength of four.

At 9:38 a.m., WVR, Fort McPherson, Atlanta, Ga., was heard on 8,890 K.C. with a signal strength of one. At 9:44 a.m., WVR, operating on 8,170 K.C., was barely heard with a signal strength of one. At 9:45 a.m., WAR, the War Department station, Washington, D.C., was heard at 12,000 K.C., with its normal strength of four.

At 9:48 a.m., Barksdale Field and Fort Bragg, on 3,620 K.C., began to come in with a signal strength of one, increasing to normal at 9:55 a.m.

WVR, when operating on 4,020 K.C., was not heard until 10:05 a.m., with a signal strength of one. It increased to normal by 10:10 a.m.

The fading phenomenon occurred with such rapidity and completeness that it was thought that the antennas were down. No reliable observations could be made throughout the broadcast band on account of the heavy static which was occurring at the time.

The phenomenon disappeared gradually and the conditions began to approach normal at the higher frequencies first and gradually crept down to the lower frequencies.

For the layman it might be explained that a signal strength of one describes a signal which is recognized as such, but which is so weak that it is unintelligible. Signal strengths of two, three, four, etc., describe an increasingly stronger signal. Under ordinary conditions, a signal strength of four is

easily readable.

The Bureau of Standards is interested in getting all available data on such phenomena, since it may be possible to predict the occurrence and duration of them, also to find those frequencies most affected. It is possible that the conditions do not affect the ultra high frequencies. If this is the case, the Army, which has ultra high frequencies available in combat, will have the advantage of one which does not.

A radio report was made to the Fourth Corps Area Signal Officer, who forwarded it to the War Department.

On February 21, 1936, Mr. D.H. Dellinger, Chief of the Radio Section, Bureau of Standards, wrote a letter direct to the Post Radio Station, Maxwell Field, expressing appreciation for the data.

Corporal B.F. Borders, 2nd Class AM, 86th Observation Squadron, Air Corps, is in charge of the Post Radio Station at Maxwell Field.

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AERIAL PHOTOGRAPHIC WORK AT SCOTT FIELD

The 21st Photo Section at Scott Field, Belleville, Ill., has just delivered to the Fort Riley Cavalry School copies of a large mosaic, covering 560 square miles of territory in the Fort Riley region. Many weeks were spent by the personnel of the Photo Section in assembling this large photographic mosaic. The mosaic was copied on a number of 20 inch by 24 inch negatives. The original negatives were made at a scale of 1:15,000, while the copy negatives were made at a scale of 1:20,000.

Progress of construction photographs are made periodically of all dams under construction in the Mississippi River in this region for historical purposes.

These are being made for the U.S. Engineer. Another project being carried on, whenever weather conditions permit, is an aerial photograph of 4,500 square miles of the Mississippi River for use in flood control work by the St. Louis district of the U.S. Engineers. In the past two months, high water in the river, overflowed lowlands, ice and snow, cloud layers and many other things tending to interfere with good aerial photographic work, prevented any great amount of progress on the project. To date, however, over 1,800 square miles have been photographed. These photos are used to make large maps of the river. The method employed in this case differs from the mosaic assembly method in that maps are made direct from the prints by projection. This is an easier, faster and simpler method.

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RECOGNITION AT RANDOLPH FIELD
By 2nd Lieut. Jack W. Hickman, C.E.

THURSDAY night, February 20th, officially marked the passage of one class of Flying Cadets to Kelly Field and the passage of another class from the "Dodo" Stage. With no little ceremony, the two classes lined up in the mess hall, faced each other, marched forward, and shook hands. No longer were the "Dodos" a class apart - no longer were they to say "Mr." and "Sir" to those fortunate enough to be one step ahead of them. Now they were full-fledged Flying Cadets, well on their way to wings and a commission.

This fact was pointed out to them by Colonel Henry W. Harms, Commandant of the Air Corps Primary Flying School, in a few timely and well chosen words which could not have failed to impress his listeners. Brigadier-General James E. Chaney, Commanding General of the Air Corps Training Center, looked on in silent approbation while Colonel Harms extolled the qualities of a soldier as he presented Flying Cadet Wonderful A. Trembly with the Catlett Trophy for "SOLDIERLY EFFICIENCY" and Flying Cadet Ralph W. Catlin with the Williams Trophy for "OUTSTANDING ATHLETIC ABILITY."

This presentation marked the end of the old and the beginning of the new, for following this simple but dignified ceremony, Colonel Harms, assisted by Captain John M. Weikert, Commandant of Flying Cadets, issued warrants of appointment to the following Flying Cadets of the new upper class:

CADET CAPTAINS

Michael J. Coffield Troy Keith
Charles K. Nelson, Jr.

CADET LIEUTENANTS

John R. Kilgore William J. Kennedy
George R. Anderson John O. Bradshaw
Harry P. Leber, Jr.

CADET FIRST SERGEANTS

Royce G. Kunze
Churchill L. Scott, Jr.

CADET SUPPLY SERGEANTS

Cecil H. Childre Jack F. Todd

CADET SERGEANTS

Billy W. Kent Alban B. Ogden
Marion N. Pharr Park R. Larned, Jr.
Bruce H. Beesley Charles J. Howe
James C. Averill Jack L. Schoch
Alexander P. Couch William E. Parsel
Milton E. Thompson Arthur W. Schmitt, Jr.
Raymond H. Gardner, Jr.

CADET CORPORALS

Robert Boyd Frederick G. Huish
Robert C. Orth Harold W. Ohlke
Oliver D. Loomis George F. Ranney
Ira Mumm Julius H. Werle
John M. Ferris Herbert O. Wangeman
Ben I. Funk G. R. Montgomery
Charles U. Hale Arthur R. Anderson

Patrick W. McIntyre James W. Anderson, Jr.
Flying Cadets Coffied was designated as Battalion Commander, Kilgore as Battalion Adjutant, Gardner as Color Sergeant, Boyd and Orth as Color Corporal.

The actual recognition followed this presentation, and the remainder of the evening was devoted to gaiety and dancing. Music was furnished by an excellent orchestra from San Antonio, refreshments were served, and the Flying Cadets and their young ladies danced until one a.m. But no wonder it was a gala celebration - not only did it mark recognition, but also a great step in the career of some one hundred young men, each of whom follows in the footsteps of such men as Lindbergh!

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LIGHTER-THAN-AIR ACTIVITIES AT SCOTT FIELD, ILL.

The 9th Airship Squadron began the preliminary work for the re-erection of the 200,660-cubic foot airship TC-11. The airship will be ready for flying again within a few weeks.

At present the 9th Airship Squadron is operating three airships, the TC-14, TC-10 and TE-3. The average monthly gassing factor for these three airships in 1935 was 4.5%. A few years ago this figure was as high as 25%. Constant experimental work carried on at Scott Field has helped to reduce that figure to its present low mark.

The TC-14 airship has made flights recently, using all three motors. The third motor was not intended to give added speed to the airship. Instead, it was designed to drive the airship forward alone at a speed of 20 to 35 miles an hour while the two 375 horsepower motors rest or while observations are being made.

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CROSS-BREEDING AN AIRPLANE

In a press bulletin of the Bureau of Aeronautics, Navy Department, it is stated that during a recent night extended flight over a lighted airway an unexpected incident happened at Maxwell Field upon arrival there. The visibility was poor and a layer of smoke on the field apparently made the lights dim and distances deceiving. Near the end of the landing run, one student from the Navy flying training station, Pensacola, Fla., saw another plane, already on the ground, suddenly loom up in front of him. His reaction was prompt and he sharply ground looped to avoid a collision. Unfortunately, the flare bracket on the

(Continued on Page 12):

LOOKING INTO THE FUTURE

It is difficult to measure the influence which genius exerts in moulding the developments of the future. Newton and the falling apple and Watt and the bubbling teakettle assume tremendous stature. A vital idea, once it is given birth, grows to fateful fruition. Such an idea was that of Lord Tennyson, which he committed to rhyme in "Locksley Hall" twenty years before the first air-plane flew and thirty years before air-planes battled in the air.

Tennyson wrote:

"For I dipt into the future, far as human eye could see,
Saw the Vision of the World, and all the wonders that would be;
Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly bales;
Heard the heavens fill with shouting, and there rain'd a ghastly dew
From the nations' airy navies grappling in the central blue."

In these lines are predicted air commerce, air warfare and chemical air attack. The visions of today will mould the developments of tomorrow.

If you have a "vision" of the future possibilities of aviation, send your idea to the Air Corps News Letter.

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BROTHERS-IN-ARMS AT AIR CORPS POSTS

There appears to be some sort of rivalry, unconsciously, perhaps, among Air Corps posts as to which one could achieve the distinction of having the highest number of brothers among their enlisted personnel.

A recent contribution from Scott Field, Belleville, Ill., invites attention to the fact that there are eleven sets of brothers stationed at that post, which include 23 soldiers, there being one set of three brothers. This record is not very far behind the one held by Chanute Field, to which attention was called in the issue of the News Letter of October 15, 1935. Chanute Field prided itself on having 17 sets of brothers, among which were two sets of three brothers each. Just a short time before this, Hamilton laid claim to the unique distinction of having three brothers in the same squadron on the same post, only to learn that the two sets of three brothers each at Chanute Field were also members of one squadron.

In the News Letter of September 15, 1935, it was stated that the Station Complement at Brooks Field, Texas, had four sets of brothers, one a pair of twins who even had their parents guessing as to which was which. Back in 1929, Luke Field, T.H., claimed the record with eight sets of brothers, three

of them serving with the 65th Service Squadron.

Coming back to Scott Field, it is noted that the eleven sets of brothers are distributed among the organizations at that field, as follows:

Privates Gale and Verlin E. Baldrige; Oliver J. and Herschel O. Hackwith, Rollen J. and Robert A. Hall, with the Station Complement.

Privates Don W. and Harold M. Morgan, Charles and Frank Yonke, with the 9th Airship Squadron.

Privates Lawrence F. and Harold A. Brinkman with the 6th Signal Corps Detachment.

Privates Thomas W. and Ola E. Ferguson, 15th Observation Squadron, and Fred F. Ferguson, Station Complement.

Privates Charles Canady, Station Complement, and Roger Canady, 9th Airship Squadron.

Privates Leslie D. Rivers, 15th Observation Squadron, and Harold Rivers, Station Complement.

Privates Henry L. Porter, Quartermaster Detachment, and Harvey L. Porter, 9th Airship Squadron.

Privates John L. Williams, Station Complement, and Albert R. Williams, 6th Signal Service Detachment.

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Cross-Breeding an Airplane (Continued from Page 11)

right wing ploughed the ground, and the resulting stress broke the main spar out near the end bow. The next day the plane was repaired, using an Army wing courteously furnished at Maxwell Field. The plane had a strange appearance on its homeward flight, with a silver fuselage and upper wing and a standard Army yellow lower wing.

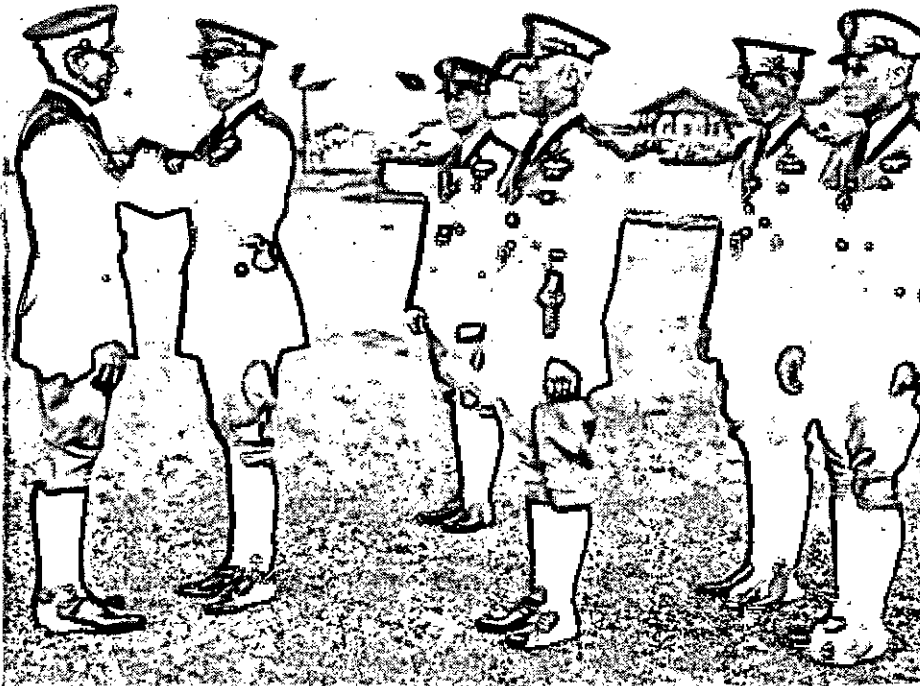
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AND WAS HIS FACE RED?

A Navy Department press release records a humorous incident indicative of minor accidents in connection with training at the Naval Air Station at Pensacola, Fla. An NY-1 training plane, piloted by an Aviation Cadet, nosed up at Z field after landing in a soft area. In the interests of the Trouble Board and photographic training, a photographer was dispatched to the scene in an O2U with an instructor as pilot. A precision landing close aboard the damaged plane in the same soft spot likewise ended in a nosed up Corsair. After hurriedly clambering from the plane, the photographer remarked to the pilot that this was his first opportunity "to kill two birds with one stone." The pilot sheepishly stood aside for the "shooting."

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Our sincere thanks are extended to the Air Corps Training Center for the cover page and inserts featuring this issue.



BRIGADIER GENERAL CHANEY PRESENTS OAKLEAF CLUSTER TO CAPTAIN ANDERSON

By direction of the President, under the provisions of the Act of Congress, approved July 2, 1926, a bronze oakleaf cluster for the Distinguished Flying Cross was on February 6, 1936, awarded to Captain Orvil A. Anderson, Air Corps, Kelly Field, Texas, for extraordinary achievement while participating in an aerial flight as pilot and assistant scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight, November 11, 1935. The presentation was made in the presence of the assembled command of Kelly Field on March 7, 1936. The above photo shows General Chaney making the presentation, the other officers from left to right being: Captain Bevans; Colonel Fickel, Major Nutt, and Major Knapp. The citation quoted below was read to the entire command:

"Orvil A. Anderson, Captain, Air Corps, United States Army. For extraordinary achievement as pilot and assistant scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight which started from the vicinity of Rapid City, South Dakota, on November 11, 1935, and successfully landed near White Lake, South Dakota, with the scientific equipment and the valuable records it contained intact. In performing this flight Captain Anderson distinguished himself by extraordinary achievement, coolness, and confidence, in piloting the largest and most heavily equipped balloon ever flown to a greater height than had previously been attained by man."

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THE FLYING CADETS' CLUB AT SAN ANTONIO

By Flying Cadet Howard L. Fuller

THE Flying Cadets at the Air Corps Training Center have recently effected a reorganization of their social activity in San Antonio. For years the Cadets patronized the Aero Club, promoted by a civilian and operated in conjunction with several other enterprises. This situation had, for several classes, created a great deal of dissatisfaction. Minor efforts of various committees to improve conditions had accomplished but little. Upon investigation, the committee of the July, 1935, Class, decided that the only way to effect a satisfactory reform was to break away entirely from the old order.

Despite some skepticism and adverse criticism, the Flying Cadets themselves accomplished the disintegration of the old management and the inauguration of the new. The entire movement would not, however, have been possible without the splendid example and cooperation of Captain John M. Weikert, A.C., Commandant of Flying Cadets. The organization of the new Flying Cadet Club in San Antonio is indicative of the constructive and ceaseless activity of this officer in his endeavor towards bettering conditions with the Cadet Detachment. It is largely through his efforts that the Cadets now find themselves enjoying club rooms and privileges which are far superior to those of the recent past.

The new affiliation is with the San Antonio Casino Club, 102 West Crockett Street, San Antonio, Texas. The club rooms are to be found on the fifth floor and include private card rooms, pool tables, a radio, a library, a table of current magazines, and ample room for relaxation amid cheerful and luxurious surroundings. The sixth floor of the building contains a ball room with an excellent floor and a kitchen-dining room annex. This can be made available for tea-dancing on Saturday afternoons from three to six with no special assessment to the members.

A further outstanding advantage which accrues to the Flying Cadets by virtue of this agreement with the Casino Club is a guest-privilege at many other fine clubs which are affiliated with the local organization. Included in the imposing list of affiliated clubs are the Los Angeles Athletic Club, the Houston Club, the Pacific Coast Club and the Newark Athletic Club. By merely obtaining a letter of introduction from the Secretary of the local club, a Flying Cadet going to a new station or on a navigation flight may enjoy the privileges of the best clubs in the largest cities in the United States, as well as two in Mexico and one in Canada. This

affords an opportunity for the enhancement of social prestige and fellowship wherever a member goes. The true significance and importance of this feature will become apparent as future classes leave the Air Corps Training Center.

The club membership dues are \$1.50 a month, payable in advance. There are no initiation fees. Of the \$1.50, the Casino Club receives \$1.00, and the 50¢ accrues to a fund at the disposal of the Flying Cadet Committee which, under the supervision of the Commandant of Flying Cadets, is in charge of the club's business. In addition, this Committee has made arrangements with leading hotels in San Antonio for rates on rooms for Flying Cadets who desire to stay overnight. It is expected that dinner-dancing privileges may also be obtained at a special low rate. Organization and a common policy will now enable the members of the Flying Cadet Detachment to enjoy many privileges which were not possible in the past.

The Flying Cadets are very proud of their new club and cordially invite all Air Corps officers and ex-Flying Cadets to visit it at every opportunity. They are heartily welcome, and every effort will be made to further their comfort and enjoyment while visiting at the Training Center or in San Antonio.

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GUARDSMEN TRAIN FOR SUMMER CAMP

In preparation for their annual encampment at Fort Lewis, Wash., June 12th to 26th, next, pilots of the 41st Division Aviation, Washington National Guard, have entered upon an intensive training schedule in aerial gunnery and photography. The aerial gun cameras head the weekly training flight schedules in preparation for a record in firing during the camp.

Each pilot and observer will also photograph a strip, using complete camera equipment, before the camp period. Arrangements for gunnery at Fort Lewis will be made for the 41st Division Aviation by Captain Davis, Commander of the Fort Lewis Air Corps Detachment.

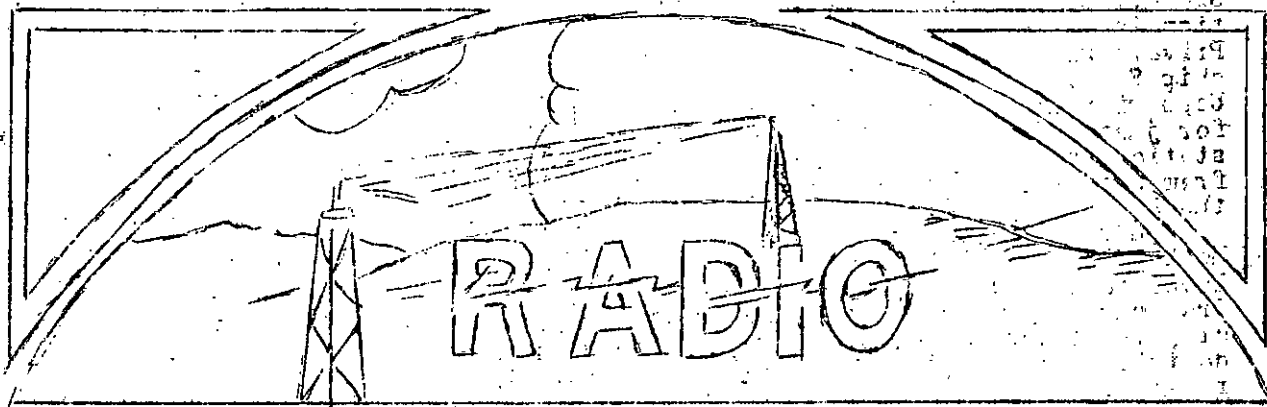
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The current "flu" epidemic has hit Barksdale Field, La., rather hard. In one month an entire six months' supply of dedications was used up by the post hospital, and emergency requisitions were prepared for more. In the meantime, each new patient is given lots of sympathy and good advice.

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During February, the Engineering Department of the San Antonio Air Depot overhauled a total of 21 airplanes and 71 engines and repaired 25 planes and 13 engines.

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Bureau of Air Commerce radio officials are rendering a service which is greatly appreciated by the flying personnel of the 41st Division Aviation, Felts Field, Spokane, Wash.

Seldom, if ever, are cross-country flights made any more from their home station without first making arrangements for communication contact throughout the flight, including Pxs to the home station on landings at foreign airports.

Much to the pleasure and comfort to the Division Aviation personnel, the airways radio officials seem anxious to provide the service, as evidenced by their requests that pilots in flight report their positions as often as 10-minute intervals, which is also proving to be splendid training in the operation of new radio equipment issued recently.

On flights between Spokane and Seattle, a distance of about 270 miles, pleasing results have been obtained several times. On leaving their station, pilots request of the airways radio officials that communication contact be maintained throughout the mission.

Ordinarily, four stations are worked during the flight, and these include Ephrata, Ellensburg and Seattle. The Seattle-Ellensburg beam crosses the Cascade Mountains, which are cleared safely at about 7,800 feet when instrument flying - all except Mt. Rainier, which towers about 14,000 feet and lies south of the on-course signal.

The longest continuous "under-the-hood" flight on record with the 41st Division Aviation was made recently by Captain Claude Owen, Operations Officer, when he flew from Spokane to Boeing Field, Seattle. On this flight the power of the new Air Corps radio equipment proved itself. On the return flight, when within about 55 miles of Spokane, the airways operator advised that the Seattle operator would like a call. Changing frequency, the Seattle operator contacted Captain Owen almost instantly, and in a clear tone a conversation was carried on.

Captain Owen witnessed no particular

difficulty on the instrument flight to Seattle other than to have the regular weather broadcast "blot out" the beam as he neared Boeing Field. He completed one 360 degree circle, coming back on the course. At 5,000 feet, directly over Boeing Field, there was no difficulty in determining the cone of silence.

Navigation flights between Spokane and Fort Lewis are to become almost daily occurrences with the arrival of good weather for the pilots. It is common for the pilots to fly to the coast in the afternoon, have dinner, and return at night on the beam.

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SCOTT FIELD RADIOMAN AIDS IN FLOOD WORK

On March 20th, when Williamsport, Pa., was flooded by the swollen Susquehanna River and was deprived of the electric power necessary to operate its telephone and telegraph lines and its radio broadcast station WRAX, there was but one means left by which communication with the outside world could be accomplished. That sole means, amateur short wave radio station W8LWY, became active by means of electric current from a series of batteries and sent forth important messages concerning the exact state of the flood as well as messages to the relatives and friends of various Williamsport people.

But William C. Szendry, of 653 Maple Street, Williamsport, Pa., the operator of W8LWY, was unable to send messages direct to the particular city he was anxious to contact - New York City, only 150 miles away - because of the peculiar "skip distance" of short wave radio. Szendry, however, knowing the reason for this peculiarity and knowing also that his station could establish communication with any other amateurs located at least 700 miles away in any direction, sat at his set and spoke into his microphone. He gave his station letters and his location and then asked that whoever heard him should contact his station at once. His only fear was that there was no amateur listening at that time. Almost at once

Szendry heard someone calling his station in answer to his appeal for aid. Private Frank W. Brashears, 9th Airship Squadron, Scott Field, Ill., had been listening in at his station, W9CJH, for just such an appeal. Brashear's station, being located about 700 miles from Szendry, was in the live belt of the 20 meter wave band.

Szendry explained to Brashears that he had some important messages to be relayed to New York City, and he asked Brashears to contact some amateur in that city if he could. Brashears agreed to do this. Within a few minutes Brashears received a response to his call from Jerry Farrell, of Compton Plains, New Jersey, only 18 miles from New York City. Farrell agreed to act as the third party of the relay team and to phone any and all messages to New York City. Also, Farrell agreed to stand by to receive messages from New York City destined for Williamsport.

It was about 10:30 a.m. when Szendry first called for aid, and it was just 11:15 a.m. when the first two messages had been relayed the 1500 miles or so from Williamsport to Scott Field and then to Compton Plains and New York City. Three radio stations and a telephone line were required to get messages the 150 miles to New York City! But it was worth it, for many important messages were relayed to the world concerning the true condition of Williamsport, and many other messages were relayed which relieved the minds of anxious people.

By three o'clock, the flood water had receded about 15 feet from its crest, enough to permit the resumption of the regular telegraph line at Williamsport. But the work that those three radio amateurs did during those four hours cannot be estimated in mere dollars and cents, and nothing but gratitude can repay Szendry, Brashears and Farrell for the work they did in time of an emergency.

Brashears' station is said to be one of the most powerful in the United States on the 20-meter band, for it contacts Panama on a regular schedule and often brings in New Zealand and Australia - a rare thing.

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PROMOTION OF AIR CORPS OFFICERS

Brigadier-Generals Augustine W. Robins and Henry H. Arnold, Air Corps, the former on duty as Chief of the Materiel Division, Wright Field, and the latter on duty in the Office of the Chief of the Air Corps in Washington, D.C., whose regular rank on the lineal list was that of Lieut.-Colonel, were promoted to the rank of Colonel, effective March 1, 1936.

AIR OPERATIONS IN EAST AFRICAN CONFLICT

The following extract from an article dealing with the employment of modern arms in the Battle of Canale Doria, and which appeared in a recent issue of the Italian semi-official paper "Le Forze Armate," is quoted:

"Aviation carried out strategical reconnaissance at long distances and signalled continually by radio to General Headquarters the size and location of enemy groups, thus checking and integrating information gathered by the Intelligence Service from other sources; it also prepared the attack, disorganizing the enemy with very efficient bombardment of sensitive points; participated in the attack with pursuit planes, machine guns and bombs against ground troops; it signalled the directions taken by the enemy when withdrawing and harassed the retreat by means of repeated bombardment; finally it insured communication and liaison between the different advancing columns. In spite of the difficulties of the terrain, aviation efficiently cooperated toward victory, fully demonstrating its possibilities. It confirmed the fact that it is a very valid support for ground forces which, however, must carry out the actual battle, over every kind of terrain, from the beginning to the end."

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THE SAN FRANCISCO BAY EXPOSITION

Cities around San Francisco Bay will celebrate during the year 1939 an international exposition to mark the completion of the world's two largest bridges across the San Francisco Bay. This will be the first international celebration to be held in San Francisco Bay Region since 1915, when the Panama Pacific International Exposition marked the completion of the Panama Canal. Sponsoring the Exposition will be the San Francisco Metropolitan area cities, including San Francisco, Oakland, Alameda, Berkeley, Albany, San Leandro, Hayward, Sausalito, San Rafael, Richmond, San Jose, Palo Alto, Redwood City, San Mateo, Burlingame and others.

The exposition will open February 18, 1939, and continue for 288 days to December 2, 1939.

The site of the exposition lies in the center of San Francisco Bay, midway between San Francisco and Oakland, on shoal land located just north of an adjoining Yerba Buena Island. It is in the geographical center of a population area of 1,785,000.

During the year 1936, an area of 385 acres of this shoal land will be filled in to provide the site of the Exposition, and later the land will be used for a modern municipal airport and seaplane base, owned and operated by the City and County of San Francisco.

DEATH OF CAPTAIN SAMUEL P. MILLS, AIR CORPS

The death of Captain Samuel P. Mills, Air Corps, as the result of an airplane accident at Fort Slocum, New York, on Sunday afternoon, March 22nd, was a great shock to all who knew this genial and likeable officer, whose pleasing personality, fine character, good nature, big-heartedness and propensity for going out of his way to perform acts of kindness for his fellow men, made for him fast friends wherever he went. His untimely death cast a pall of gloom and sorrow throughout the Air Corps, and particularly in the Office of the Chief of the Air Corps where he had been on duty for the past three years. It is natural that we should feel more keenly the loss of a friend with whom we had been closely associated for a period of years.

Captain Mills, who was on duty in the Information Division, left Bolling Field, D.C., on Friday, March 20th, to fly Representative Tobey, of New Hampshire, to Boston, on orders of the Chief of the Air Corps. The trip was occasioned by the flood emergency in the New England area.

According to press reports, Captain Mills, on his return trip from Boston on Sunday, encountered high winds when reaching the vicinity of New Rochelle, New York. It was stated that the plane, its motor faltering, shuttled back and forth above New Rochelle for half an hour as though the pilot were attempting to overcome motor trouble and land. A 60-mile gale swept the metropolitan area. Swooping down toward the Fort Slocum parade ground, the airplane struck a corner of the recreation center building on that post with one wing then overturned and plunged to the ground in a mass of tangled wreckage.

Captain Mills was a pilot of exceptional ability, and aviation was his life work as well as his hobby. During his career in the Air Corps he, like all other pilots, had his share of "close shaves," but he invariably stuck to his ship and surmounted the difficulty. Press reports state that, although he carried his parachute, it was not strapped to him. He probably unfastened it to work with the motor. Indications are that he deliberately decided upon an emergency landing upon the Fort Slocum parade ground.

In the field of aviation, Captain Mills was, in truth, an old-timer. Even before going to college, and as early as 1910, he had practical experience with airplanes. In 1911, he entered the University of Vermont, and during his summer vacation periods, and until he graduated in 1915, with a B.S. degree in Mechanical Engineering, he affiliated himself with the exhibition fliers of those early aviation days,

C.C. Bonnette, C.F. Niles, Eugene Ely and George A. Gray. His work with these daring pioneers in those days was that of aviation mechanic, but he also received a limited amount of flying instruction.

Captain Mills was born in South Ryegate, Vermont, July 9, 1893. After attending the grammar school in that city for seven years, and the St. Johnsbury Academy for two years, his keen enthusiasm for aviation prompted him to take up a mechanical engineering course. Following his graduation from the University of Vermont, he took a position as Assistant Principal of the graded and high school of Newport, Vermont, which he held from September, 1915, to March, 1917. He was then Principal of these two schools to July, 1917, when he accepted a position as Assistant Instructor at the Massachusetts Institute of Technology, Cambridge, Mass.

On September 29, 1917, he enlisted in the Aviation Section, Signal Corps, as a Private, 1st Class. The war emergency led to the establishment of a School of Military Aeronautics at the Massachusetts Institute of Technology, among other prominent universities of this country, and Captain Mills remained at this school in the capacity of Instructor in aviation engines. He was promoted to the grade of Sergeant, August 10, 1918, and the exceptional performance of his duties as Instructor led to his appointment, on November 2, 1918, as a second lieutenant in the Air Service.

The School of Military Aeronautics at the Massachusetts Institute of Technology having been discontinued on October 1, 1918, Captain Mills was transferred to the School of Military Aeronautics at Princeton University. Upon being commissioned, he was assigned to duty at Taylor Field, Montgomery, Ala., in the Engineering Department. Later, upon the completion of his flying training, he received the rating of Reserve Military Aviator and was assigned as Officer in Charge of Flying at Taylor Field. In May, 1920, he was transferred to Ellington Field, Houston, Texas, where he was assigned as Chief Engineer and Operations Officer.

Always eager to advance his professional knowledge, Captain Mills sought permission to take a post graduate course in Aeronautical Engineering at the Massachusetts Institute of Technology. This was granted, and he completed this one-year's course in June, 1921.

Still imbued with a desire for more knowledge, Captain Mills' next station was at McCook Field, Dayton, Ohio, where he pursued the one-year course at the Air Service Engineering School, graduating on August 15, 1922. While pursuing his studies, he also acted as Secretary of the Engineering School and as Project Engineer for Thomas-Morse airplanes. He continued to serve as Secretary of the Engineering

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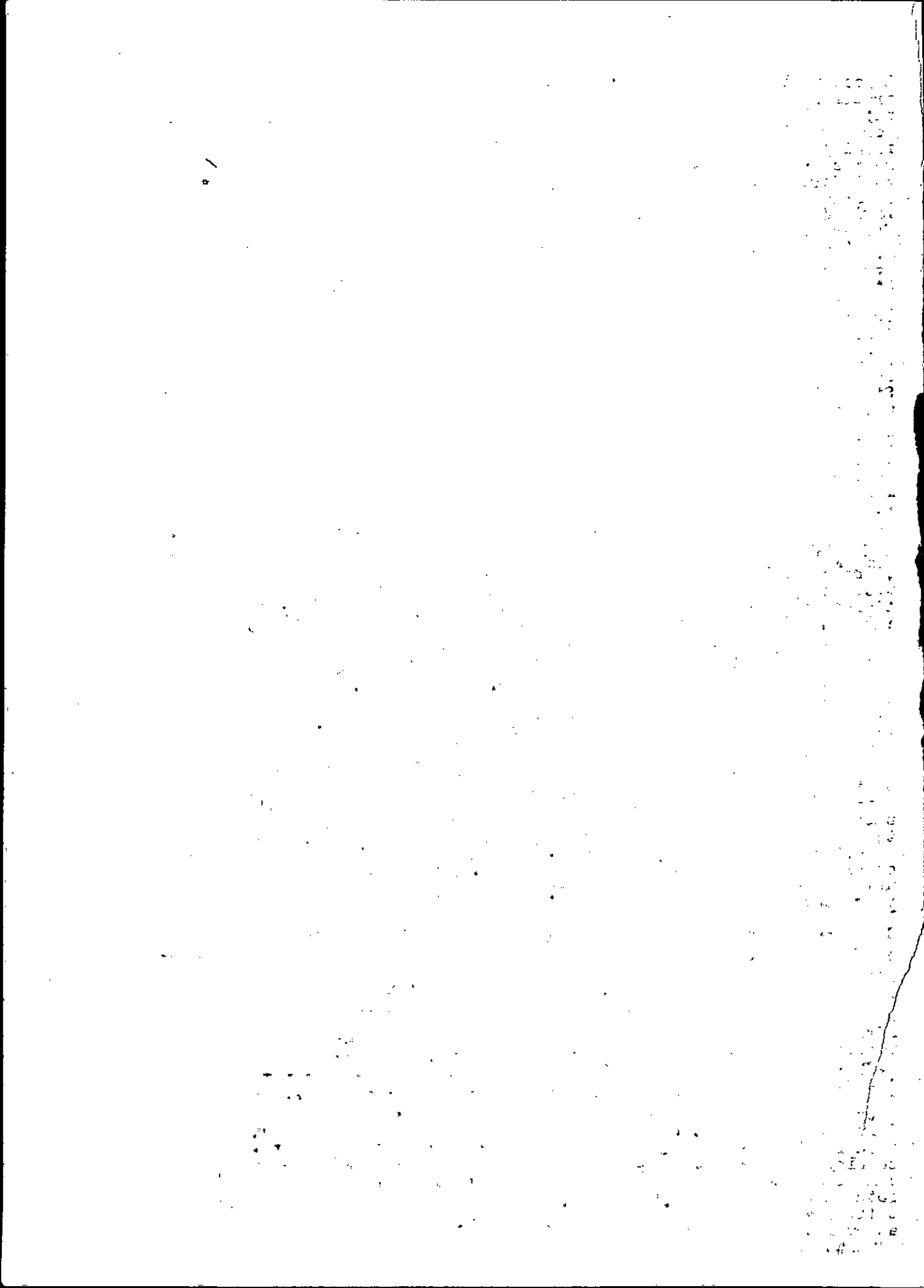
IN MEMORIAM



1893 CAPTAIN SAMUEL P. MILLS, AIR CORPS 1936

B.S. University of Vermont 1915
Aero.Engineering - N.Y. U. 1932

An ardent flying enthusiast eagerly embracing every opportunity to advance the cause of aviation. A splendid flyer and a convincing speaker on the subject nearest to his heart. We regret the circumstances which occasioned this acknowledgement of the lasting debt of gratitude which aviation owes to him.



School until June 30, 1924, when he was transferred to duty in the Philippines, with station at Camp Nichols, where he served as Adjutant in addition to performing other duties. On June 5, 1926, he was transferred to Kindley Field, Fort Mills, P.I., and assigned to duty as Armament, Parachute and Assistant Engineer Officer of the 2nd Observation Squadron.

While in the Philippines, Captain Mills was a frequent contributor to the Air Corps News Letter, and these contributions, descriptive of conditions and service in the Islands, were extremely interesting.

His tour of duty in the Philippines extended one year, at his own request, Captain Mills returned to the United States in June, 1927, and he was once more assigned to McCook Field, this time for duty in the Power Plant Branch Laboratory of the Materiel Division. This Air Corps activity was transferred to the new Wright Field the following month. In February, 1929, he was assigned as Chief of the Technical Data Branch of the Materiel Division, and he functioned in this capacity until November 6, 1930. While in charge of the Technical Data Branch, Captain Mills wrote many articles on aviation in addition to delivering lectures at frequent intervals in Dayton and nearby cities. As a matter of fact, throughout his career as an Air Corps officer, Captain Mills' outstanding ability as a lecturer and writer on aviation subjects led to many calls for his services from engineering societies and other organizations.

Anxious to preach the gospel of aviation to college students, Captain Mills' next assignment was at the New York University as Director of the R.O.T.C. unit thereat, and he endeared himself to the students through his willingness at all times to give them the benefit of his knowledge and experience. One unique feat he performed during his two-year stay at New York University was to land an observation plane in Van Courtlandt Park, two miles from the New York University campus, after a flight from Bolling Field. The Air Corps Unit of the University carefully disassembled the airplane at its resting place near the goal posts of Van Courtlandt Park and then carefully towed the fuselage to the New York University camps. After considerable effort, the disassembled airplane was moved into the laboratory building of the University, and then the enthusiastic students received much valuable instruction in rigging, assembling and disassembling a modern military airplane. Sometime later, on the coldest March 15th on record, the aviation class mobilized again at Van Courtlandt Park, assembled, rigged and inspected the Douglas plane, following which Captain

Mills took off without incident, flew to Mitchel Field for gasoline and oil, and then proceeded to the Middletown Air Depot. The engine, due to valve adjustment and other work, functioned very smoothly and showed 30 additional r.p.m.'s. Its flying qualities and balance were most satisfactory.

Also studying while working with the students, Captain Mills received the degree of Aeronautical Engineer from New York University and much praise from its officials for the outstanding services he performed there.

Detailed in the fall of 1932 as a student at the Air Corps Tactical School at Maxwell Field, Ala., Captain Mills graduated therefrom in June, 1933, and was then assigned to duty in the Inspection Division, Office of the Chief of the Air Corps, Washington. In July, 1935, he was transferred to the Information Division.

Those responsible for the publication of the Air Corps News Letter will sadly miss "Sammy," as he was affectionately called, for he was always one of its staunchest advocates, and his assistance and advice, coupled with his frequent contributions to its columns, will be greatly missed.

Our heartfelt sympathy goes out to Mrs. Mills and her two children, Samuel P., Jr., 10; and Jean, 7 years of age. The loss of a loving husband and father, we know, is something that is extremely difficult to bear, and nothing that we can say here can adequately console them in their grief.

The remains of the deceased officer were laid at rest in Arlington National Cemetery on the morning of March 25th, services being held at the Fort Myers, Va., Chapel. The honorary pallbearers were Captains David S. Seaton, Lowell H. Smith, Alfred W. Marriner, Edward V. Harbeck, Jr., James C. Cluck and Mervin E. Gross, Air Corps. All the officers of the Office, Chief of the Air Corps, and many others from as far as Langley Field attended the funeral.

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CAPTAIN HEISEN DIES AFTER LONG ILLNESS

Captain Horace N. Heisen, Air Corps, a veteran of the World War, an expert pilot and a most capable all-around officer, died on March 23rd at the Letterman General Hospital, San Francisco, Calif., after a long illness.

Born February 9, 1893, at Oakland, Calif., Captain Heisen attended the grade schools and high school in that city, the University of California, Berkeley, Calif., for two years, and the Hastings College of Law for three years, receiving the degree of Bachelor of Laws. While at college he was an outstanding athlete and excelled in all the major sports, being particularly noted as a baseball pitcher. For two years he practiced law, and during the war

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he enlisted in the Aviation Section, Signal Corps, June 12, 1917, and was assigned for his ground school instruction at the School of Military Aeronautics, University of California. He received his flying training at Rockwell Field, San Diego, Calif., and was rated Reserve Military Aviator, October 19, 1917. He accepted a commission as 1st Lieutenant, Aviation Section, Signal Corps, January 1, 1918, at which time he was on temporary duty at Garden City, Long Island, N.Y., preparatory to sailing for duty overseas. He sailed for England with the 50th Aero Squadron, and after a very brief stay in that country proceeded to France where, on February 22, 1918, he was assigned to the Third Aviation Instruction Center. On March 21, 1918, he was assigned to duty with Flight B, 99th Aero Squadron, and he served with this organization on the front lines until August 12, 1918.

After serving for several weeks with the 161st Aero Squadron, Captain Heisen was assigned, on September 13, 1918, as commanding officer of the 278th Aero Squadron, and he served with this organization to July 22, 1919.

On June 26, 1918, while on a reconnaissance flight, 7 miles over the enemy lines, he was shot down by anti-aircraft artillery fire, but due to his skillful piloting he successfully landed his plane one half kilometer behind the Allied lines.

Efficient performance of his duties earned for him a promotion to Captain on October 3, 1918.

Upon his return to the United States, Captain Heisen reported for duty in the Office of the Chief of Air Service, and he was assigned to the Liquidation Division. He was honorably discharged from the service, at his own request, November 10, 1919. On March 15, 1920, he was appointed a Major in the Aviation Section, Signal Reserve Corps.

Appointed a Captain in the Air Service, Regular Army, September 16, 1920, he was assigned to duty in the Administrative Group, Office of the Chief of Air Service, served there for several weeks, then from October 4 to November 5, 1920, as Commanding Officer of the 99th Squadron, Bolling Field, D.C., and returned to the Office of the Chief of Air Service for duty in the Training and Operations Group.

On September 1, 1921, Captain Heisen was transferred to Langley Field, Va., for duty as student at the Air Corps Tactical School. Following his graduation in June, 1922, he remained at Langley Field in the capacity of instructor, performing also the duty of Commanding Officer of the Tactical School detachment for about 3½ years, and that of Assistant and Wing Operations Officer for 14 months.

After being on duty for two years, from March 20, 1926, to March 14, 1928, as Commanding Officer of the Boston Airport, Captain Heisen was transferred to Fort Crockett, Texas, where from March 18, 1928, to September 10, 1929, he commanded the 90th Attack Squadron, 3rd Attack Group. During the next two years he served a tour of duty in the Hawaiian Department, being Operations and Athletic Officer of the 72nd Bombardment Squadron for 9 months, Commanding Officer of the 72nd for ten months, and Executive Officer of the 18th Pursuit Group for four months.

Rockwell Field, San Diego, Calif., being his next station assignment, and where he served from June 21, 1932, to October 21, 1933, Captain Heisen commanded the 32nd Bombardment Squadron for 10 months, and later performed successively the duties of Post Adjutant, Post Executive and Intelligence Officer, Commander and Executive officer, Station Complement While on duty as Executive Officer, Captain Heisen held the temporary rank of Major and, while Station Complement Commander, the temporary rank of Lieutenant-Colonel.

Captain Heisen was transferred to Moffett Field, Sunnyvale, Calif., on October 25, 1935, and was on duty there as Station Complement Commander for three months, when his physical condition became so grave as to necessitate his being sent to the Letterman General Hospital.

Captain Heisen is survived by his widow and two daughters, one ten and the other 9 years of age.

The heartfelt sympathy of the Air Corps is extended to the bereaved family.

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FAST GOING FOR A B-6 AIRPLANE

Major Harvey H. Holland, Air Corps, stationed at Langley Field, Va., piloting a B-6 Bombardment plane, and accompanied by one Flying Cadet and three noncommissioned officers, recently made a training flight to Kelly Field, Texas. He accomplished the return flight to Langley Field in an elapsed time of 18½ hours, which is somewhat of a record considering the type of airplane he was flying and the fact that he made stops at Barksdale Field, La.; Maxwell Field, Ala.; Atlanta, Ga., and Fort Bragg, N.C. The journey from Atlanta to Langley Field was made at night, and the pilot had the benefit of a lighted airway only from that city to Spartanburg, S.C., or about one-fifth of the distance.

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Captain George W. Goddard, Air Corps, Instructor in Aerial Photography at the Air Corps Technical School, Chanute Field, Ill., is under orders for duty at Wright Field upon the termination of the present course at the Photographic School.

THE FLOOD IN THE NEW ENGLAND AREA
By the Boston Airport Correspondent

The recent flood catastrophe, which has stricken the New England States and made thousands homeless, was instrumental in our officers being sent on reconnaissance missions over the inundated areas throughout Massachusetts, the Connecticut Valley, Northern and Southern New Hampshire.

Captain Richards and Private Marsh commented on a flight over this area in the following manner:

A 275-mile flight was made on the morning of March 20th, during the height of flood conditions. Leaving the Boston Airport, they flew over Maynard and Concord, Mass., and thence to Clinton, where the turbulent flow of water of the Wachussetts Dam in the Nashua River caused Fitchburg's area to be badly submerged. All factories were forced to close. Winchendon was next observed, where a large ice jam was seen. At Keene, N.H., a five-mile area covering the south and west portions of the city was under water. Brattleboro, Vermont, was next observed. Here the Connecticut River started its mighty surge downward through the Connecticut Valley, overflowing the banks, covering fertile farmlands with ice, silt and mud. Many bridges, railroads and highways were completely awash. Scores of bridges were demolished by the impact of waters racing down the river at unnatural heights. Several sections were cut off and completely isolated.

At Turners Falls, an additional flow of water was headed from the East into the river at Northampton, where the map showed sharp turns in the river that could not be observed from the air, being completely obscured by a lake-like sheet of water. Holyoke at the time was in danger of isolation. A 35-mile flow of water from Chicopee Falls, joining the Connecticut River at Springfield, which flows through the middle of the city, submerged the business sections from a depth of four to five feet. The river from Springfield to Hartford was from one to six miles wide.

Hartford was severely hit, water being within a few blocks of the tall business buildings. Brainard Field was covered with water to such a depth that the yellow and black squares on the roofs of the hangars were the only objects visible. The aerial perspective of Hartford was changed to such a marked degree as to be almost unrecognizable. On the west side of the river, south of Hartford, only two objects were visible, a power house and the hangar roofs at Brainard Field. The return flight from Hartford to Boston was over a comparatively dry territory, being untouched to

any degree by the rampages of the flood.

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GERMAN NAVAL CADETS AT WHEELER FIELD

About 150 German Naval Cadets and 20 officers visited Wheeler Field on February 11th to witness an aerial review conducted in their honor. Neatly dressed, in formal white uniforms, the German visitors, all members of a training cruise aboard the Cruiser EMDEN, transformed the usual business-like atmosphere of the field into something closely resembling Annapolis on Commencement Day.

Swarming over lawns kept velvet-green by the somewhat reluctant efforts of afternoon fatigue squads and an ingenious sprinkling device mounted on wheels, the cadets first proceeded to inspect the planes and hangar of the 19th Pursuit Squadron. Hardly had the inspection begun when a sudden thunder in the heavens brought the cadets running from the hangar to witness a fairly lively exhibition of formation flying conducted by the 6th Pursuit Squadron. Long and loud was the applause when the planes suddenly shifted into a perfect "E" for EMDEN, as they brought the review to a close. An inspection of the planes and hangar of the 26th Attack Squadron closed the brief program for the visitors.

During the several days that the EMDEN remained at Honolulu, many Wheeler Field men were guests aboard, some of the German-speaking ones among them acting as guides and interpreters for the Cadets in their trips and visits on the Island.

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CHANGES OF STATION OF AIR CORPS OFFICERS

Upon the completion of his present course of instruction at the Army War College, Lieut.-Colonel Walter G. Kilner will proceed to the Hawaiian Department for duty.

Major George E. Stratemeyer, Instructor at the Command and General Staff School, Fort Leavenworth, Texas, goes to Hamilton Field, Calif., for duty with the GHQ Air Force, upon completion of the present course of instruction, as does Captain Clarence P. Talbot, student at this school. Another student, Captain Charles M. Cummings, goes to the Materiel Division, Wright Field, Ohio, for duty with the Aircraft Radio Laboratory.

First Lieut. William T. Hefley is slated for duty at the Materiel Division upon the completion of his course of instruction at the Air Corps Technical School.

Captain Charles McK. Robinson, upon the completion of the course at the Command and General Staff School, goes to Infantry School, Fort Benning, Ga., as instructor.

BILL TO ORGANIZE AIR RESERVE TRAINING CORPS

The Hon. John J. McSwain, Chairman of the Military Affairs Committee, House of Representatives, introduced on March 23rd a Bill, H.R. 11969, authorizing and directing the Secretary of War to organize the Air Reserve Training Corps, and to establish such rules and regulations as he shall deem fit and proper for carrying out the purposes and objects of this Act. The remaining sections of the bill are as follows:

Sec. 2. That all male citizens of the United States between the ages of seventeen years and twenty-four years, of sound physical condition, good character, and with a minimum education equivalent to at least a full high-school course, shall, after agreeing to serve in the Air Corps of the Army of the United States in the event of national emergency, be eligible to be listed as candidates of said Air Reserve Training Corps, and shall be entitled to receive such emblem or other designation to wear upon the clothing as the Secretary of War may prescribe while receiving such course of technical instruction and flying training as shall be prescribed by the Secretary of War.

Sec. 3. That the Secretary of War is authorized to use all proper means and agencies for the encouragement of said corps, by detailing either Regular Army Air Corps officers or Air Corps Reserve officers called to extended active duty, to inspect the instruction and training of said candidates in such private flying schools, colleges, and universities, and centers of air instruction and training as may be selected by the Secretary of War for that purpose, under such regulations as he shall prescribe.

Sec. 4. That the Secretary of War is further authorized to encourage the development of said corps by permitting the use of such Army air fields from time to time as may not conflict with the work of the Air Corps of the Army of the United States and further by permitting the use in ground instruction only of airplanes, aircraft generally, and equipment, belonging to the Air Corps of the Army of the United States, if and when, in the judgment of the Secretary of War, such use is wise and proper in promoting the technical training of said corps.

Sec. 5. That upon the completion of such course of training as shall have been prescribed by the Secretary of War and upon the satisfactory passage of final examination and tests as may be prescribed for candidates of said Air Reserve Training Corps, the Secretary of War shall issue certificates of appointment as members in the Air Reserve Training Corps, and said members shall then be entitled to wear at pleasure such insignia and/or other designations and decorations upon the clothing as the Secretary of War shall prescribe. These members of the Air Reserve Training Corps shall be kept listed as to their addresses, business occupations, and other pertinent facts, so that the same may be available on shortest notice for service in the national defense in the event of a national emergency.

Sec. 6. That the Secretary of War is author-

ized to give preference for appointment as flying cadets (heavier-than-air) and for detail to the Regular Army Air Corps Training Center for flying instruction of the most promising and desirable members in the Air Reserve Training Corps: Provided, That they also meet the mental, moral, physical, and educational qualifications prescribed by the Secretary of War for appointment of flying cadets of the Air Corps, Army of the United States. The limitations on the appointment of cadets under this Act will be only such as the limitation of vacancies under existing laws shall dictate.

Sec. 7. Such laws or parts of laws as may be inconsistent with the foregoing are repealed.

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FEDERAL INSPECTION OF 41st DIVISION AVIATION By Lieut. Ellsworth C. French

No one knows the answer yet, but Colonel Roy C. Kirtland of the Presidio of San Francisco, Ninth Corps Area Air Officer, seemed pleased after he had completed the annual Federal inspection of the 41st Division Aviation, Felts Field, Spokane, on Sunday, March 8th.

The organization was not entirely new to Col. Kirtland, as he quartered with the Division Aviation during its two weeks of camp at Fort Lewis last year, when the 81st Division assembled for its first division camp since the World War.

Rainy weather compelled Colonel Kirtland to inspect the personnel in the Division hangar. In his inspection party was Major Robin A. Day, Commanding-Instructor of the organization; Capt. Claude Owen, Operations Officer, and Lieut. Harold Hansen, Adjutant.

The Colonel requested that all leather flying equipment be displayed on the hangar floor, and as he walked among it he remarked: "I like to see that the flying equipment is in good shape."

Colonel Kirtland was particularly interested in the new installation of earphones in helmets as designed by Captain John Walters, Flight Surgeon. After inspecting the helmets, Colonel Kirtland advised Lieut. Charles O. Holter that he would bring his helmet north the next time that he came and have the earphones installed under the new design.

Not a section of the Division Aviation escaped the inspection of the Colonel, who showed a keen interest in supplies and equipment. Flights in tactical problems were carried out, although not requested by Colonel Kirtland, who did display an interest in the preparations of the operations orders. Addressing the officers on property responsibility, he explained that "nothing I have found here prompts my remarks other than the extreme importance of property responsibility."

All phases of the National Air Defense Demonstration at Felts Field on May 29-31, 1936, were fully explained to Colonel Kirtland, who approved the idea. "I'm going to try and come back for the demonstration, and it is my purpose to be in camp again with your organization at Fort Lewis in June," he said upon his departure.

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Captains Douglas Johnston and Lawrence P. Hickey, Air Corps, were promoted to Major, with rank from March 1, 1936.

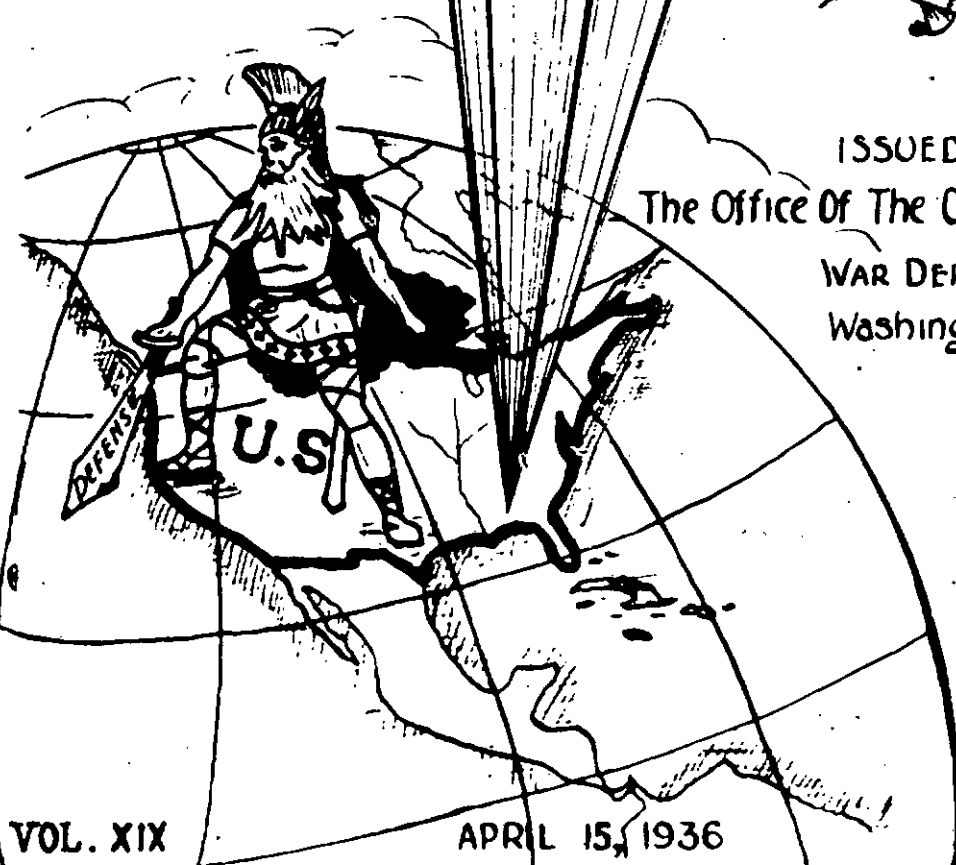
AIR CORPS NEWS LETTER

-SPECIAL-
AIR CORPS TACTICAL SCHOOL
EDITION

NEW STUDENT OFFICERS



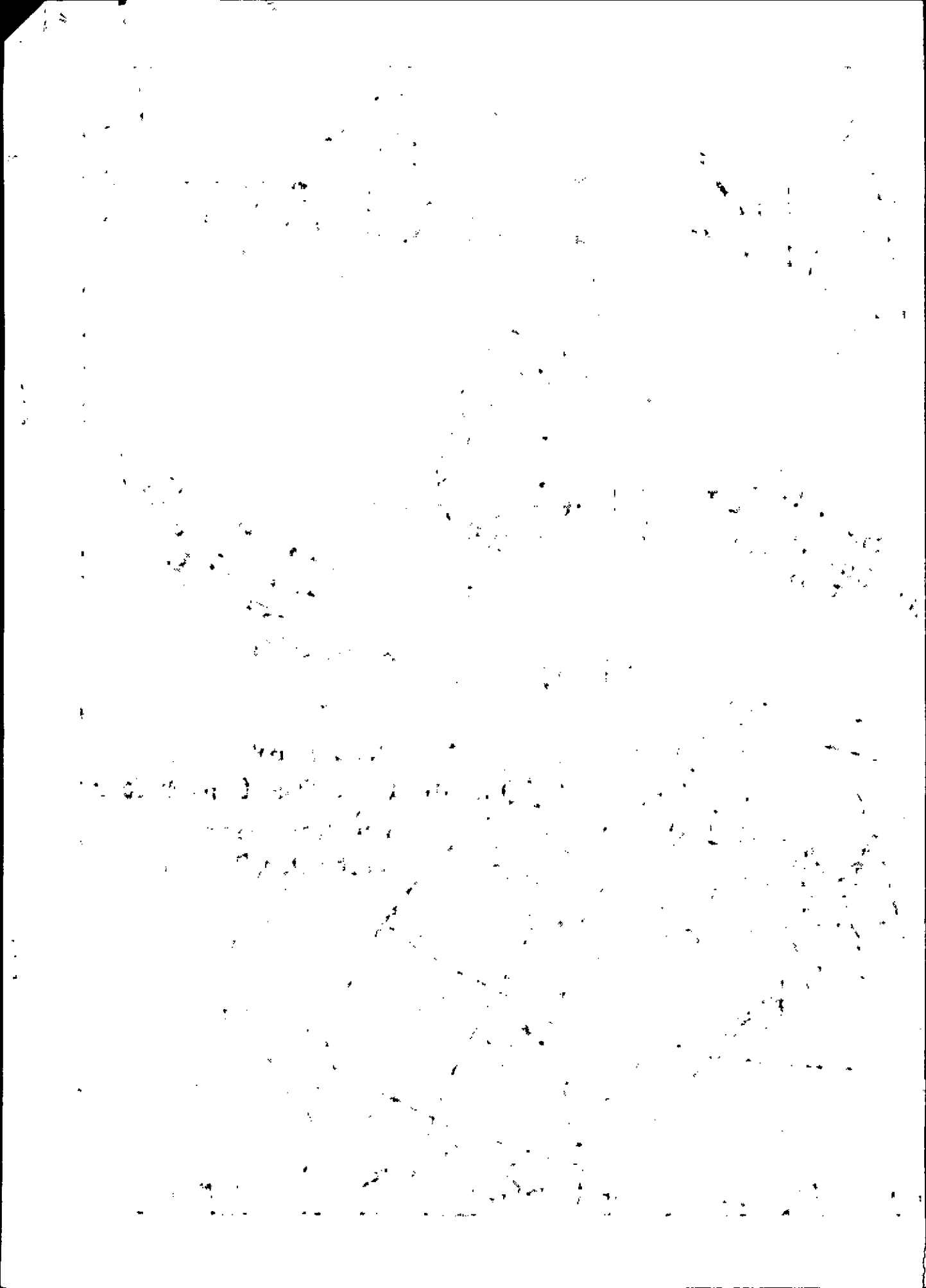
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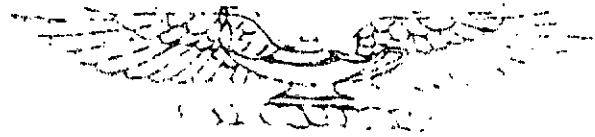


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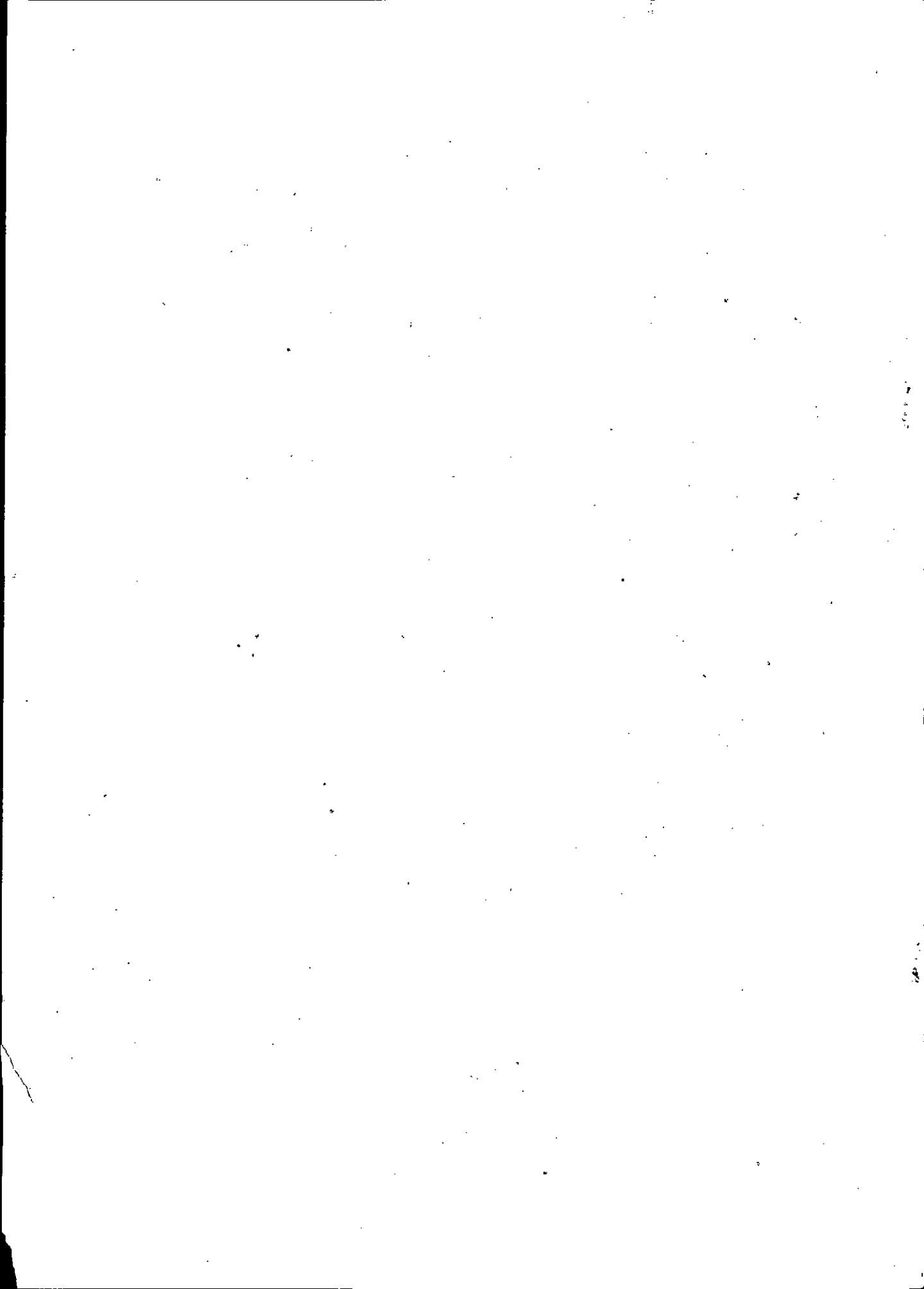
APRIL 15, 1936

No. 8





**COL. A.G. FISHER A.C.
COMMANDANT**



The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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FOREWARD ON MAXWELL FIELD

By Colonel A. G. Fisher, A.C., Commandant

IN February, 1910, Mr. Wilbur Wright arrived in Montgomery, Alabama, with the object in view of locating a site for the establishment of a flying field and training center for aviation in the South. A committee of the Commercial Club of Montgomery, predecessor of the present Chamber of Commerce, met with Mr. Wright, and a number of fields in the vicinity of Montgomery were inspected. The one selected by Mr. Wright, and subsequently used by him and his instructors in teaching the art of flying, is the site of the present Maxwell Field, home of the Air Corps Tactical School of the United States Army. Certainly, insofar as inspiration and tradition is concerned, there could be no fitter spot in this country for the location of a school, the mission of which is the education of officers in the technique, tactics, and strategy of Air Forces.

The Air Corps Tactical School was organized at Langley Field, Virginia, in 1920 under the name of the Air Service Field Officers School. Two years later, that designation was changed to the present one. The function of the school is to train officers for command and staff duties in all types of Air Force tactical units, as well as to acquaint officers generally, whether their duties be primarily connected with technical functions, supply, or administration, with the vast correlated problems which are involved in the planning, administration, supply and operation of an Air Force. Surely everyone must realize that the ability of an Air Force to carry out its mission in time of war with maximum efficiency depends almost entirely upon the planning and training that is done in time of peace. It is essential, therefore, that all officers directly connected with any phase of this peace-time planning be acquainted with the problems which must be met by the Air Force in time of war. The Air Corps Tactical School, whose faculty is made up of officers especially selected for their experience, education and knowledge of air warfare and the strategy and character of air power, actually performs the function of a clearing

house where ideas of tactics and technique may be evaluated by faculty members with a view to their possible inclusion in the curriculum of instruction. Here, also, consideration and study are given to the potentialities of air power and appropriate lectures given to the student body on this subject.

No officer of the Army, whether he be in the Air Corps or in any of the other branches, could fail to improve vastly his conception of the influence of air power on the conduct of war by taking the course of instruction at the Air Corps Tactical School.

The instruction here is not, by any means, limited to air subjects. A comparatively thorough course is given, by instructors detailed from the ground arms, in all phases of ground warfare, in the tactics and employment of Infantry, Cavalry, Field Artillery, Anti-aircraft Defense, Logistics, and combined arms, as well as in naval operations.

Maxwell Field is also the home of the Air Corps Board, whose duties consist of the study of major problems and projects which may be, from time to time, referred to it by the Chief of the Air Corps, or which may be originated by the Board itself.

It is contemplated establishing here a composite group which will be composed of one squadron of each of the several classes of military aviation. The principal purpose of this group will be to service-test new conceptions of tactics and technique. In other words, it will be in the nature of a laboratory in which new thoughts are tried out and new equipment tested before being sent out to the tactical organizations of the Air Corps throughout the United States and its foreign possessions.

Surely it should be the ambition of every Air Corps officer to take the course of instruction at the Air Corps Tactical School. Without question it will be a requirement, within the near future, that any officer selected for command and staff duty or any key position in the Air Corps, and any Air Corps officer selected for duty with the civilian components of our Army, must be a graduate of the Air Corps Tactical School.



THE Department of Air Tactics and Strategy is charged with instruction in the several classes of aviation - Attack, Bombardment, Observation and Pursuit - as well as in Air Force. The Air Force course is preceded by instruction in the several classes of aviation as well as in air logistics and certain essential technical subjects.

By the time the student has arrived at the point in the schedule where he can demonstrate his ability in the handling of air forces, his initial interest has been compelled to withstand the pressure of all this very essential preparatory work. If he has been able to sustain this interest with a proper amount of fortitude and has not been seriously trampled upon, bitten or otherwise disillusioned or disheartened by his equitatorial activities, he now braces himself for the sprint down the home stretch. If he is a perfectly normal student, he will also be subjected at this time to the vision that pictures him in the not too distant future proudly clutching his certificate of graduation, with the cheers, huzzas and applause of wives, sweethearts, classmates and, lastly, the superfluous faculty, ringing sweetly in his blushing ears.

The objectives of instruction in the employment of Air Forces should be of interest not only to prospective students, but also to the members of other classes who have long since left the portals of this institution, because of the more or less traditional policy which has each year required the consignment of all the previous year's course to the waste basket. This has occurred not because of a desire for additional work on the part of the various instructors, but primarily because of the rapid development in types of aircraft changing year by year the conception of the employment of Air Forces and the potentialities of Air Power. We cannot continue to promise such an unending variety of instruction in the future, however, because this righteous gesture, although in itself not a very arduous task, immediately brings to the fore the pressing problem of writing the new courses. This procedure has served to ruin completely the otherwise normal placid dispositions of several well known faculty members.

The entire course in air instruction carried on by this Department comprises some 286 hours of scheduled work on the part of the student. This consists of lectures, conferences, illustrative problems, and map problems. In addition, one complete week is devoted to studies by committees of not more than four students each on subjects that are closely

allied to the instruction given in the school. Although only a week is allotted for the preparation and presentation of the several committee reports, the studies are sent out to the committee in sufficient time to permit the assembly of the necessary material for research. The reading of the reports to the class by the committee members is followed by a general discussion and critique.

During the map maneuver which terminates the school year, the class is divided into several Red and Blue Air Force commands, each with an appropriate staff organization. A strategical situation involving the air defense of the United States is presented, and the various commands prepare the decisions, plans, orders and staff reports that are called for by the requirements issued during the week that play continues. Considerable enthusiasm for this form of instruction has been evidenced by the classes graduating within the last few years. As a matter of fact, play of the maneuver becomes, at times, sufficiently strenuous and aggressive on the part of both beligerents to make the lives of the unfortunate umpires exceedingly unhappy, if not actually precarious. The respective commands become engrossed in the annihilation of each other's forces.

The instruction given in this Department is subdivided under several different headings, each of which has a distinct scope and purpose. These subdivisions are not only the logical groupings of the subjects which are covered, but, in addition, constitute projects around which the future expansion of the courses are to be coordinated. The following is a brief summary of the subjects covered in the Department of Air Tactics and Strategy:

AIR FORCE.

Air Warfare. - The characteristics of air forces, elements of air strategy, air force offense and defense, air bases, organization and composition of air forces, and the influence of air power upon warfare.

Principles and Tactical Doctrine for Combat Aviation. - An introduction to the air tactics that are common to all combat aviation, including doctrines for air attack, air combat, and air observation.

Air Forces of the Army. - The functions of the Army and the Navy, organization, control, missions and principles of employment of the Air Forces of the Army.

Antiaircraft Defense. - Integrated systems of antiaircraft defense, involving the employment of Pursuit aviation, antiaircraft artillery and the measures for security and passive defense in the defense of the air base and other establishments.

Air Operations. - Doctrines of employment for combat aviation, plans and orders, and the employment of the Air Force in

typical strategical situations.

ATTACK AVIATION.

This course covers the function, organization, destructive agencies, materiel, methods of applying destructive and neutralizing agents and formations in detail. The tactics and technique of the Attack Group and lower units, both during day and night operations, are discussed and the principles covered are applied and illustrated.

BOMBARDMENT AVIATION

This course covers the function, organization, training, destructive agencies, materiel, methods of bombing and bombing accuracy, and formations in detail. The tactics and technique of the Bombardment Group and lower units, in daytime and at night, at high altitudes and at low, are discussed and the principles covered are applied and illustrated.

OBSERVATION AVIATION

This course covers the function, or-

ganization, equipment, technique and tactical employment of Air Force Observation, and the function, organization, equipment, technique and principles of employment of ground force observation aviation. The operations of both are applied and illustrated.

PURSUIT AVIATION

This course covers the functions, organization, training, weapons, equipment, and tactics and technique of Pursuit tactical units. Gunnery principles as they influence the tactics and technique of Pursuit are covered in some detail, and their practical application is illustrated. The coordination of Pursuit operations and tactics with the various ground agencies, as well as the organization, composition and use of an aircraft reporting net for Pursuit operations are fully covered and illustrated.

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FLYING OF THE STUDENTS OF THE AIR CORPS TACTICAL SCHOOL

By Major Lotha A. Smith, Air Corps.

This year's class at the Air Corps Tactical School, consisting of 70 officers, 61 of whom are heavier-than-air pilots, started flying on September 5th as one of the courses at this school. The object of the flying course this year at this school was:

Compliance with War Department Training Directive to illustrate as many of the theoretical principles as taught in the school as the limited and inadequate flying equipment at this school would permit.

The flying equipment consists of: 9 O-19, 6 A-3B, 6 B-4, 16 P-12, 3 SU (Navy), 3 PT type airplanes, one C-1 Transport and one BT instrument instructional plane.

In view of the fact that it was necessary to comply with the requirement for instrument flying, and that only one plane suitable for instrument instruction was available at this station, the O-19 airplanes were equipped with hoods in order that they might be used for instrument flying.

With the above objectives in view, the students were scheduled to perform appropriate missions with the dual purpose of illustrating the tactical employment of the various branches in the Air Corps, also to complete the requirements of the War Department for pilots and observers. Flying was restricted due to the fact that the planes mentioned above also had to take care of approximately 40 post officers and instructors in also meeting their War Department flying requirements.

Necessarily, student flying has priority on airplanes, and from the 5th of September to December 10th, 37 flying

periods for student flying were completed. During these periods every form of Air Corps flying was participated in, and the class average for pilots and observers was approximately 80 hours in the air. The above time included an average of 11 hours per student night flying, and 10 hours of instrument flying under the hood, besides illustrating tactical principles on the equipment that could be used for such at this post.

During the month of October, over 2500 hours were flown at this station and, with the limited number of aircraft available, it is felt that they were worked to practically the maximum capacity for sustained service.

Needless to say, the requirement to operate night and day demanded a great deal of cooperation by every one at this station, and indicates the high state of morale among the enlisted personnel.

Many of the students have much more flying time than indicated in the student average, due to the personal cross-countries which are open to all students on holidays and week-ends.

With the successful conclusion of the first half of the school year's flying, it is anticipated that all students at this school will more than satisfy the objectives as set for the student flying at the beginning of the year.

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Officers of the 2nd Infantry who arrived on April 1st at Selfridge Field, Mich., for temporary duty on contact training with Air Corps units for two weeks were Capts. Lewis S. Sorley, Jr., Robert W. Stika, 1st Lt. Carl E. Lundquist, from Fort Brady Mich.; 1st Lt. Samuel A. Daniel and 2d Lt. Harry W. Sweeting, Jr., of Fort Wayne, Mich.

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THE ACADEMIC DEPARTMENT OF THE AIR CORPS TACTICAL SCHOOL
By Lieut.-Colonel Herbert A. Dargue, Air Corps

THE reason for the existence of Maxwell Field is the Tactical School, and accordingly all activities of the post pyramid in the attainment of the best course of instruction that it is possible to conceive and that conditions will permit. The large class of seventy students is here to put into one short year, or rather nine months, just as much tactical instruction as can be absorbed.

The Academic Department of the School, the activities of which are carried on under the direct supervision of the Assistant Commandant in accord with the policies of the Chief of the Air Corps and of the Commandant, is divided into four main departments, - the Department of Air Tactics and Strategy, the Department of Command, Staff and Logistics, the Department of Flying, and the Department of Ground Tactics. The Extension Course work is handled in a separate section directly under the Assistant Commandant.

The heads of the departments are held responsible for the work carried out by the various sections in their respective departments and are given considerable latitude in their work. They must properly coordinate the instruction both in their own departments and with other departments.

Naturally, courses in air instruction predominate, but due to the great differences in qualifications of student officers, it is necessary to start the course with fundamental principles and with such elementary subjects as Combat Orders, Maps and Photographs, Solution of Problems, etc. In order to understand and properly coordinate with the work of the other branches of the Army, the Department of Ground Tactics, throughout the school year, carries on elementary instruction, gradually progressing to the handling of larger units such as the Division and the Corps.

It has always been the desire to have flying demonstrate by practical missions the work taught in the classroom, but due to the necessity of meeting War Department minimum requirements, complying with a War Department Training Directive and the lack of modern aircraft and even of sufficient numbers of any aircraft, the attainment of this objective is unfortunately in the lowest priority with the result that only the most elementary of practical missions, exemplifying the instruction in the School, are undertaken. Every opportunity is given the student officer to meet flying requirements.

The work in connection with the Extension Courses is a separate activity from

the instruction carried on in the school, although, as stated above, it is handled directly under the Assistant Commandant. It is coordinated with the various instructional sections in the school. The enormity of this work is appalling and the many thousands of copies of Extension Course texts that are produced each year places a heavy burden on the reproduction activity. It is one of the most important activities, since by means of it instruction in air subjects reaches all the other Arms, the National Guard and the Reserve.

A Book Department is convenient to the students, both for recreation and refreshment, between periods of instruction and for the purchase, at minimum prices, of additional maps, books and stationery. Other articles may also be purchased at considerably reduced prices.

The library in connection with the school is one of the best in the service. It is kept up-to-date with the latest books and publications and affords students as well as faculty an excellent opportunity for research. A library committee of instructors passes upon all publications secured.

The Reproduction Section prepares practically all the texts used in the school, the principal exception being the texts used in the Department of Ground Tactics. Mimeographs, rotoprint and blueprint work is carried on in increasing quantities each year. From fifteen to twenty men are constantly employed in this activity. Book binding is also accomplished here.

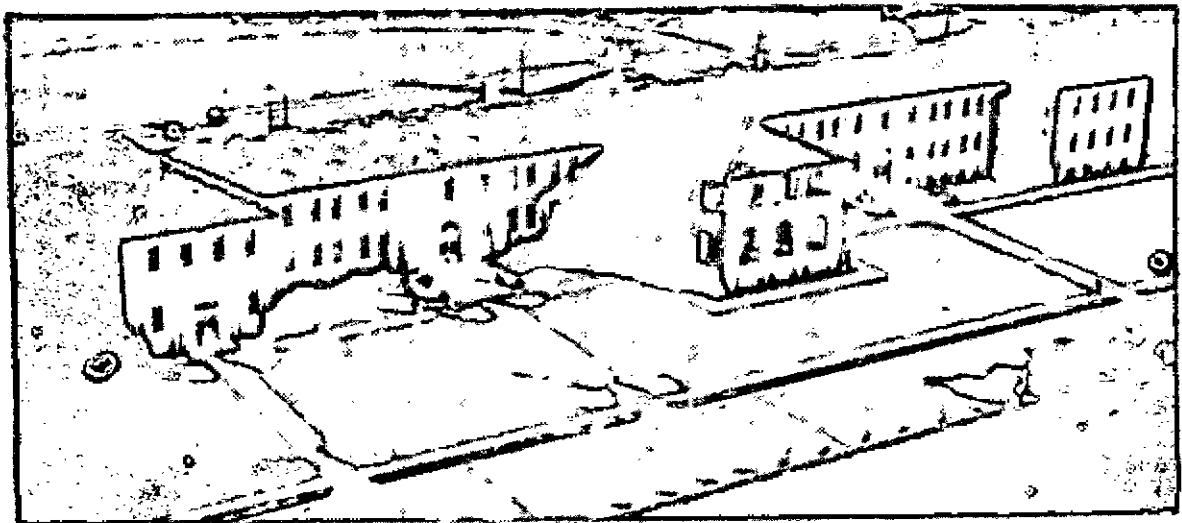
The Air Corps Tactical School is an AIR school and, although much time is devoted to the ground arms, equitation, demonstrations at Fort Benning, etc., the air instruction dominates the course from the first to the last day of each school year. It is not an easy course. It is kept up-to-date by correspondence and visits to other Service Schools, The Command and General Staff School, The Army War College and The Naval War College, and by the closest cooperation with tactical units. The officers comprising the faculty are a conscientious, hard-working group, and as each comes and goes, his tour of duty brings forth improvement in his particular subjects of instruction or some benefit to the school as a whole. It is regretted conditions throughout the service preclude the possibility of more officers attending this institution, as the product of the Air Corps Tactical School is recognized throughout our corps by the demand for graduates and their assignment to important command and staff duties.

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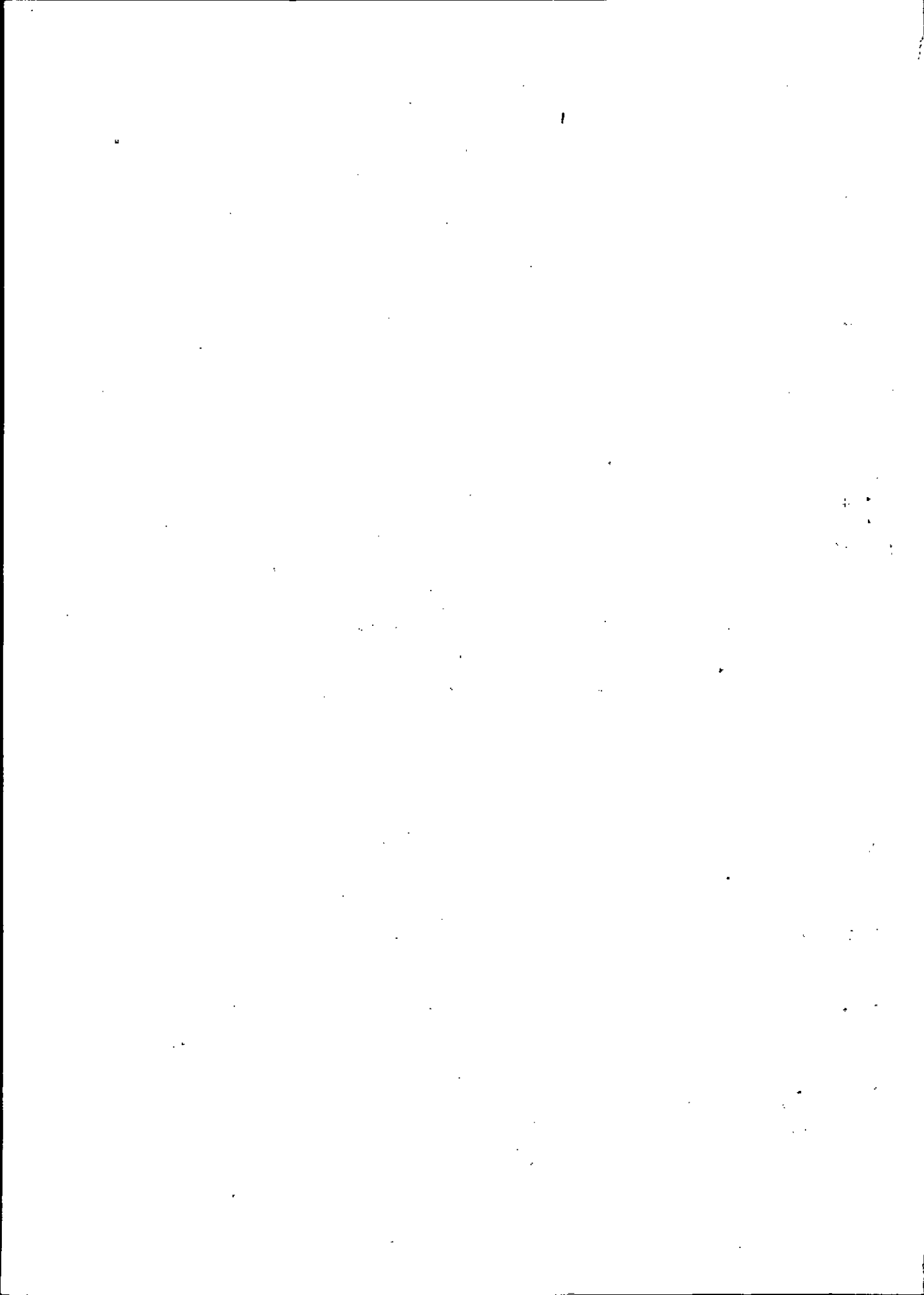




L.T.COL. HERBERT A. DARGUE A. G.
ASSISTANT COMMANDANT



AUSTIN HALL



EXTENSION COURSE SECTION OF THE AIR CORPS TACTICAL SCHOOL

By Major John I. Moore, Air Corps

UNDER the provisions of the National Defense Act, it is provided that the Army of the United States shall consist of three components: The Regular Army, the National Guard (while in the service of the United States), and the Organized Reserves, including the Officers' Reserve Corps and the Enlisted Reserve Corps.

The training of the civilian components of our army, particularly the Organized Reserves, presents the most difficult phase in the development of the Army of the United States. For the Regular Army we have a system of educational institutions to provide military knowledge in addition to the training received in field maneuvers and regular instruction in combat functions in garrison schools and drills. The National Guard receives its training and instruction through periodical drills and summer encampments and by extension course work.

The training and instruction of the Organized Reserves (including both officer and enlisted personnel) is not as simplified as the National Guard. Briefly, this instruction and training is divided into two general classes: first, that received when they are called to active duty; second, that received or acquired through individual interest and effort between periods of active duty. The Organized Reserve, although maintained as a permanent organization, charged with continuing functions on an inactive status for which limited provision is made, has no means of its own for providing a military education for its members or for the active practical training of its personnel. It is almost wholly dependent upon the Regular Army for this military education and training.

In 1922, in order to provide a means whereby the members of our vast citizen army could obtain a military education and still carry on with their normal work, the Army Extension Courses were established. These were an adaptation of the best of the civilian correspondence school methods to suit the needs of the military system. From a very small enrollment of 6,091 individuals in 1922, this enrollment had grown to 88,909 in 1935.

The primary mission of the Army Extension Courses is to provide:

- a. (1) For reserve officers an opportunity to undertake a systematic course of study covering the military knowledge qualifications essential for their arm or service, to prepare them as far as practicable for their war-time duties and to assist them to meet the requirements

for promotion.

- (2) For those seeking a commission in the Officers' Reserve Corps a means of meeting the military knowledge qualifications.
- (3) A basis for coordinated instruction in Reserve unit conferences and assemblies.

The secondary mission of the course is:

- b. (1) To provide individual instruction for:
 - (a) National Guard personnel, and
 - (b) Regular Army officers.
- (2) To furnish assistance in preparing for the resident courses at Army Service Schools.

From a national viewpoint and from the viewpoint of the individual, the advantages of pursuing the Army Extension Courses are obvious. The nation depends largely for its defense upon its citizen army. The quality of defense will be in direct proportion to the efficiency of the officers in that army. Efficiency can only be attained and maintained by constant study and training. The position and importance of the individual citizen soldier depend upon mastery of his duties and functions; his reassignment and promotion depend in great part upon his own efforts and study.

The extension course of each arm and service consists of subcourses arranged in a logical and progressive order. In general, each subcourse covers one of the military knowledge qualifications in which one must qualify for initial appointment or for promotion to the higher grades in the respective arm or service.

The subcourses of the arms and services are grouped into separately numbered series (10-1, 20-1, 30-1, etc.) according to the grade for which intended and, in general, are applicable as follows:

- 10 series subcourses for appointment in the grade of second lieutenant.
- 20 series subcourses for promotion to grade of first lieutenant.
- 30 series subcourses for promotion to grade of captain.
- 40 series subcourses for promotion to grade of major.
- 50 series subcourses for promotion to grade of lieutenant-colonel.
- 60 series subcourses for promotion to grade of colonel.

The extension courses of the arms and services parallel as far as practicable the instruction given in the resident courses at the Army Service Schools insofar as this instruction is applicable to the war-time duties of reserve officers and is adaptable to instruction by extension course methods.

The preparation of lesson material is carried on by the following agencies:

- (1) Chief of arms and services. - Sub-

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courses pertaining to a single arm or service are prepared under the direction of and approved by the chief of the arm or service concerned and submitted to the War Department.

- (2) Special War Department agencies.- Subcourses common to two or more arms and services are prepared by agencies specially designated by the War Department.
- (3) The School of Aviation Medicine.- The Extension Course of the School of Aviation Medicine is prepared under the supervision of and approved by the Commandant of the School of Aviation Medicine.
- (4) Command and General Staff School.- The Command and General Staff Extension Course and the Special Staff and Logistics Extension Course are prepared under the supervision of and approved by the Commandant, The Command and General Staff School.

All lesson material and special texts for the extension courses, except that of the extension courses of the Command and General Staff School and the School of Aviation Medicine, are reviewed, reproduced and distributed under the supervision of The Adjutant General.

The Air Corps Tactical School was designated by the Chief of the Air Corps in 1922 as the agency to prepare all Air Corps subcourses, and a separate section of the school was formed for this purpose. This section prepares and revises all subcourses for the Air Corps, except highly technical subjects, which are prepared by the Engineering School and the Air Corps Technical School. Twenty-four Air Corps subcourses and eighteen common subcourses are listed for Air Corps officers.

The subcourses as prepared by the Extension Course Section are as follows:

Theory of Flight H/A	Meteorology
Theory of Flight L/A	Camouflage
Aerial Navigation	Air Intelligence
Aerial Photography	Engineering
Antiaircraft Defense	Staff Duties
Air Operations	Logistics
The Air Force	Aerodynamics
Organization of the Air Corps	
Employment of the Air Corps	
Air Corps Communications	
Interpretation of Aerial Photographs	
Observation Aviation H/A	
Observation Aviation L/A	
Theory of Bombing	
Air Corps Combat Orders	
Employment of Balloon and Airship Units	
Pursuit-Bombardment-Attack Aviation	
Air Corps Supply System	

Subject to certain limitations, the following are eligible for enrollment in courses offered in their respective arms or services:

- (1) Personnel of the Officers' Reserve

Corps and the Enlisted Reserve Corps.

- (2) Personnel of the National Guard who may individually volunteer to take these courses in addition to their required National Guard duties, or who may be required to pursue an individual course of instruction under National Guard Regulations.

- (3) Officers of the Regular Army on detached duty of a nature such as to preclude their receiving instruction through other agencies.

- (4) Officers of the Regular Army serving with troops who are authorized by corps area commanders to enroll.

- (5) Warrant officers and enlisted men who seek Reserve commissions and who, in the opinion of the station and corps area commanders, are qualified to pursue the courses.

- (6) Qualified civilians seeking reserve commissions, if facilities for instruction are available.

- (7) C.M.T.C. trainees of Red, White and Blue courses.

Under an order issued by The Adjutant General, July 23, 1932, the Extension Courses of the Air Corps will be used for theoretical instruction in Air Corps garrison schools.

The following is an extract from that order:

- (1) Air Corps Extension Courses will be used as texts; examination questions and answers in pursuing garrison theoretical instruction. These courses will be given under the supervision of the Corps Area extension schools or such other agency as the Corps Area Commander may direct.

- (2) All Air Corps officers, below the grade of Lieut.-Col., who are assigned or attached to Regular Army tactical units and who are not graduates of the Army War College, the Command and General Staff School, or the Air Corps Tactical School, will pursue these courses as follows:

- (a) Second Lieutenants start with the A.C. extension courses, series 20-1.
- (b) 1st Lieutenants with less than 10 years' service to start with the A.C. extension courses, series 20-12 A.C. Combat orders.
- (c) All officers with over 10 years' service to start with A.C. extension courses, series 30; upon completion of series 30, these officers to take series 40.

- (3) Each officer will complete 100 hours of extension school work during the year. Commanding officers will arrange training schedules so as to assure each officer a reasonable amount of regular duty time during the day for work on extension courses.

Air Corps officers on duty at exempted stations may at their own discretion pursue appropriate extension courses.

Officers will be exempt from further instruction in subjects for which they hold duly authenticated certificates of proficiency.

The above order has been carried out in general at the majority of Air Corps stations. The main idea behind the issuance of this order was to provide as nearly as possible a uniform system of garrison school training for all Air Corps officers,

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as well as to serve as a preliminary course for officers who may come to take the resident courses at the Air Corps Tactical School.

Under normal procedure each subcourse is revised and brought up-to-date every three years or sooner if the subject matter should be obsolete due to changes in equipment, methods of operation or tactics.

All texts, lessons and map problems are carefully coordinated with the resident instructors at the school, and every effort is made to parallel the teachings of the school. All subcourses are forwarded through the Chief of the Air Corps for check and then to The Adjutant General for final check and distribution.

As of the School year 1935-1936, 2086 Air Corps personnel were enrolled for the subcourses and 1687 completed one or more subcourses for a total of 5562 subcourses, which involved a minimum of 83,833 hours of work.

The initial distribution of extension course material by The Adjutant General (for all arms and services) for the 1935-36 school year involved the following:

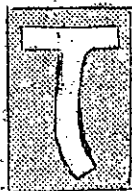
Pieces (lessons, solutions and texts)	4,187,255
Number of packages and envelopes wrapped and sealed	11,878
Number of mail bags sent out	1,452

From the above it can be readily seen that the Extension Courses are widely used and have an important place in the army educational system.

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THE AIR CORPS TACTICAL SCHOOL LIBRARY

By Miss Margaret Rippere, Librarian



The Library of the Air Corps Tactical School is, on the surface, the usual library connected with and serving a school of higher education.

The much used reference collection, the magazine and newspaper reading room, the small and scattered collection of general reading matter are all much the same. However, on close examination of the main collection, the uniqueness of the Library becomes evident. Here is a highly specialized collection of military and aeronautical books, not technical aeronautical, but tactical. So few good books are written on this new but fascinating subject that all books pertaining to the history and development of aviation as a combat arm must be purchased and thoroughly perused in order to extract every item of valuable information. The entire collection comprises about ten thousand volumes, of which the world war history and the military science sections are the largest.

The document collection contains about eight thousand assorted pamphlets and reports. The confidential reports from the various Military Attaches on all subjects of interest to our officers are of tremendous value for research and for keeping abreast of current military matters. They are also a source of greying hairs to the librarian in her efforts to make them available and easily accessible to the proper persons. Contained also in this collection are publications of the various departments of the National government and other agencies whose activities would affect the teachings or policies of the Air Corps.

The instructors, in the preparation of their lectures and texts, are the most constant users of the Library. The Air Corps Board, whose offices are in

the school building, also make valuable use of the material in the library in preparing their studies. While the students have very little time for much outside reading, they avail themselves of the opportunities they do have and derive much pleasure and benefit from the military and professional literature.

The Library is arranged and run according to customary procedure. The Dewey decimal system of classification is used throughout, modified and expanded in instances as necessitated by the special collection. The cataloging is done according to A.L.A. and Library of Congress rules, and the documents follow very closely the system worked out in the Military Intelligence Division of the War Department. The Secretary of the School is the Officer-in-Charge of the Library, with two trained civilian librarians, and one enlisted assistant under him.

The Library is located on the first floor in the south wing of the school building, and the equipment and arrangements are the latest ideas in up-to-date library planning.

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IMPROVEMENTS AT SCOTT FIELD, ILL.

WPA laborers have begun leveling off the irregularities in the landing area at Scott Field, Ill. At present they are cutting down a hump in the northwest portion thereof. This particular hump casts a long shadow when the night lights are used.

The WPA laborers have almost completed the dismantling of the old officers' garage and the landscaping project. The base constructed at the new location for the transformer is finished and awaiting the transfer of the electrical equipment.

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On March 30th, Capt. Leo H. Dawson was assigned as C.O., 57th Service Sqdn., Selfridge Field, with temporary rank of Major. V-6988, A.C.

DEPARTMENT OF GROUND TACTICS
By Lieut.-Colonel William N. Porter, C.W.S.

THE Department of Ground Tactics, Air Corps Tactical School, is comprised of sections under officers of the Infantry, Cavalry, Field Artillery, Coast Artillery, and Chemical Warfare Service, who conduct the courses in their respective specialties, and who together conduct a course in the Combined Arms. The amount of time devoted to instruction in ground subjects, while generous, is the minimum necessary to carrying out our mission.

The department exists primarily for the purpose of familiarizing officers of the Air Corps with the powers and limitations of the combatant ground troops, and with the technical and supply branches which serve them.

Many officers of the Air Corps do not have an opportunity to attend any service school but this. Their normal duties bring them but little into contact with the ground arms. A large percentage of the class comes to the school with only the vaguest ideas of ground tactics and ground units. It is the mission of the Department of Ground Tactics to remedy this deficiency.

The majority of the Air Corps officers detailed to Leavenworth each year go direct from the Air Corps Tactical School. The instruction in ground tactics here is so organized as to fit these students, as well as possible in the time allowed by the very crowded schedule, for the

course at the Command and General Staff School, and thus enable them to compete upon a more equitable basis with students from the other special service schools.

More important than any of the above functions, however, is the building up of an understanding of the methods and tactics which will enable the ground arms and the Air Corps to work together with greater unity of purpose. This is a line of thought which has been seriously neglected at many of the service schools, because of the difficulty of arriving at sound cooperative tactics with the data available.

We, the instructor personnel in this department, have been made to feel ourselves very much a part of the school; and, with students from the ground arms, make up a group who will take back to the "other arms" an understanding of Air Corps powers and limitations which will be of great value to air and ground forces alike.

In the modern army, an officer who has not as full an understanding of Air Corps tactics and capabilities as he has of those of the other arms, is poorly equipped for his professional career. To officers not in the Air Corps there is no question but this school is the most important of all the special service schools, with the single exception of the school of their own branch.

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THE AIR CORPS BOARD
By Captain Gordon Saville, Air Corps

IN furtherance of recommendations in November, 1934, of the Special War Department Committee, headed by the Hon. Newton D. Baker, the Air Corps Board was created and started its activities at Maxwell Field, Montgomery, Ala.

For several years the Air Corps Tactical School had maintained an Air Corps Board, consisting of the staff and faculty acting in addition to their other duties. The results of this arrangement having proven unsatisfactory, the Air Corps Board was organized as an independent activity under, and as a part of, the Office of the Chief of the Air Corps. Its membership consists of the Commandant and Assistant Commandant of the Tactical School, who are ex-officio members in addition to their other duties, and a number of regular working members who have no other duties.

The Air Corps Board is charged with the study of such subjects as may be referred to it by the Chief of the Air Corps, and of such subjects as it may

itself originate looking toward the improvement of the Air Corps.

In general, the Air Corps Board has been charged by the Chief of the Air Corps with the making of recommendations on matters which involve considerable study and research, rather than on matters involving only immediate decision as to policy.

At the present time the Air Corps Board consists of four working members, present or under orders, and two ex-officio members.

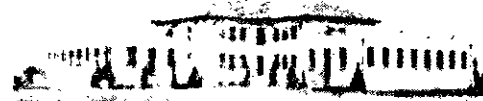
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Lieut.-Colonel Barton K. Young, Air Corps, is under orders to proceed to the Hawaiian Department, upon the completion of his present course of instruction at the Army War College, and to assume command of the 12th Composite Wing, Fort Shafter, T.H.

Colonel Fred H. Coleman (Lt.-Col.) is relieved as Commanding Officer, Fairfield Air Depot, Oct. 11, 1936, and from temporary rank, and is to proceed to Panama.

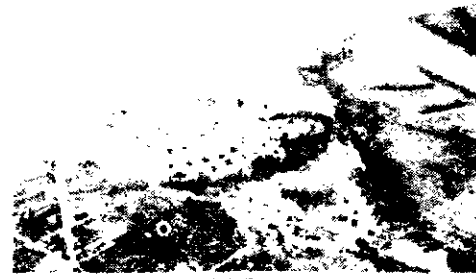
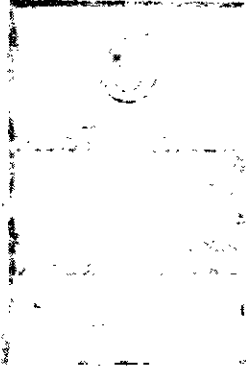


ACT.S.



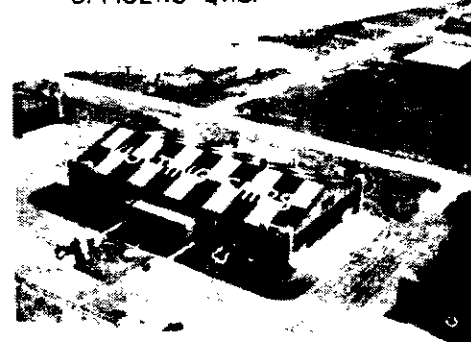
OPERATION - PARACHUTES

OFFICERS MESS



OFFICERS QRS.

MAXWELL FIELD ALA.



M.F. HANGER

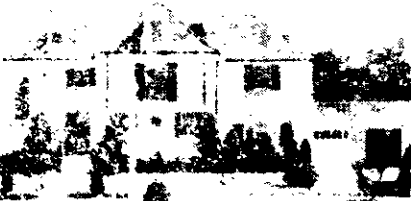
ACT.S. STUDENTS IN CLASS

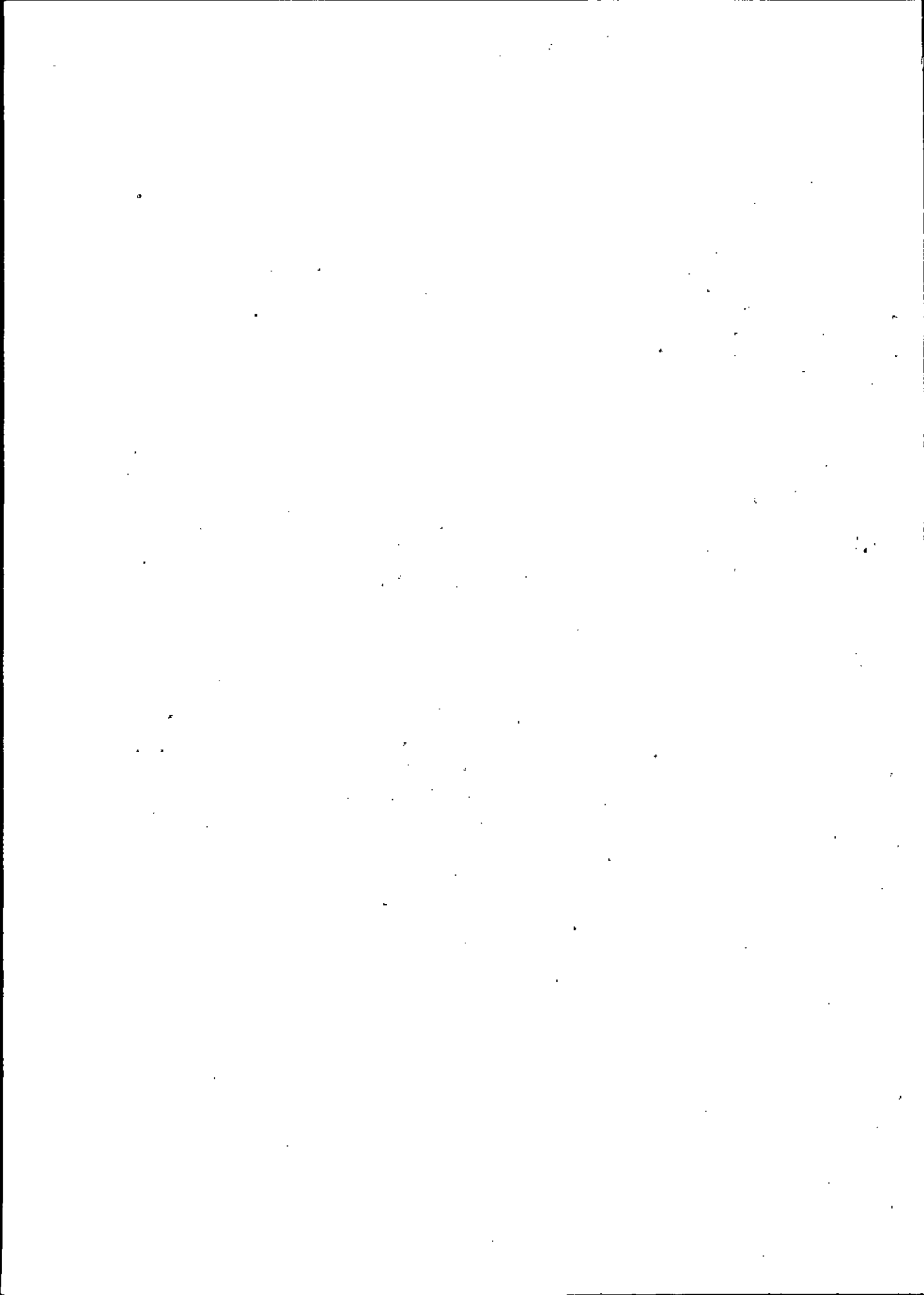
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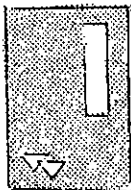
STUDENT OFF. QRS.

COMMANDING OFF QRS





THE AIR CORPS TACTICAL SCHOOL
(As Seen by an Air Corps Student.)
By Major Ira C. Baker, Air Corps



IN the Air Corps Tactical School at Maxwell, two men have had a dream come true to an extent few mortals are ever privileged to witness the fulfillment of their visions. These two men are Congressman Lister Hill and

Colonel Walter R. Weaver.

Some years ago I heard them outline the project to the Assistant Secretary of War, the Honorable F. Trubee Davison. Their glowing accounts of what could be realized here on the banks of the meandering Alabama River were almost unbelievable as one gazed out upon the delapidated post that then existed - a helter-skelter collection of ramshackle huts scattered without pattern over a barren landscape. It was not unlike the negro tenement section alongside. Today the reservation is a well-kept park; on it are more than one hundred permanent structures, well-designed, sited and landscaped. The whole constitutes a military post inferior to few, if any, in the Army.

Maxwell Field exists as the home of the Air Corps Tactical School. That is its only military activity and purpose, which is a big factor in the results which have been obtained and a fortunate thing for the welfare of the student population. A survey of this school, from the point of view of the student, it seems to me, falls into several logical subdivisions: the city and surroundings, the post, the school, the course of instruction, the flying, the facilities for exercise and recreation and, lastly, the social life.

The field is located adjoining the city limits of Montgomery, Ala., a city of approximately 70,000, situated in the east central portion of the state on the banks of the Alabama River. To the newcomer it gives the impression of a sleepy, slow-moving, old Southern town. That it is in many respects. Its people, however, make up any shortcomings the city may seem to hold for those who favor a surging metropolis. They are courteous, kindly, hospitable and very friendly. There is wholly lacking that feeling, present in some "Army" towns, that the military post exists to give the civil populace a livelihood and an income. Relations between the civil and military are excellent. The municipal government and city police show no resentment toward the Federal forces at the city's door, but cooperate willingly for the mutual advantage of both. Army wives who prefer a larger city on special shopping occasions find it but a three hours' drive to

Birmingham, four hours' to Atlanta, seven hours' to New Orleans, and but one day to the cities of Florida on the south. It would be difficult, indeed, to find a better civil setting for the school than the city of Montgomery affords.

The post is well organized to perform the administrative functions incident to supervising the school without friction and for the students' advantage. One point is early impressed, and that is that the student will have nothing to do save pursue the course of instruction. There are no other military duties, as all such are performed by a permanent complement of capable officers. The post affords the usual facilities, commissary, exchange, utilities, barber shop, tailor shop, etc., to such an extent that it is unnecessary to leave the post for any of the living accommodations. Quarters are excellent. They are assigned according to size of families, with little regard to rank. The majority of students are quartered in one section of the post in two-story houses of a common type - six rooms, screened-in sleeping porch and garage. This area is about one mile from the school building and administrative section of the post.

The school is housed in a large three-story building with excellent appointments and accommodations. The class rooms, lecture rooms, and study halls are large and well lighted. Desks are provided students both at home and at the school. One of the best features connected with the school is the military library. It is invaluable for reference purposes and affords all the latest military books, both U.S. and foreign. Here, too, are collected studies and committee reports by previous classes and War Department Staff Studies, which the Air Corps officer will find sources of interest and information. The library alone would make the school worthwhile. All in all, the physical surroundings for the student are all that could be desired.

The course is designed, apparently, with two primary purposes: one as a preparatory course to the Command and General Staff School, at Leavenworth; the second for the education of the Air Corps officer in his own arm - the Air Force. During the first half of the school year the student gets the impression that he is attending a service school of one of the other arms or, rather, a combination of all the service schools of the other arms. During this time he is turned over to the tender mercies of Field Artillery, Cavalry, Infantry, and Chemical

Warfare officers who teach the precepts of modern warfare as fought by those arms. It is early quite apparent that the other branches have selected their instructors with great care, as the type of instruction is of a high order. During this period one begins to feel a little apprehensive about the Air Corps officers who are going to have to maintain this standard. After Christmas vacation, the student begins to find that this is, after all, an Air school. Bombardment, Attack, Observation, Pursuit and Air Force are then thrown at the student with bewildering rapidity. There is a text for each subject; there are lectures in class, illustrative problems and the much-dreaded map problem - four-hour quiz to you, Sir - reserved for the faithful for every Friday afternoon to make the week-end really appreciated.

Each student is graded on the proficiency of his individual work, but high marks are not deified. No student is told his relative standing and, as a result, there is very little evidence of "boning" to lead the class and no hostile competitive spirit. It will require two hours' study per night, five nights a week, for the average student to make average grades. The Commandant and Assistant Commandant recommend against more, and urge that all students conclude their "night-work" by ten o'clock. Many students have found it more efficient to put in this two hours in the morning and, since school does not start until 9:00 o'clock, that is possible without hardship.

Recitation periods are from 9:00 to 12:00, with the afternoon reserved for flying. Wednesday afternoon, Saturday and Sunday are for recreation and rest.

Recreational facilities are exceptionally well provided. The 18-hole golf course is good; there are tennis courts, squash courts, a good swimming pool, a skeet range, and a stable containing some forty mounts in good health; more's the pity, say a large majority of the students. Riding instruction is a part of the course; it is given from 7:15 to 8:15 every other morning. The present class has suffered five major casualties from riding to date, including broken bones - an arm, a leg, and miscellaneous ribs. There is considerable agitation on the part of the present class to make riding optional. The student council has recommended that the Tactical School Cavalry be placed high on the Army's priority list for early mechanization. Students are encouraged to get exercise of their chosen form and given ample opportunity and equipment therefor.

Social activities are reserved for the period from Friday evening to Sunday evening weekly and on holidays. Such gatherings are distinctly discouraged on study nights. The Officers' Club provides ample social functions both for

officers, their wives and families. The principal impression one is given about post social life is that there is no "class consciousness"! Post officers and students drop all distinctions when they leave the class rooms. Due to the efforts of the Commanding Officer, students are made to feel that they are a part of the post life despite the temporary character of their stay. This spirit, perhaps more than anything else, makes the stay at Maxwell Field a pleasant as well as highly instructive one.

There is no question but that the course at the Tactical School will improve the efficiency of any Air Corps officer and, strange as it may seem, he will enjoy his year here. He will look back upon it with satisfaction, and there will be distinct regret when the time comes for departure for another station. To me that is a remarkable recommendation for the school, seeing that it is well known that though "life may begin at forty," school days at that age should be over as the average individual sees it. If military education may be likened to a bad pill, it is not too much to say that a very satisfactory sugar coating is put on it here at Maxwell Field.

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AIRLINES UTILIZE BOLLING FIELD AS AIRPORT

Recent flood conditions along the Potomac River left the Municipal Airport at Washington, terminal for Eastern, Central and American Airlines, in a decidedly unsafe condition, and for several days the commercial lines used Bolling Field, D.C., as a base of operations. Civilian and Army crews cooperated in such a manner as to expedite traffic and each trip went through on scheduled time. Conditions at the Municipal Airport improved within a few days, and the commercial lines again shifted operations to their own field. The entire change went through so smoothly as to speak well for the efficiency of both the commercial companies and the Army crews.

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YES, IT WAS ALSO COLD AT FAIRFIELD, OHIO.

The News Letter Correspondent from Patterson Field, Fairfield, Ohio, says that the past winter has been of the kind that grandfathers delighted to tell their grandchildren about. According to the oldest inhabitant, he adds, not since "Mad Anthony" Wayne chased Indians in this part of the country has there ever been such a winter. Water and air lines on the engine test stands froze up; frequently the temperature inside the hangars was lower than that outside, and the central heating plant always picked the coldest days to break down. After all the grief experienced, the first robin was a welcome sight.

A DOUGHBOY AT AN AIR CORPS SCHOOL
By Major M.F. Lindsey, Infantry

THE detail to attend the Air Corps Tactical School is much sought after by the Infantry officers, and I felt greatly flattered when I was notified that, if funds were available, I would be ordered to the School for the 1935-36 course. When the order was finally issued, I was again greatly flattered by the number of congratulations received from all officers, but especially those of the ground arms. The Air Corps officers whom I knew all praised the school, not only from an academic viewpoint alone, but as a good post with excellent quarters and a good place to live. The prospectus of the School, which arrived shortly thereafter, together with a letter from the Commandant, corroborated their statements. Upon arrival at the School, I found this post came up to all expectations. Everything was new and modern in every respect - excellent quarters, a large and well equipped headquarters and school building, and a beautiful, modern officers' club with courteous and efficient service. The Commanding Officer and his efficient staff were taking a personal interest in the assignment of quarters, and the Quartermaster was exceptionally accommodating. My first impressions of the post were distinctly good. After my first good impressions, I began to feel as if I were an outsider. All of the Air Corps officers seemed to be fully acquainted and "sufficient unto themselves." I was almost as much a stranger to the other ground officers as to the Air Corps officers. We ground officers gradually gravitated together, and from our fancied treatment by the Air Corps officers we dubbed ourselves the "Non-Christian Tribes," suggested to us by one of our group (Major McCatty of the Coast Artillery Corps). As time went on and we were thrown more closely with the air officers in the class room, equitation classes and practical flying, this reserve between us gradually broke down. I now find the class to be composed without an exception of high type officers. The Assistant Commandant, Colonel Herbert A. Dargue, in his opening address, said the members of the class were specially selected, and after six months of rubbing elbows with them, I am convinced of this.

The course has been highly interesting and instructive; it is well organized, and the subjects are in the right proportion. However, I was surprised to find map reading and navigation taught at the school, but after observing for a few periods was greater surprised by the lack of knowledge of these two subjects displayed by a large

number of the class. Equitation, which we attend every other morning between 7:15 and 8:15, is a great drudgery; however, I know of nothing that can take its place for exercise in the open. If we didn't have to ride we would only sleep an hour longer in the morning. The practical flying for a ground officer is interspersed with interesting and dull periods. If he has something to do, such as a navigation problem, it is interesting, but to ride around in the fuselage of a Bomber for two and a half hours is extremely dull.

As for the teaching methods, I miss the "applicatory" method, or "Explanation," "Demonstration" and "Examination" to which I have become accustomed in the Army, and which is present in most of the branch schools. If, after the theoretical classroom instruction in Bombing Probabilities or an attack against an airdrome, we could have gone out and flown the problem, dropped the bombs and applied the technique taught, the instruction would have been more convincing. Of course, this is no fault of the School, as it does what it can with the material available.

I have been impressed by the attitude of some of the instructors in apologizing and making excuses for the lack of conclusive proof to bear out their theories regarding tactics and technique (particularly the former). It seemed to me to weaken their case. Practically all the new ideas on tactics of the ground arms are based on theory only, and in some cases on weapons that have not even been developed. I don't think the Air Corps should be so apologetic about theirs. On the other hand, I have been impressed by the knowledge of their subjects displayed by the instructors and their broad viewpoint.

My tour as a student at the Air Corps Tactical School has been an unusually pleasant and profitable one. It has given me an insight into, and an appreciation of, the problems of the Air Corps. My appreciation of the airplane as a valuable weapon has been considerably increased and, contrary to the belief of some, and in keeping with the majority of the ground officers, I have a high regard for the professional attainments of the officers of the Air Corps and a strong belief in the capabilities of the airplane. I consider it a privilege to have been a student at the Air Corps Tactical School.

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Effective July 1, 1936, following the completion of his course of instruction at the Army War College, Lieut.-Colonel John F. Curry, Air Corps, is detailed as a member of the War Department General Staff, Washington, and will report to the Chief of Staff for duty.

V-6988, A.C.

By Major S. F. Landers, Air Corps



MAXWELL Field is located in the west edge of Montgomery, about two miles from the center of the city, and overlooks the Alabama River, which forms the northern boundary of the reservation. All buildings are new

and modern, having been constructed within the past five years. All quarters and barracks are equipped with automatic gas furnaces and water heaters and, except for 13 NCO bungalows, all have mechanical refrigerators installed. There are 99 sets of officers' quarters. All are of the two-story, one-family type. Company officers' quarters have three bedrooms, an attic, and, in most cases, a sleeping porch. Field officers' quarters are similar, but have four bedrooms. Each set has a garage. The quarters are in a wooded area, and streets are laid out in an irregular manner to preserve all trees possible. This is one of the principal reasons why Maxwell Field is generally considered to be one of the most attractive posts in the Air Corps.

The bachelor building contains 14 two-room apartments for officers stationed here and 4 single rooms available for visiting officers. Recreational facilities include an officers' club and mess, swimming pool, tennis courts, an excellent 18-hole golf course, three squash courts, horses for riding, a skeet range, basketball and volley ball floor, baseball diamond, football field, and cinder track. Good hunting and fresh water fishing are to be found in the vicinity, and excellent salt water fishing is available in the Gulf of Mexico, about 150 miles south.

Winters are mild, with temperatures below freezing normally occurring only a few days each winter, while snow is seen only at intervals of several years. Golf and other outdoor games are played the year round.

The recreational facilities named above are available for both officers and enlisted men. Noncommissioned officers have their own club, and one of the swimming pools is located near the barracks and noncommissioned officers' quarters. There are 77 sets of noncommissioned officers' quarters. Thirteen are small one-family bungalows, while the other 64 are large two-story duplex houses, each with four bedrooms and equipped with automatic gas furnaces, water heaters, mechanical refrigerators, etc.

Very little fatigue duty is necessary, as most of the upkeep of the post is done by Federal prisoners, a camp of which is located on the reservation. Each barrack is equipped with a cafeteria type mess so that food is always served hot, whether a man eats early or late. Labor-saving devices, such as dish-washing machines, bread mixers, gas ranges, potato peelers, etc., reduce kitchen work to a minimum.

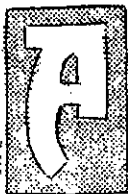
The authorized strength of the post is 641 Air Corps men and 69 Quartermaster, Medical, Signal, Finance, Ordnance, etc. Quarters are available for all noncommissioned officers of the first three grades. There are normally about 125 to 130 officers assigned to the post, 70 of whom are students. At the present time, eleven of these are living off the post on commutation status.

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A CHEMICAL WARFARE OFFICER AT THE AIR CORPS TACTICAL SCHOOL

By Captain C. M. Kellogg, C.W.S.



detail to the Air Corps Tactical School is much desired by chemical officers for perfectly obvious reasons. The school and the post of Maxwell Field have an established reputation in our service. Several of our most capable officers have served as instructors in the Air Corps Tactical School, I know, to the mutual benefit of the Air Corps and the Chemical Service. The dispersion of war chemicals by means of aircraft had its inception about 1920-21, and all the developments have occurred since that time. The Air Corps and the A.C.T.S. have had a decided influence on the course of experiments conducted by the technical divisions of the Chemical Service at Edgewood Arsenal. Close cooperation between the Chief of the

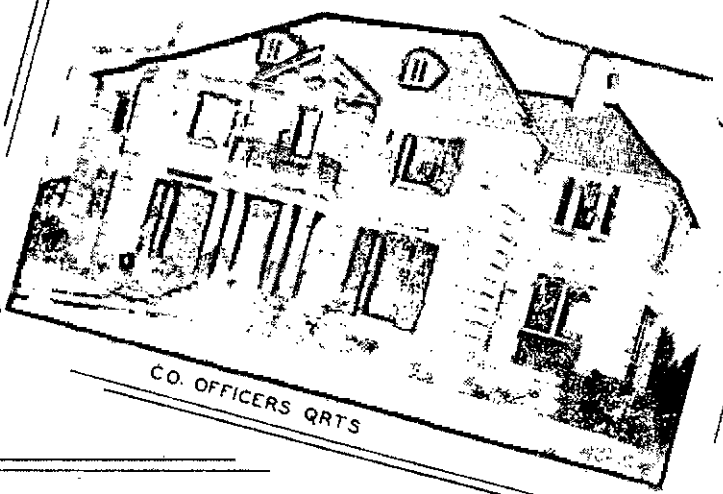
Air Corps and the Chief of Chemical Warfare Service is apparent in this work.

On arrival at Maxwell Field, I found conditions as described - uniformly excellent. The quarters assigned are the best I have ever occupied in my service. From the Commanding Officer on down, all the post personnel have been uniformly helpful and pleasant to serve under and with. The various activities - Quartermaster, Post Exchange, Post Hospital, Air Corps Supply, Operations Office, Officers' Club - all serve the student officer in an admirable manner. Living conditions and recreational facilities are of the best. Anyone interested in sports finds available the 18-hole golf course, tennis, squash, swimming, skeet, hunting (nearby), volley ball, and equitation. The best athletic facilities of any post

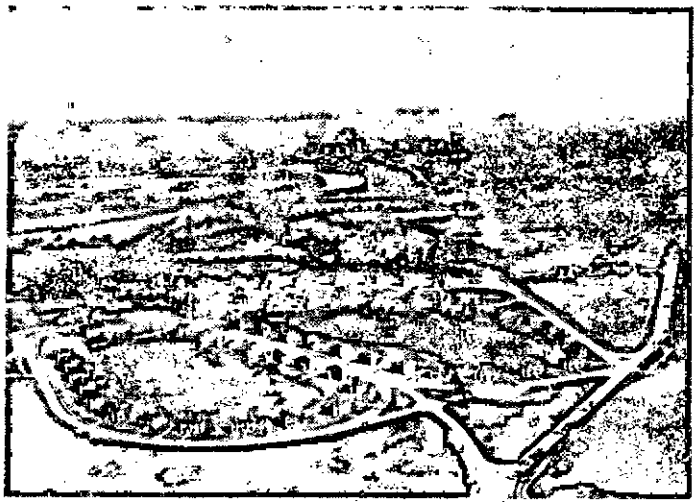
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COMMANDING OFFICERS QRTS.



CO. OFFICERS QRTS



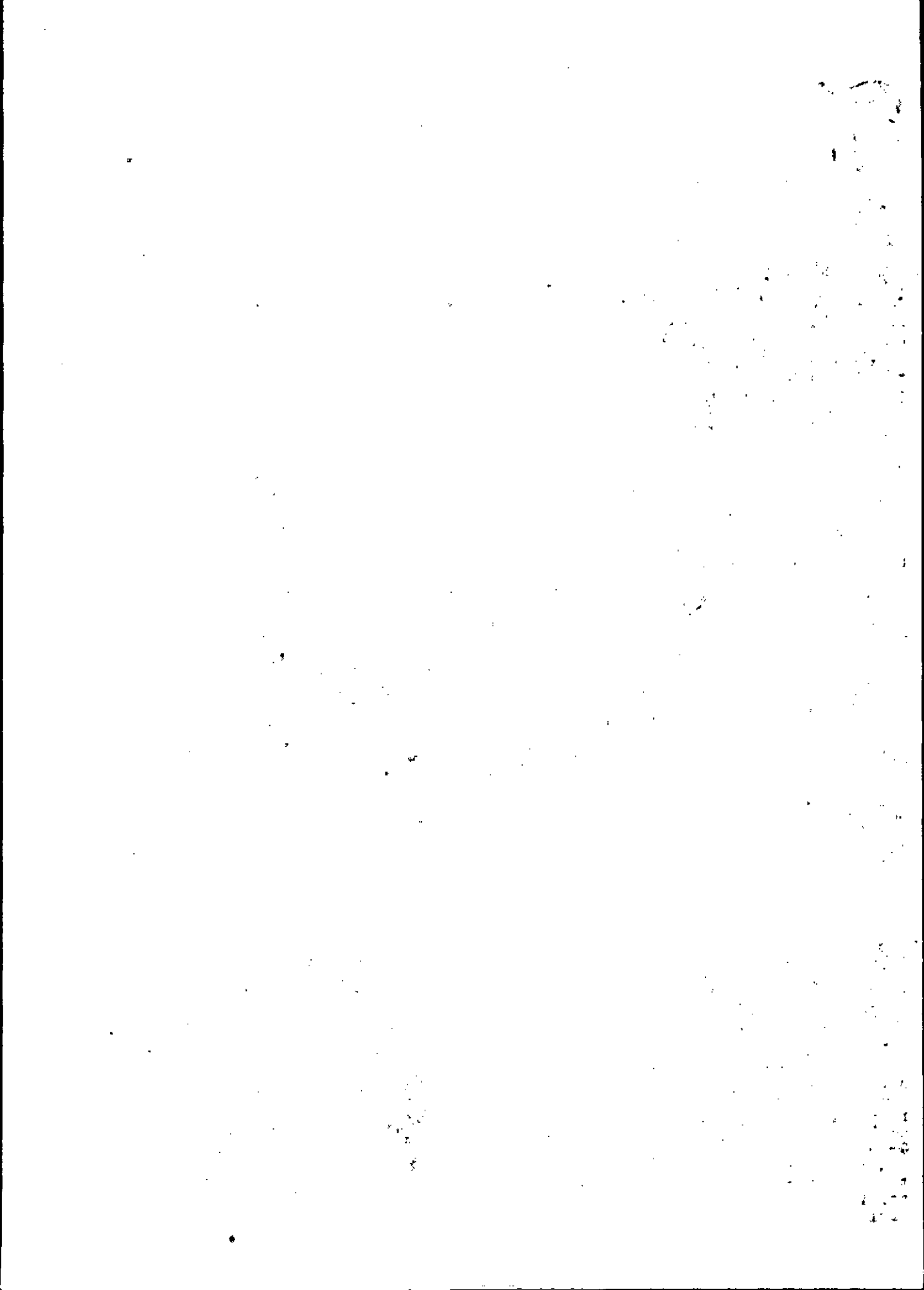
OFFICERS QRTS. AREA



CO. OFFICERS QRTS.

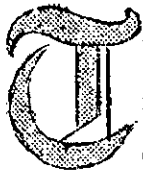


FIELD OFFICERS QRTS.



THE COMMAND, STAFF, AND LOGISTICS DEPARTMENT

By Major F. I. Eglin, Air Corps



HE Command, Staff, and Logistics department consists of five sections, each of which is charged with presenting courses as indicated below:

THE MILITARY INTELLIGENCE SECTION

This section presents courses in Military Intelligence, Military Geography, and Maps and Photographs. The scope of these courses, in brief, follows:

Military Intelligence.- The course is designed to acquaint the class with the process by means of which information of the enemy is developed into military intelligence, the organization by means of which this is accomplished, and the principles governing the employment of military intelligence agencies, both air and ground.

Military Geography.- This subject includes physical geography, human geography, political geography, and economic geography. It consists of much more than a mere collection of data - it is an analysis of the latest accurate data made from a military viewpoint. The course is presented in lecture form based on selected areas.

Maps and Photographs.- This course covers the reading and use of military maps, and the making and use of aerial photographs, including mosaics.

THE COMBAT ORDERS SECTION

The Combat Orders Section presents courses in the following subjects:

Combat Orders.- The course is designed to acquaint the class with the several classes of combat orders, stressing particularly field orders. The instruction covers the orders of both air and ground units, with special attention to expression, technique, form and sequence.

Solution of Problems.- This subject covers the logical consideration of all factors affecting a specific situation and the methods of arriving at correct decisions in such situations; in short, the estimate of the situation. The course also includes instruction in the mechanism and methods of solving problems.

Mobilization.- The subject is presented in lecture form and concerns mobilization plans of the War Department.

THE LOGISTICS SECTION

Logistics is that branch of the art of war which determines the details necessary for the movement and supply of troops throughout all phases of military operations. The subject is presented in two courses, Air Logistics and Ground Logistics.

Air Logistics.- This course covers the organization of logistical agencies serving the air units, and the principles and methods governing the opera-

tion of these agencies.

Ground Logistics. This course presents a general picture of the territorial organization of a theatre of war, and includes a detailed study of the supply and movement of the infantry division.

THE STAFF DUTIES SECTION

Staff Duties.- This course is concerned with command and staff principles, functions, and organization, with particular reference to staff teamwork and the preparation of the common staff papers, including journals, reports, staff maps, and objective folders. The course covers the staffs of both the air and ground units.

SIGNAL COMMUNICATIONS

Signal Communications.- While communications are most essential to the operation of all combat units, they are auxiliary and not peculiar to any specific ground arm or class of aviation. The subject is therefore given a special section in this department.

The objective of the communications course is, most definitely, not to train communications officers, that being one of the functions of the Air Corps Technical School, Chanute Field. In this course the adaption of each class of communications to the operations of the combat units is developed and methods of solving communications problems met with in practical operations are suggested. The course covers the communications of both the ground and air units.

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ASSIGNMENT OF GRADUATES OF THE A.C.T.S.

Special Orders of the War Department, recently issued, assign the following-named Air Corps officers, upon the completion of their present course of instruction at the Air Corps Tactical School, to duty at stations indicated:

Captain John M. Clark to the San Antonio Air Depot, Texas.

Captain Cortlandt S. Johnson to Middle River, Md., as Air Corps Representative at the aircraft factory of the Glenn L. Martin Company.

Captain Leland W. Miller to the Office of the Chief of the Air Corps, Washington.

Captain Aaron E. Jones to Langley Field, Va., with GHQ Air Force.

Captain Donald D. Fitzgerald to Bolling Field, D.C.

Captain Merrill D. Mann to Chicago, Ill., for duty with organized reserves, 6th Corps Area.

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In devoting this issue to the Air Corps Tactical School, we express our appreciation to the Commandant thereof and to the other officers who have cooperated so whole-heartedly to make this particular issue possible. The cover page and the illustrated insert sheets were prepared by the photographic personnel, Maxwell Field.

V-6988, A.C.

THE STUDENT CLASS AT THE TACTICAL SCHOOL

Graduation exercises will be held on Tuesday morning, June 2, 1936. The following program has been tentatively arranged:

Invocation
Address to the Graduating Class
Presentation of Diplomas
Benediction

The following officers are members of the class of 1935-1936:

Lieutenant-Colonel

Hoffman, Edward L.

Majors

Davidson, Joseph H. McClelland, Harold M.
Eaker, Ira C. Hodge, John R., Inf.
Kepner, William E. Hoppough, Clay I., S.C.
Lindsey, Malcolm F., Inf. O'Neill, Raymond E.
McCatty, Kenneth, C.A.C. Sorenson, Edgar P.

Captains

Bayley, Eugene B. Kellogg, Crawford M., CWS
Beery, Levi L. Langmead, Edmund C.
Bivins, Hugh A. Longfellow, Newton
Caldwell, Charles H. Lowe, Thomas M.
Cannon, John F. Lyon, Alfred J.
Carr, Lawrence J. Magee, Richard H.
Chidlaw, Benj. W. Mann, Merrill D.
Clark, Harold L. Maughan, Russell L.
Clark, John M. Mayhue, Don W.
Connell, Samuel M. McGinnis, Harold A.
Crawford, Alden R. McPike, George V.
Cumberpatch, Jas. T. Miller, Leland W.
Dayton, Lewis A. Moon, Ernest S.
Dulligan, John H. Morris, William C.
Duncan, Claude E. Old, William D.
Ely, Louis B., F.A. Parker, James E.
FitzGerald, Donald D. Phillips, Donald B.
Ferguson, Homer W. Powers, Edward M.
Foster, Thad V. Schneider, Max F.
Gaffney, Dale V. Sharon, Leon E.
Glenn, Albert F. Shea, Augustine F.
Halverson, Harry A. Snavely, Ralph A.
Hoag, Earl S. Thomas, Charles E., Jr.
Horn, Charles A. Tocher, Bernard J.
Johnson, Cortlandt S. Twining, Nathan F.
Jones, Aaron E. Wolfe, Kenneth B.

First Lieutenants

Fair, Ford L. Ferris, Carlisle I.
Quesada, Elwood R.

Navy Officer

Lieut. Bennett W. Wright

Marine Corps Officers

Captain Thomas J. Cushman
Captain William L. McKittrick
Captain Stanley E. Ridderhof

NOTE: Above are Air Corps officers except as otherwise noted.

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Grading and construction work on the new Bolling Field is progressing rapidly with two shifts of W.P.A. workers on schedules of six hours per day each. The outlines of runways are becoming visible, and leveling and grading operations continue steadily.

The date of the completion of the project has not been predicted.

STAFF AND FACULTY OF AIR CORPS TACTICAL SCHOOL

The Staff and Faculty of the Air Corps Tactical School consist of the following officers

Colonel Arthur G. Fisher, A.C., Commandant.
Lieut.-Colonel Herbert A. Dargue, A.C.,
Assistant Commandant.
Captain Julian B. Haddon, A.C., Secretary.

Department of Air Tactics and Strategy

Sections

Air Force: Chief: Major R.M. Webster
Inst.: Lieut. H.S. Hansell
Attack: Chief: Major L.A. Smith
Inst.: Major E.C. Kiel
Bombardment: Chief: Major Odas Moon
Inst.: Lieut. L.S. Kuter
Observation: Chief: Major F.W. Evans
Inst.: Major B.E. Gates
Pursuit: Chief: Major C.L. Chennault
Naval Operations: Lieut.-Col. H.A. Dargue

Department of Command, Staff and Logistics

Director: Major F.I. Eglin, Air Corps

Sections

Combat Orders: Chief: Major F.I. Eglin
Signal Communications: Chief: Maj. Grandison Gardner
Logistics: Chief: Maj. A.W. Martenstein
Staff Duties: Chief: Major F.I. Eglin

Department of Flying

Director: Major L.A. Smith, Air Corps

Sections

Practical Flying: Chief: Major L.A. Smith
Air Navigation: Chief: Maj. Grandison Gardner

Department of Ground Tactics

Director: Lieut.-Colonel W.N. Porter, C.W.S.

Sections

Antiaircraft: Chief: Major B.F. Harmon, CAC.
Cavalry: Chief: Major R.L. Creed, Cav.
Chemical Warfare: Chief: Lt.-Col. W.N. Porter, CWS.
Combined Arms: Chief: Lt.-Col. W.N. Porter, CWS.
Inst.: Major H.H. Ristine, F.A.
Inst.: Major R.L. Creed, Cav.
Inst.: Major B.F. Harmon, CAC.
Inst.: Major L.B. Glasgow, Inf.
Field Artillery: Chief: Major H.H. Ristine, F.A.
Infantry: Chief: Major L.B. Glasgow, Inf.

Extension Course

Extension Course: Chief: Major John I. Moore

NOTE: Members of Staff and Faculty are Air Corps officers except as noted.

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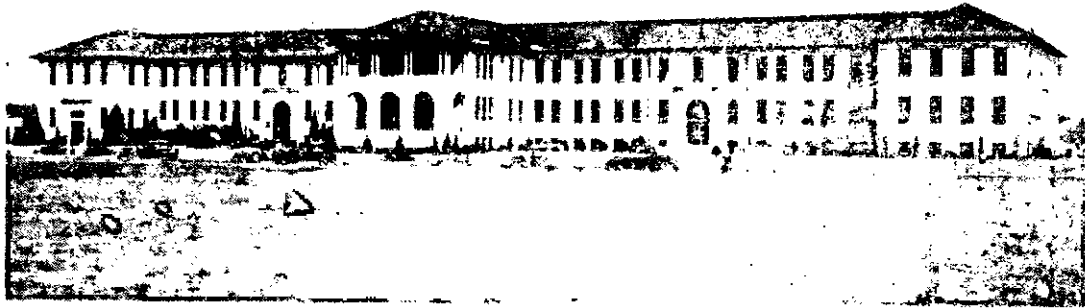
NEW LINK TRAINER AT BOLLING FIELD

Final installation and adjustments of a new Link Trainer at Bolling Field, D.C., have been completed recently, and the apparatus is operating in a highly satisfactory manner. The use of the Trainer is expected to reduce materially the amount of time necessary for completion of the prescribed course of instrument flying training at that station.

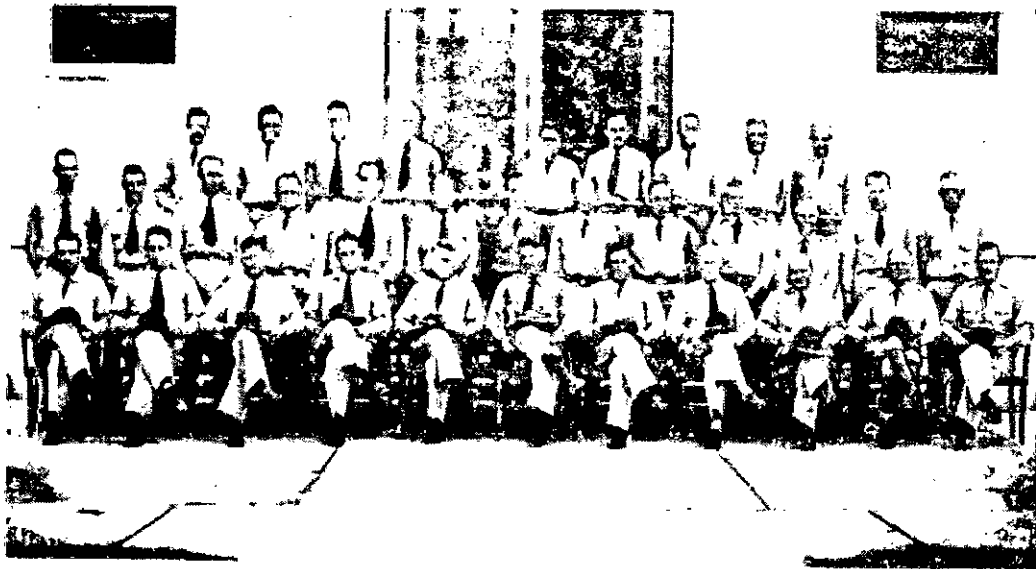
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Capt. Thomas M. Lowe, A.C., is assigned to duty with the Organized Reserves, 5th Corps Area, at Columbus, O., upon completion of his course of instruction at the Air Corps Tactical School.

V-6988, A.C.

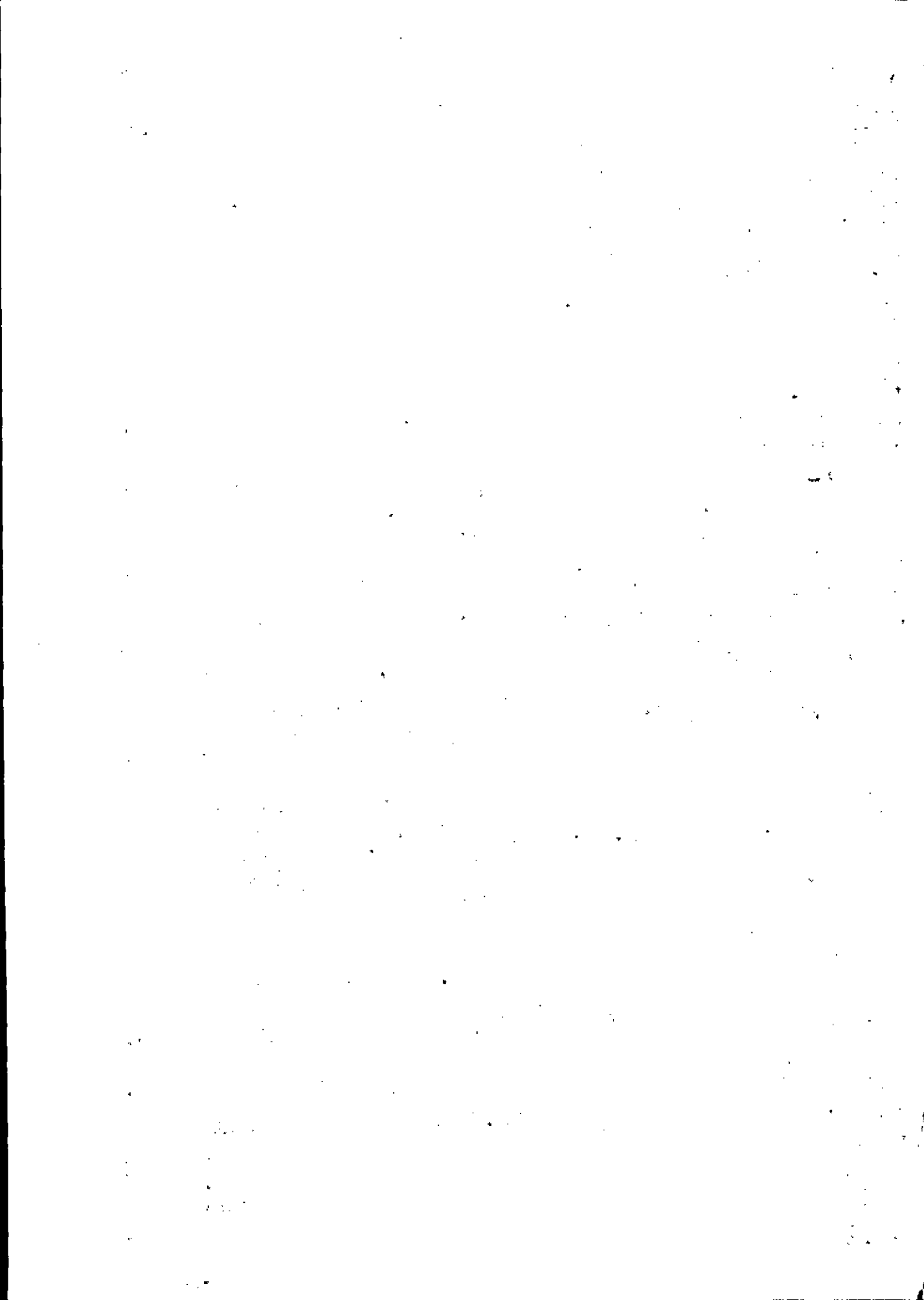


THE AIR CORPS TACTICAL SCHOOL



CLASS OF 1935-36





A Chemical Warfare Officer at the ACTS
(Continued from Page 12).

I have ever served on are here to be taken advantage of. The arrangement of a mutually supported nurses' fund by the Post Hospital is most satisfactory. The School building is relatively new and completely equipped. After seeing this School and the new Infantry School building at Fort Benning, it seems that the Chemical School could well afford to receive more liberal treatment. From a personal viewpoint, the instruction in all subjects has been of much benefit to me throughout the course. Some subjects are, perhaps, too elementary for certain officers. However, officers qualified by previous opportunities, are excused on proper request. I feel that I now have a much broader military viewpoint, which is one of the primary reasons for requesting the detail.

The A.C.T.S. Library should be mentioned as a very valuable and pleasant addition to the facilities for study and outside reading.

It seems to me that the size of the class is such as to make it very hard for the instructor. I can suggest no remedy for this situation other than possibly more instructors and smaller sections. The classes that gave the most trouble at M.I.T. were the large lecture classes in military science in the second year. These classes ran about 100 to 120 men. Anything that I might say in regard to instruction should be accepted with reservations, as my experience is only as student in my own branch school. Writing a good textbook is a very difficult job. Some of the texts of the Chemical School are verbose. Some of the texts used here have that tendency.

Among the many interesting subjects, the flying periods appeal to me most. Before coming here I had about 12 hours total flying time, hence my interest in this subject. Some of the practical difficulties connected with air navigation, bombing from high altitude, and proper observation training are brought home by these periods. The care required in formation flying under favorable conditions is amply illustrated. Low flying attack missions give me something to think about on account of the chemicals as an auxiliary weapon. All the Air Corps officers of the class that I have flown with are excellent pilots, and I have the greatest confidence in them.

I have been impressed while here with the necessity of all branches pulling together and the elimination of useless dissension within and between branches. Over-exaggeration and understatement are apparently about equally dangerous. It has been a great privilege to have been permitted to come here and attend

the A.C.T.S. course. On account of the importance of future cooperation between the Air Corps and the Chemical Service, more Chemical officers should have the advantage of the training at the Air Corps Tactical School.

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GUNNERY PRACTICE FOR MAXWELL FIELD PERSONNEL

Valpariso, Fla., which is about 150 miles south from Maxwell Field, is the site of the bombing and gunnery range used by the personnel stationed at that field. Valpariso is on the Choctawhatchee Bay, which is an arm of the Gulf of Mexico, and Maxwell Field officers held their first practice there the week ends of March 28th and 29th and April 4th and 5th. During these periods, all members of the student body of the Air Corps Tactical School, including those from the ground arms, had gunnery practice firing at tow targets.

Touching on the firing conducted the latter part of March, the Valpariso, weekly newspaper stated:

"Above the same trails and over the same streams along which fighting forces of the United States once pushed and pulled supplies and doggedly cut their way a few miles each day to battle the British at New Orleans, a new fighting force on wings last Saturday flew, swooped, banked, dove and with staccato firing gave battle to an imaginary foe in practice defense of the same territory that General Jackson's frontier soldiers once saved to the nation.

To the people of Valpariso and environs the maneuvers of a group of fighting planes over Choctawhatchee Bay and the Gulf was a source of great interest and wonder. In army parlance, it was an occasion of tow target practice and machine gun firing at the Valpariso Gunnery Base by officers on duty with the U.S. Air Corps Tactical School at Maxwell Field, Ala. * * Plans and hopes of both the people of the Bay Country and the Maxwell Field Air Corps staff materialized at 7:30 Saturday morning when pursuit planes, attack planes, bombers, observation and transport planes, thirty-six in all, swooped down over the Valpariso Airport and landed for a day of machine firing practice with tow targets. Forty-five flying officers headed by Col. A.L. Fisher, commanding Maxwell Field, were present, forty of them members of the Air Corps Tactical School. Of the 110 enlisted men at the field, fifty were brought down by transport and bomber to assist in the day's work.

The maneuvers went off like clockwork. Every hour, starting at 9:30 in the morning, a new group of officers took to the air testing their skill with machine guns in diving and firing at the tow targets jumping here and there behind the tow planes. The Gulf coast beyond the Pass was divided into eight mile sectors, and each flight took a different part of the coast. To local residents the practice was of endless interest; likewise the many planes drawn up in orderly rows, propellers front, at the airport. Hundreds gathered Saturday and Sunday to watch the flying and examine the ships. * * "

NATIONAL DEFENSE DEMONSTRATION AT SPOKANE
By Lieut. Ellsworth C. French

VISITING Air Corps personnel attending the National Defense Demonstration at Felts Field, Spokane, Wash., May 29, 30 and 31, won't have to pay any hotel bills.

This "unpleasant feature" about extended cross-country flights was shoved into the discard by the 41st Division Aviation, Washington National Guard, joint sponsor of the Demonstration, when plans were completed for the use of a brick building adjoining the airport for a barracks.

Major Ralph P. Cousins, on duty in the National Guard Bureau, Washington, has already advised National Guard Observation Squadrons that a blanket cross-country authority has been authorized for flights to the Spokane Demonstration, in which 1400 troops of the Regular Army, National Guard and Reserve Corps Infantry, Artillery and Air Corps will participate.

Quarters for the visiting pilots are situated less than one block from the 41st Division Aviation administration building and spacious hangar, where all necessary facilities are available.

The plans include regular scheduled automobile transportation from Felts Field to Spokane, and entertainment for the visitors.

"It is pleasing to announce that we have eliminated the hotel bill for visiting pilots," said Lieut. H.R. Wallace, in charge of the aeronautical features of the demonstration. "We want to make the visit of our guests as pleasant as possible, and also as inexpensive as possible. There will be a regular mess at which all military personnel will be eligible, and there are other eating accommodations available on Felts Field. Friday, May 29th, the first day of the demonstration, will be largely devoted to aviation, and we desire all visiting pilots to be present that day and remain throughout the demonstration."

As the military defense demonstration will hinge largely around actual field training conditions, troops other than the visitors will be housed in "pup tents."

Early replies to invitations extended to National Guard Squadrons assure representation from the Pennsylvania, Tennessee and Maryland squadrons. Others indicated a willingness to attend, but asked about housing conditions while in Spokane.

"The authority given by Major Cousins for cross-country flights to Spokane provides an exceptional opportunity for National Guard Squadrons," said Major Robin A. Day, Instructor and Commander of the 41st Division Aviation. "Few, if

any, National Guard squadrons have visited the Northwest country, which is occupying so much attention in the scheme of National Defense today.

"No airway in the country is better equipped than the Northern Transcontinental Airway, over which the Northwest Airlines operates a daily double round trip schedule between Seattle and Chicago. And there is no more interesting country to fly over than that along the Northern Transcontinental Airway. Pilots making the trip will agree that it is an excellent training flight."

Last year, Colonel Ralph Royce, commander of the First Pursuit Group, Selfridge Field, Mich., had his pilots ferrying Pursuit airplanes from the Boeing factory at Seattle, fly at least one way over the Northern Transcontinental Airway.

During the day before and the first day of the demonstration, motor caravans will be moving into Spokane from all parts of the Inland Empire. In addition to the permanent resident Regular Army and National Guard troops in Spokane, troops will come from Coeur d'Alene, Idaho; Walla Walla; Prosser, Yakima, Pullman and Wenatchee, Wash.

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CADET KRAMER LOSES LIFE IN AIRPLANE CRASH

Flying Cadet Charles E. Kramer, a member of the 27th Pursuit Squadron, Selfridge Field, Mich., was instantly killed at 11:15 a.m., March 30th, when the P-26 airplane he was piloting crashed about two miles northwest of New Baltimore, Mich. He was engaged in acrobatics on a local training mission when the accident occurred. Upon completion of the course at the Air Corps Training Center, San Antonio, Texas, Cadet Kramer was transferred to Selfridge Field for duty, and arrived March 9, 1936. His remains were transferred to Fulton, Ky., March 31st, for interment, Flying Cadet Charles E. Marion being the escort. He was the son of Mr. and Mrs. Thomas J. Kramer, of Fulton, Ky.

The Air Corps extends deepest sympathy to his bereaved family.

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Mrs. Franklin D. Roosevelt, accompanied by her two small grandchildren, was a recent visitor at Bolling Field, D.C. Major E.L. Eubanks, Air Corps, piloting the GHQ flagship, met Mrs. Roosevelt at the field and flew the party to Langley Field, Va.

Mrs. Roosevelt then proceeded to Newport News and christened the new aircraft carrier "Yorktown." On the following day, Major Eubanks flew Mrs. Roosevelt and party back to Bolling Field.

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ADDITIONAL DATA ON THE WINTER TEST MANEUVERS

SINCE the publication in the previous issue of the News Letter of an article on the Winter Test Maneuvers, submitted by the correspondent from Barksdale Field, La., additional data on these maneuvers was received from the Langley Field correspondent, excerpts from which are set forth below.

More than 300 officers and enlisted men from Barksdale, Langley, Mitchel and Selfridge Fields were engaged in conducting cold weather tests of clothing and equipment in the New England area, under the command of the Commanding Officer of the 8th Pursuit Group, GHQ Air Force.

Concentration of all units at Mitchel Field, N.Y., began on January 26th, when the Group Commander and members of his staff arrived in Pursuit type airplanes, followed by 12 members of Group Headquarters Detachment in a C-4A Transport. Langley Field furnished ten B-10B Bombers for the Maneuvers; Selfridge Field, P-26A's; and the Transport planes comprised 2 C-4A's, 3 C-14's, 2 C-24's, and 1 C-27. A B-6A was also used as a transport. On the return trip it was necessary to substitute a C-4A for the C-27, due to the inability of the latter plane to take off from Olmstead Field at Middletown, Pa., because of snow on the runways. In addition to the transportation of personnel, supplies and equipment were ferried by transports. The proper routing of the limited number of transports made available constituted a major problem.

By February 1st, all units had moved into the tactical position assigned them for the first phase of the Maneuvers -- the Bombardment Squadron at Concord, N.H., and the Attack and Pursuit Squadrons at Mitchel Field.

The Bombardment Squadron then made attacks on the Mitchel Field area, defended by Attack and Pursuit, with the use of the method of interception developed during the GHQ Air Force Concentration AF Plan B, which provided that a ground radio warning net be thrown around an area to warn the defending forces of arrival of enemy aircraft.

Completing the first phase on February 7th, The Command Post moved to Concord, followed by the Attack Squadron and members of Group Headquarters.

The Pursuit Squadron, based at Burlington, Vt., defended that area against attack by the Bombardment and Attack Squadrons.

Although the tactical situation was made secondary to the testing of clothing and equipment, the report, showing a total of 437 tactical missions accomplished in 1100 hours of flying over approximately 150,000 miles, gives evidence of the success of the tests.

These 1100 hours, added to 1500 hours of non-tactical flying (including transport movement, movement of units getting into position for tactical operations and staff movements) total 2600 hours flown over approximately 300,000 miles. The absence of engine failure reports during the exercises is highly complimentary to the type of equipment now in use, especially considering that tests were being conducted on grades of oil and other engine accessories.

In the 100 transport flights no accidents of any description were encountered, despite that landings and take-offs were made from ice and snow-covered runways by pilots unfamiliar with cold weather operation. This no-accident record hung up by the pilots and their crew chiefs is deserving of the highest praise.

In the 2600 hours of flying there were three accidents, two in Pursuit planes being previously mentioned. The crash of a B-10 was due to the landing gear failing to lower while in flight. Pilots at Concord had been previously instructed that, in case of failure of landing gears to operate, to proceed to Mitchel Field and there attempt a landing. Upon coming in to make a landing at Concord, Lieut. T.J. Cunningham, pilot of the B-10, attempted to lower the wheels and, not being able to do so, radioed his difficulty to the ground station and then proceeded to Mitchel Field, where he accomplished a safe landing on one wheel which he succeeded in lowering. Very little damage was done, due to the sturdy construction of that type plane.

Among the 130 items of clothing and equipment tested were skis for P-26A and A-12 planes; special oil for machine guns; tents, with sleeping bags and pneumatic mattresses; flying clothing; including shoes, gloves, vests, jackets, helmets and trousers; engine heaters, covers and fire pots of varying designs; heaters for cabins of transport planes; repair tents for making adjustments and inspections; improved priming systems; engine starting accessories; portable night lighting equipment; special grades of engine oils and lubricants, and Snogo plow for clearing snow from runways.

Bomb release mechanism, it was determined, do not function as efficiently as now constructed. On the other hand, machine gun operation was found to be satisfactory when using a specially prepared oil, but it was definitely determined that more personnel is necessary to care for the guns under cold weather operation than in warmer climates.

Conclusions were reached that heated cockpits are desirable for winter operation, due to the restrictions imposed on the pilot when wearing heavy clothing. Three methods of heating airplane en-

gines that had been standing in the open and exposed to the weather appeared feasible. One involved the use of steam heat; the second, the utilization of the gases from the engine exhaust; and, third, the use of electrical equipment. If steam heating is used there must be available hangars in which to store planes while not in use, in order to prevent freezing in the system. Utilization of the exhaust gases is considered impracticable in planes of the Pursuit type. The use of electrical equipment would require another generator or battery, thus adding weight, reducing speed, maneuverability and a further reduction in carrying capacity for military loads.

Primarily, the New England Tests involved weather. The maneuvers further established the value of a reliable weather service. The central station, located at Concord, was able not only to make predictions of the next day's conditions and assist in mapping out tactical flight missions in advance, but was also able to give and receive reports of changing conditions by radio at all times when planes were in the air.

The tests showed that radio communications can be conducted between ground and air from ship to ship in winter weather. While radio communications were regarded as satisfactory, improved equipment, particularly ground station equipment, would increase efficiency.

Touching on the rescue by a Coast Guard cutter of seven C.C.C. boys adrift on an ice floe in Cape Cod Bay, which incident was mentioned in a previous issue of the News Letter, the News Letter Correspondent states that Major Barney M. Giles, commanding the detachment of the 20th Squadron at Concord, located a tiny dot on the ice which he was soon able to identify as the boys, and then proceeded to circle the floe. He added that, aside from the humanitarian aspect of the rescue, a tactical point was proven when the tiny dot - the seven boys - was located in a remarkably short time and its position radioed to shore parties and Coast Guardsmen. Enemy carriers and aridromes could be located with the same speed and accuracy.

The removal of snow from the airports, and especially from the runways, presented one of the major problems of the exercises. A "Snogo" plow was shipped from Iowa to Concord. Due to the cooperation of the New Hampshire State Highway Department in making their equipment available at all times, and the lack of heavy snow falls, it was sent to Burlington, Vt., where it performed satisfactorily.

It was found that when operating from bases such as those at Concord and Burlington, where snow removal equipment was available, the use of skis and chains on airplanes was unnecessary, al-

though several planes were equipped with them. Steel-studded non-skid tires tested in the maneuvers were delivered on seven days' notice. This was regarded a remarkable feat, considering that five days is the normal time allowed for the manufacture of a regular tire.

That the tests were considered important to commercial aviation was evident by the presence of many representatives of manufacturers of aircraft parts and accessories to observe the operation of equipment subjected to cold weather operations. The cooperation of these various representatives in aiding mechanics to make repairs and changes in equipment was of great value to successful operation.

A representative of the Aeronautics Branch of the U.S. Navy attended the exercises as an observer. While the tactical problems confronting the Navy are of a different nature, many of the features of the cold weather test, such as the type of clothing worn by the pilots and the grades of oil and other lubricants used in sub-zero temperatures, were considered of value.

It will take two months to complete the records of the tests undertaken during the exercises. Some of the conclusions may be changed as a result of further study and evaluation, but enough has been learned to convince officers that the New England Winter Maneuvers may have been productive of more conclusive results than any other tests ever conducted. For this the Group Commander has expressed official appreciation to the officers and men of his Group and particularly to the people of the New England Area and their public representatives for the kind cooperation which made the findings possible.

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LIGHTER-THAN-AIR ACTIVITIES

Lieut.-Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Belleville Ill., flew the TC-14 airship on March 25th, down the Ohio River to make a preliminary survey for the Red Cross of the high water conditions. Colonel Kennedy found the Illinois side of the river to be dry, while the Kentucky lowlands were already under water. At that time the flood crest from the upper Ohio River had not reached the Shawneetown area.

The TC-11 airship, which is being erected by the Ninth Airship Squadron, Scott Field, is a helium-inflated, non-rigid type of 200,600 cubic foot capacity, equipped with an enclosed car. This airship is smaller than the TC-14 and is externally rigged.

The 21st Airship Group Headquarters Red Air Alert 24-hour watch began at 10:00 a.m., March 30th, guarding 3105 bicycle

Biographies

LIEUT.-COLONEL JOHN B. BROOKS, AIR CORPS

One of the early Army fliers, now serving a tour of duty as a member of the War Department General Staff in Washington, is Lieut.-Colonel John B. Brooks, Air Corps, who has been in the flying game since 1915, and received his flying training in that year at the Signal Corps Aviation School at San Diego, Calif.

Col. Brooks was born in New York on June 8, 1891. He is a graduate of the St. John's School, Manlius, New York. Appointed a second lieutenant from civil life, November 30, 1912, he was assigned to the 10th Cavalry, March 14, 1913, and joined his regiment at Fort Ethan Allen, Vermont. In the following December, he moved with his regiment for station at Fort Huachuca, Arizona, for border patrol duty. Later he served at several other stations along the Mexican border.

Attached to the Aviation Section, Signal Corps, October 22, 1915, he completed his flying training at San Diego and received the rating of Junior Military Aviator on June 7, 1916.

Col. Brooks joined General Pershing's punitive expedition into Mexico, served during the operations of the American troops in that country and at the base of the 1st Aero Squadron at Columbus, New Mexico, from June 14, 1916, to January 20, 1917. On temporary duty at the Aviation School at San Diego until March 3, 1917, he then proceeded for duty in Hawaii, conducting to that insular possession the 6th Aero Squadron. He served as Supply Officer of this organization to July 1, 1917, and from that date until he departed for the United States, November 20, 1917, he served also as Department Aeronautical Officer as well as Commanding Officer of this Squadron.

Following temporary duty of several months' duration in the Office of the Chief Signal Officer in Washington, Col. Brooks was ordered, January 2, 1918, to duty at Call Field, Wichita Falls, Texas, organizing and commanding the flying school at that field. On April 5, 1918, he was transferred to Scott Field, Ill., which functioned at that time as a school for aviation mechanics. Col. Brooks organized this station into a flying field and remained there until June 11, when serious injuries received in an airplane accident kept him on sick report for almost two months. From August 3 to November 3, 1918, he was on duty at Henry J. Damm Field, Babylon, L.I., New York, where he was an observer of the Gosport System of flying instruction. He then reported to Brooks Field, San Antonio, Texas, where he commanded the School for Flying Instructors organ-

ized at that field.

On February 10, 1919, Col. Brooks assumed command of Barron Field, Everman, Texas, but remained on this duty for only a brief period, he again proceeding for service in the Hawaiian Department on April 3, 1919. He was on duty as Air Officer of the Hawaiian Department to June 12, 1919, and as Assistant to the Department Air Officer to March 3, 1921. On several occasions he served temporarily as Commanding Officer of Luke Field. He held the position of Executive Officer, Hawaiian General Area Depot, to June 20, 1921, and that of Commanding Officer thereof for a month. He assumed command of Luke Field on July 21st and served in this capacity for one year, following which he was assigned to duty as Air Officer of the Third Corps Area, Baltimore, Md.

In October, 1923, Col. Brooks was assigned as a student at the Air Service Tactical School at Langley Field, Va., and, upon his graduation therefrom in June of the following year, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1925, he was assigned to station at Mitchel Field, N.Y., where he served as Post Operations Officer, in addition to performing various other duties.

A student at the Army War College, Washington, from August, 1926, to June, 1927, Col. Brooks, following his graduation, was detailed as a member of the War Department General Staff, being assigned to duty in the Air Section Training Branch, G-3 Division. On May 7, 1930, he was transferred to the Philippines, assuming command of Clark Field and the Third Pursuit Squadron. Transferred to Camp Nichols, Rizal, P.I., May 15, 1931, he assumed command of this post and of the 4th Composite Group, and remained on this duty until July 27, 1933, when he was again detailed as a member of the War Department General Staff, Washington, and assigned to the G-3 Division.

At this writing, Col. Brooks has exceeded the 2500-hour mark in total flying time.

Col. Brooks held the rank of 2nd Lt. to June 7, 1916; 1st Lieut. to May 15, 1917; Captain to June 9, 1918; Major, National Army, to February 9, 1920; Major, Air Service, from July 1, 1920, to August 1, 1935, when he was promoted to Lieutenant-Colonel.

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MAJOR MICHAEL F. DAVIS, AIR CORPS

Major Michael F. Davis, one of a comparatively small number of officers in

the Air Corps holding all four Air Corps flying ratings, those of Airplane Pilot, Airship Pilot, Airplane Observer and Balloon Observer, was born at New Richmond, Ohio, March 25, 1894. Graduating from the United States Military Academy in June, 1915, he was commissioned a second lieutenant and assigned to duty with the 6th Infantry. On July 1, 1916, he was promoted to 1st Lieutenant; on May 15, 1917, to Captain, and on June 18, 1917, to Major, J.M.A.

Assigned in September, 1916, to the Aviation Section, Signal Corps, for flying duty, Major Davis received his flying training at the Signal Corps Aviation School at San Diego, Calif. He was rated "Junior Military Aviator" on June 18, 1917, which rating was subsequently changed to that of "Airplane Pilot." Prior to reporting at Kelly Field, Texas, November 10, 1917, for duty with the Flying Department, he served with the 1st Aero Squadron. For several weeks he was in charge of the advanced solo stage of flying instruction and, on December 6th, he assumed command of the 50th Aero Squadron, with which organization he sailed for overseas duty on January 9, 1918.

For several months, Major Davis attended flying and aerial gunnery schools in England and Scotland. Between April 27 and May 11, 1918, he was on duty as ferry pilot, flying airplanes from England to France. Between May 12 and June 28, 1918, he served as a flying officer with the 84th and 40th Squadrons of the British Royal Air Force, following which he was assigned to duty at the Third Aviation Instruction Center in France, where he served until the latter part of October, commanding the 33rd Aero Squadron and Field No. 9 until September 2, 1918; the 10th Aero Squadron and Field No. 8 until September 24th, and serving on the School Staff of the Third Aviation Instruction Center to October 29th, when he was assigned to duty at the Aerial Gunnery School, St. Jean de Monts, France. Completing his course at this school on November 15th, he was assigned to the command of the 4th Pursuit Group, 2nd Army, Toul, France.

On May 12, 1919, he reported for duty as student at the School of Artillery Studies at Treves, Germany.

Returning to the United States in July, 1919, Major Davis was assigned to duty as Assistant Chief of Training, Office of the Director of Air Service, Washington, D.C. Serious injuries received in an airplane accident at Bustleton, Pa., confined him to Walter Reed General Hospital for some 15 months.

In January, 1921, Major Davis was ordered to duty at Ross Field, Arcadia, Fla., where he took the course of instruction at the Balloon School, qualifying as a Balloon Observer. He also served as Executive Officer of this

School and, temporarily, as Commanding Officer.

Assigned on April 1, 1922, with the Organized Reserves of the 9th Corps Area, San Francisco, Calif., he served on this duty until the latter part of August, 1924, and at various periods performed the function of Air Officer of the 9th Corps Area. At Scott Field, Belleville, Ill., his next station, Major Davis was a student at the Balloon and Airship School, graduating in June, 1925, and receiving the rating of "Airship Pilot." For the next four years, his duties were associated with school activities, he being a student at the Air Corps Tactical School at Langley Field, Va., from September, 1925, to August, 1926; at the Command and General Staff School, Fort Leavenworth, Kansas, from August, 1926, to August, 1927, and thereafter up to June, 1929, serving as an instructor at the Air Corps Tactical School. For the next two years he was on duty in the Schools Section, Training and Operations Division, Office of the Chief of the Air Corps, Washington.

Transferred to Crissy Field, Presidio of San Francisco, Calif., in July, 1931, Major Davis served as Executive Officer until November 21, 1931, and as Commanding Officer of the post and of the 31st Observation Squadron until March 23, 1933, when he was transferred to the Hawaiian Department, where he performed the duties of Wing Operations, Training and Communications Officer of the 18th Composite Wing at Fort Shafter, T.H.

Upon the completion of his tour of duty in Hawaii, Major Davis was transferred to Washington, D.C., and assigned on April 1, 1935, to his present position as Assistant Executive, Office of the Chief of the Air Corps.

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ATTACK TRAINING AT LANGLEY FIELD

Contamination of airdromes has been one of the high lights in recent training activities of the 37th Attack Squadron at Langley Field, Va. Results obtained on panels arranged in areas approximately 300 yards long by 100 yards wide proved satisfactory and indicated the extent of possible contamination by a flight of Attack airplanes on exposed material and personnel. These panels were set out on strange airdromes and the attacking flight was allowed only one attack. Locating and spraying panels under these conditions made these problems both interesting and instructive.

One chemical tank, type B-1, with 10 gallons of lime water was used by each airplane on each attack. The mission was performed by one element of three planes.

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Capt. Oscar L. Rogers, serving a detail with the Organized Reserves, 5th Corps Area, Columbus, Ohio, has been ordered to Chanute Field, Rantoul, Ill., for duty.

V-6988, A.C.

QUESTIONS AND ANSWERS

It is proposed to carry in the News Letter a column under the above caption for such time as appears desirable to reply to a number of questions which have been propounded to the Office of the Chief of the Air Corps. Several officers have suggested to the Office, Chief of the Air Corps, and to individual Air Corps officers that, in order to secure uniformity, questions which arise rather generally in the minds of Air Corps personnel, and of others interested in military aviation, be answered in a way that meets with the approval of the Chief of the Air Corps. This procedure will tend to crystallize opinion upon these points within the Air Corps and to enable those to whom such questions are propounded to give answers which will conform to approved indoctrination.

Q. 1. What is the basic policy of the United States with respect to the organization and control of its military aviation?

A. 1. U.S. military aviation is primarily organized into two principal components, one as a branch of the United States Army and the other as an arm of the United States Fleet. These components are controlled by the War Department and the Navy Department, respectively.

Q. 2. Would the placing of military aviation under a Department of Air be preferable to the present set-up in the United States?

A. 2. Both the War Department and the Navy Department are definitely opposed to this. Under our form of government it could not be done unless an overwhelming majority of the personnel of the air components of both the Army and the Navy advocates it. The coordination of three national defense agencies would be extremely difficult. The present Chief of the Air Corps is opposed to a Department of Air.

Q. 3. What is the organization and purpose of the G.H.Q. Air Force?

A. 3. It is a grouping under a single commander of all the tactical air units of the Army in the continental United States, except Corps and Army Observation squadrons. The purpose in doing this is to secure uniformity of tactical doctrine, method and training as among the component units of the same class, such as Bombardment, Pursuit, Attack and long-range Observation. The further purpose is to make a single individual responsible for the combat efficiency of the Army Air Force and for the preparation of plans for its employment under various assumed conditions of war employment.

Q. 4. What are the provisions for cooperation between the air units of the Army and Navy?

A. 4. This is covered quite fully in the confidential publication "Joint Action of the Army and Navy," and by the preparation of Joint Army and Navy plans, including plans for Special and Grand Joint Exercises. Consult also letter of the Chief of Staff, dated October 17, 1934, on the subject "Doctrines for the Employment of the GHQ Air Force," marked "For Official Use Only."

Q. 5. What are the strategic areas of the United States from the standpoint of air operations?

A. 5. The Panama Canal Zone, Hawaii, Alaska, and those portions of the continental United States which lie along Great Circle Routes from the territory of the nearest first class powers.

Q. 6. What is the policy of the War Department as to the employment of air units in coast defense?

A. 6. To provide the local observation which will aid in warning of the approach of an enemy and in the direction of artillery fire against such enemy. In case of a major attack against the coast, to employ the GHQ Air Force, or such part of it as may be necessary, to prevent hostile landing on our shores. This subject is covered more fully in the publication "Joint Action of the Army and the Navy."

Q. 7. What is the War Department policy as to the handling of ground anti-aircraft defense in its relationship to air operations?

A. 7. The anti-aircraft Artillery, which comprises the major element of ground anti-aircraft defense, is under the administration of the Coast Artillery Corps. Therefore, cooperation with air units would be in accordance with the plans of the commander of all the forces involved. Assignment of both air units and anti-aircraft Artillery will be in accordance with prepared plans which will provide for the method of control and cooperation. The lack of adequate resources, both in aircraft and anti-aircraft Artillery, has prevented the formulation of any extensive plans for its employment in connection with the defense of localities, except in the cases of the overseas possessions.

Q. 8. What is the War Department's program with reference to the establishment of new Air Corps stations in the continental United States?

A. 8. As a result of the Wilcox legislation (Public No. 263, approved by the President, August 12, 1935), the War Department appointed a Special Committee

on Air Bases, comprising representatives of War Plans, G-3 and G-4 Divisions of the General Staff, the Office of the Chief of the Air Corps, and the General Headquarters Air Force, and gave the Committee a directive to make a comprehensive and intensive study of air base requirements and to make recommendations to the Secretary of War designed to carry out the Committee's conclusions. Results of the work of this Committee were directed to be maintained as confidential until released by the Secretary of War. To date this release has not been made.

Q. 9. What is the role of the various classes of aviation comprising the General Headquarters Air Force?

A. 9. The role as governed by the characteristics and performance of the aircraft of each class is concisely stated in Training Regulations 440-15. The role as regards GHQ operations will be controlled by the operating plans prepared for each individual operation. Naturally, these roles will be consistent with the general role for which the aircraft in any class is designed and for which the personnel of such class is trained.

Q. 10. What is responsible for the present shortage of airplanes in the Army Air Corps?

A. 10. The greatest contributing factor is the suspension of airplane procurement, which occurred during the fiscal year 1934, as a result of a request from the Congress to suspend procurement until procurement methods of the Army Air Corps could be adequately investigated. This delay resulted in the loss of practically one year in time in the fabrication of new airplanes. Probably the next factor in importance is the rapid development in the size of airplanes and the amount of their equipment. This, together with a constant effort to increase performance, has resulted in a considerable increase in unit cost of airplanes and motors. Many other factors have contributed, among which may be mentioned the fact that, due to the specialized nature of military aircraft and the limited production of any one type of airplane, manufacturers have been prevented from engaging in volume production.

Q. 11. How may civic bodies, such as Chambers of Commerce, Exchange, Kiwanis, Rotary Clubs, etc., cooperate with the War Department in securing an adequate air defense?

A. 11. By aiding in every manner possible the establishment and improvement of commercial and civil airports throughout the strategic areas of the United States and along transcontinental and connecting airways, in order

that ample operating bases and airways facilities may be available to the Air Force in a war emergency. More indirectly they may aid by sponsoring educational programs which will stimulate the interest of the public in commercial and private aviation with a view to providing a larger reservoir of airplanes and trained pilots from which the national defense may draw in the event of an emergency.

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OFFICERS OF OTHER ARMS STUDY AIR TACTICS

Six officers from other branches of the service were detailed for duty at Scott Field, Belleville, Ill., for the period from April 1st to 14th, for the purpose of studying Air Corps tactics. These officers are Major William L. Brown, 1st Lieut. Roscoe C. Huggins and 2nd Lieut. Thomas R. Clarkin of the 6th Infantry at Jefferson Barracks, Mo.; Captain Hamilton P. Ellis and 2nd Lieut. Williard G. Root of the 61st Coast Artillery (Anti-aircraft), Fort Sheridan, Ill., and 2nd Lieut. Harold L. Richey, 14th Cavalry, Fort Sheridan, Ill.

Six additional officers from other branches of the service will report to Scott Field for similar training during the period April 16th to 30th, namely: Captain Wayne C. Smith, 2nd Lieuts. Lawrence K. White and Oren E. Hurlburt, of the 6th Infantry, Jefferson Barracks, Mo.; Captains Vincent J. Conrad and George H. Passmore, of the 2nd Infantry, Fort Sheridan, Ill., and Captain Kenneth J. Hoge, 14th Cavalry, Fort Sheridan, Ill.

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POPULAR FLIGHT SURGEON PASSES AWAY

At 2:00 p.m., on Sunday, March 28th, a four-ship V formation roared over Felts Field, Spokane, Washington, the station of the 41st Division Aviation, Washington National Guard.

It was not intended to be that kind of a formation, but the hobby of the late Captain John L. Walter, pilot and squadron flight surgeon, made it that way. The vacancy in the formation was in respect to Captain Walter, whose ashes were flown with ceremonies to the summit of Mount Spokane, where they were spread as the deceased officer requested they be.

A Chicago medical student, Captain Walter joined the 41st Division Aviation about seven years ago. He was an eye, ear, nose and throat specialist. After attending the Flight Surgeon's School, he returned to the Division Aviation, determined to satisfy his ambition to become a pilot.

In this he succeeded, and he was an A.P. and J.A.O. at the time of his death. Dur-

(Continued on page 24).

WAR DEPT., ORDERS AFFECTING AIR CORPS OFFICERS

Changes of Station: To March Field, Calif.:

Captain Harold R. Rivers, upon completion of tour of foreign service. Orders assigning him to Bolling Field amended. - Major Walter K. Burgess, Engr. Officer, A.C. Technical School, Chanute Field. Relieved from temporary rank August 10, 1936. - Captain James T. Curry, upon completion of course of instruction at Command and General Staff School, Fort Leavenworth, Kansas. -

To Chanute Field, Ill.: 1st Lieut. Carl W. Carlmark, from Hawaiian Department. - Captain Robert E.L. Choate (1st Lt.) 49th Bomb. Sqdn., Langley Field, Va., for duty as student in Communications Course, A.C. Technical School. Relieved from temporary rank Aug. 18, 1936. - 1st Lieut. Ray W. Clifton (2d Lt.) 5th Bomb. Sqdn., Mitchel Field, N.Y., for duty as student, Airplane Maintenance Engineering - Armament Course, A.C. Technical School. Relieved from temporary rank, August 17, 1936.

To Barksdale Field, La.: Capt. Lewis S. Webster, on duty with Org. Reserves, 6th Corps Area, Chicago, Ill., to duty with GHQ Air Force.

To Materiel Division, Wright Field, Ohio: 1st Lt. James L. Jackson, Air Corps Detachment, Ft. Leavenworth, Kansas. - Capt. Charles W. O'Connor (1st Lt.) Engineer Officer, Air Depot. Relieved from temporary rank upon date of departure from Philippines. - Major Ralph B. Walker (Capt.), San Antonio Air Depot, Duncan Field, Texas. Relieved from temporary rank June 12, 1936.

To the Philippines: 2nd Lieuts. Jerome E. Blair and Stanley J. Donovan, upon completion of course of instruction at Advanced Flying School, Kelly Field, Texas, sailing Oct. 8th. - Major Thomas J. Voss, C.O., 42nd Bomb. Sqdn., Kelly Field, Texas, sailing about June 23rd.

To Randolph Field, Texas: Major Thomas W. Hastey, from Philippines, for duty at the Air Corps Training Center.

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TEMPORARY PROMOTION OF AIR CORPS OFFICERS

To Captain:

1st Lieut. Warren H. Higgins assigned as Flight Commander, 20th Bombardment Squadron, Langley Field, Va., April 12, 1936.

1st Lieut. Richard D. Reeve assigned as Intelligence and Operations Officer, 48th Pursuit Squadron, Chanute Field, Ill., April 6th.

1st Lieut. Millard Lewis assigned as Operations Officer, Station Complement, Hamilton Field, Calif., April 5, 1936.

1st Lieut. Sam W. Cheyney assigned as Flt. Commander, 3rd Pursuit Squadron, Clark Field, P.I., March 31, 1936.

1st Lieut. William M. Morgan assigned as Intelligence and Operations Officer, 3rd Pursuit Squadron, Clark Field, P.I., March 31.

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The following changes in duty assignments of officers holding temporary increased rank have been made:

Major Virgil Hine (Captain) relieved from duty and temporary rank, 95th Attach Squadron, March Field, and to report to Commanding Officer of that field for assignment to duty

with GHQ Air Force, March 24, 1936.

Captain Stoyte O. Ross (1st Lt.) from duty with 36th Pursuit Squadron to duty as Flight Commander, 35th Pursuit Squadron, Langley Field, Va., March 29th; retains temporary rank.

Captain Frederic E. Glantzberg (1st Lt.) relieved as Flight Commander, 20th Bomb. Sqdn., Langley Field, and assigned as Intelligence and Operations Officer of that Squadron, March 25th; retains temporary rank.

Captain Jack Greer from duty with GHQ Air Force, Langley Field, to duty with Flight A, 16th Observation Squadron.

1st Lieut. George L. Murray, Barksdale Field, from duty with GHQ Air Force to duty with Station Complement.

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PANAMA-BOUND BOMBERS SERVICED AT DUNCAN FIELD

"A splendid and inspiring sight," says the News Letter Correspondent from the San Antonio Air Depot, "were the nine new Bombers, B-10-B's, as in perfect formation they thundered in and swept down to land at this Depot on the afternoon of March 24th on their ferry flight from Langley Field, Va., to the Panama Canal Department. The personnel of the flight consisted of Lieut.-Colonel Charles B. Oldfield, Flight Commander; Major Barney M. Giles, Deputy Commander; Major M.S. Lawton; Captains A.Y. Smith, J.T. Sprague, A.L. Harvey, J.E. McCormick, E.R. Todd, Wm. C. Bentley, Jr., 1st Lieuts. J.H. Ives, Wm. O. Senter, 2nd Lieut. J.B. Stanley; and a total of 18 enlisted men. Major Samuel E. Brown, M.C., of March Field, Calif., piloted by Captain Wentworth Goss of that field, arrived at the Depot on March 24th to join the Flight as its Flight Surgeon. Captain J.E. Bodle has preceded the Flight as its Advance Officer. The planes were serviced and given minor repairs at this Depot, and took off on the morning of March 26th for the next stop, Brownsville, Tex."

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DAMAGES BY FLOOD KEEP ROLLING FIELD MEN BUSY

While still apparent, the damaging results of the recent flood are rapidly being eradicated by the continuous efforts and overtime work of the post personnel of Bolling Field, D.C. It will probably be days before the unsightly conditions, left by the crude oil, can be entirely removed. There was little, if any, loss to technical property or equipment. However, much of the unmovable electrical installations, as well as central heating plant facilities, were destroyed, and are gradually being put back in shape.

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BOLLING FIELD PERSONNEL IN ARMY DAY PARADE

Personnel of Bolling Field, D.C., took active part on April 6th, in the Army Day Parade held on Constitution Avenue in Washington. A Boeing P-26 airplane, mounted on a flat trailer, trimmed with Air Corps colors and surrounded by a marching squad of soldiers, made an impressive float.

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SPORTSMANSHIP REACHES TOP IN THE ARMY

The following article, written by Pvt. A.D. Carter, 46th School Squadron, Randolph Field, Texas, and published in a recent issue of the San Antonio LIGHT, is reprinted here as being of general interest:

"Offering a sharp contrast in this age of proselyting and professionalism, the soldier-athletes of Fort Sam Houston and the surrounding army flying fields form probably the largest group of real amateur sportsmen in the country.

Uncle Sam's khaki-clad athletes conform to the amateur standard in its highest sense, and far from realizing glory or financial gain from their efforts, sometimes undergo discouraging difficulties in engaging in team sports.

The soldiers enjoy no such luxuries as training tables and cross-country athletic jaunts; they risk serious injury in the bodily-contact games as played in the rough do-or-die army method; and their pay is no more than that of any other soldier.

The nectar of competitive athletics, the cheers of the crowd, is usually denied them. They perform before critical army audiences that are sparing with applause and adept with raspberry. And in the barracks they find no hero-worship.

And still, with no lure but the love of the game and the thrill of competition, literally thousands of San Antonio's soldiery turn out to participate with surprising skill in every sport from ping-pong to parachute jumping.

Which proves something."

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LARGE CONTRACT FOR AIRCRAFT ENGINES

The Secretary of War, Hon. George H. Dern, recently announced the placing of an order with the Pratt and Whitney Aircraft Manufacturing Corporation, East Hartford, Conn., for 200 new aircraft engines. The total contract amounted to \$1,877,030. The purchase of this quantity of engines at this time parallels the recently awarded contract for new Attack airplanes.

These engines, known as the Pratt and Whitney R-1535-13, are a 14-cylinder air-cooled two-row radial type. The use of the two row radial feature allows a considerable reduction in head area over the single-row radial engine of corresponding horse power. This allows an increase in speed of the airplane in which the engine is installed.

These engines will be used for installation in and spares for 100 new all-metal single-engine Attack airplanes now being constructed by the Northrop Corporation of Inglewood, California.

This engine is a result of the cooper-

ative efforts of the engineering staff of Wright Field, Dayton, Ohio, and the Pratt and Whitney Company engineers, and, in accordance with the established practice of the War Department, have been thoroughly tested by the Air Corps at Wright Field, Dayton, Ohio.

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37TH ATTACK STANDS HIGH IN BOMB DROPPING

The 37th Attack Squadron, Langley Field, Va., claims the title of having dropped the highest number of live bombs (TNT loaded) in the last six months: Demolition bombs, 20-lbs., to the total of 1420 were dropped by this Squadron since September 1st. This figure does not include a large number of 30-lb. fragmentation and 40-lb. chemical bombs which were dropped in conjunction with and demonstrations for the Ordnance Department.

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HAWAIIAN RESERVE OFFICERS INSPECT DEPOT

On a Saturday afternoon, recently, about seventy Reserve officers residing in or near Honolulu, came to Luke Field for one night's encampment. Luke Field and the Hawaiian Air Depot welcomed these officers and were only too glad to have the opportunity of showing them the functions of a tactical squadron and to explain the inner and hidden workings of the Depot. On Sunday morning, Lieuts. Bonner and Henley conducted the officers through the Depot, where they were shown the different stages through which an airplane went while undergoing a major overhaul. Demonstrations by Mr. Miller of flotation equipment and engine tests were also presented. Mr. Coning, himself a Captain in the Reserve and acting in the capacity of civilian assistant to Captain Kane, Depot Supply Officer, gave a talk concerning that department.

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CAPTAIN WALTER (Continued from Page 4)

In recent months he devoted much study to the development of a helmet with radios that would be more comfortable and serviceable to pilots. At the last Flight Surgeons' Convention, he displayed this helmet and lectured thereon. He also wrote a paper regarding the helmet, which was to have been printed in a medical magazine.

In addition to his duties as Flight Surgeon, Captain Walter was also the Department of Commerce physician for pilots of the Spokane-Inland Empire region. His duties as Flight Surgeon are now being performed temporarily by Captain Wilfred Newman, of the 161st Infantry regiment. Captain Walter's business associate in private practice. A new Flight Surgeon for the 41st Division Aviation has not yet been appointed.

Notes from Air Corps Fields

to Luke Field, T.H., March 17th.

23rd Bombardment Squadron: The contact course at Waimanalo entered on its third week with Lieuts. Altman and Summerfelt as the latest students. Captain Ladd and Lieuts. Bunch, Coddington and Armstrong have all completed their week's stay and are thoroughly familiar with present position, predicted position, fuze spots and other words and phrases dear to the Artillery.

The Squadron gave a farewell dinner to Privates Pratt and Nelson on March 16th. The men have been with the squadron two years, and their loss will be regretted.

72nd Bombardment Squadron: Lieuts. John J. Hutchison, Charles H. Pottenger and M.L. Callish have been at Waimanalo as contact officers learning something about anti-aircraft firing.

4th Observation Squadron: The radio section has turned into a construction gang and will soon have a room for battery charging and storage.

50th Observation Squadron: Recent promotions among the officers of this Squadron have cut the number of regular 2nd Lieutenants down to two, while the number of 1st Lieutenants has been increased to six, and there has been a slightly fluctuating curve in the upward direction in the number of officers of higher rank. Among those who climbed another rung of the ladder to the "Stars," representing the rank of General, are the following: Captain John G. Fowler, 1st Lieuts. Harry S. Bishop, Edward D. Marshall, Carlyle W. Phillips, Marshall Bonner, all of whom received their promotion by War Department Order, dated February 16, 1936.

The old paint shack, formerly the business place of one Raymond Neander, dope and fabric man of the 50th, has been torn down. A larger and more modern studio has been built to replace the old structure. Bomber crates and old scrap lumber, gathered from place to place, is the only material used in this structure. Michael Angelc Neander, the old maestro, has already begun to decorate his new work house by painting a hula gal meditating on the beach a few hundred yards this side of Diamond Head.

Hawaiian Air Depot, Luke Field, T.H.

After many overhauls, hastened in no small way by the rough landing area at Luke Field, work has been started on a landing mat. The contract, totaling approximately \$103,000, was let to Mr. Moses Akiona of Honolulu. The mat will be of macadam, 2500 feet in length by 300 feet in width. It is hoped that the mat will be ready for use before the expected arrival of new aircraft in this Department. However, the airplanes are needed very badly and, mat or no mat, they will be most royally welcomed.

Mr. Arthur W. Burt, machinist, arrived in Hawaii early in March to accept a position with this Depot. He comes from Detroit, where for many years he was closely identified with the automotive industry.

Messrs. Bell, Ervin and Barry returned on

the ST. MIHIEL after extended leaves enjoyed in California and points east.

Langley Field, Va., April 1, 1936.

8th Pursuit Group Headquarters: 1st Lieut. Earl W. Hockenberry was relieved of the command of the 8th Pursuit Group Headquarters and of the duties of Adjutant of the Group and transferred to the Station Complement. The duties performed by Lieut. Hockenberry were taken over by 1st Lt. John E. Barr, who arrived at the field on March 16th from a tour of duty in the Philippines.

33rd Pursuit Squadron: A new addition to the Squadron - not an All-American halfback this time, but a future All-American beauty queen - was born to Captain and Mrs. Harry E. Wilson on March 7th. Both mother and daughter are getting along very well, and it is already reported that the bouncing baby girl would take first prize in any baby contest. Squadron wagers are many as to whether she is a future Amelia Earhart or not.

Marshall A. Elkins received his commission as 2nd Lieut., Air Reserve, on March 1st. Congratulations, "Red," and may your work as an officer be as excellent as that exhibited as a Cadet.

An injury on the field of battle was received by Richard Cornwallis Weller. Playing squash in the "Tournament of the Aged," he turned his ankle and was laid up in quarters a few days. Don't let his injury mislead you. We will still match him with your best.

John F. Bledsoe, Jr., resigned his active duty on March 4th to accept a position with American Airlines at Fort Worth, Texas. We lost a good man, and we feel sure that he will make good with the Airlines.

Donald G. Ogden finally returned from winter maneuvers. We thought for a while he had mistaken his orders to read summer instead of winter.

Cadet C.T. Edwinston, transferred to Barksdale Field, La., received his commission on March 1st, and it is understood he was assigned to the 55th Pursuit Squadron at that field.

The last two weeks left us with a few changes, the most important one being the temporary rank conferred upon our squadron commander, Major George F. Schulgen. Our congratulations. Major Schulgen was always a firm believer in Pursuit Aviation, and lately he has been proving its worth as a combat unit. He has been leading the Squadron on gunnery missions every day, and we have been trying to show that the squadron as a unit can fire on a target from long range and still have over 75% of hits on a small target. The results have been even better than expected.

The men who say there will be no place for Pursuit in the next engagement will have a hard time trying to convince us of that fact.

Second Lieut. Joseph D. Lee, Jr., Air Reserve, in addition to his job as Communications Officer, was recently assigned as Assistant Engineering Officer. As an understudy to 2nd Lieut. Richard C. Weller he is getting along very nicely.

35th Pursuit Squadron: Flying Cadets John H. Jeffus and Walter J. Garrison completed their one-year active duty as Cadets and were commissioned second lieutenants in the Air Reserve. They will remain on active duty with this squad-

ron.

Second Lieut. H.G. Robinson, Air Reserve, resigned his active duty to accept an Airline position.

Operations on the firing line were quite active of late, the officers devoting most of their flying time to Gunnery and Exercises connected therewith, averaging three hours per day per pilot. The Exercises consisted of long range formation firing, requiring the use of both 50 and 35 caliber machine guns.

Second Lieut. C.B. Harvin, who has been stationed at Pittsburgh, Pa., on active duty during the absence of the Regular officer in charge at that station, participated in very active duty during the recent flood conditions of that section, dropping food and supplies to the needy.

Second Lieut. E.F. Williams married recently, and his fellow officers presented the happy couple a beautiful silver gift, adding best wishes for their continued happiness.

First Lieut. S.O. Ross, recently promoted to Captain, will remain on active duty with this organization.

36th Pursuit Squadron: Flying Cadet William M. Reeder, enroute to Atlanta, Ga., on a cross-country training mission, was fatally injured on Saturday, March 7th, while taking off from Pope Field, Fayetteville, N.C. Cadet Reeder graduated from Georgia Tech in June, 1934, and entered the July, 1934, Class at Randolph Field. Upon graduation from Kelly Field, he was ordered to Langley Field and attached to this Squadron for tactical training.

The officers and enlisted men of this organization, as well as the other personnel of this field, regret very much the unfortunate accident, and wish to express their sympathy to Cadet Reeder's relative and host of friends.

58th Service Squadron: On March 4th, the Squadron gave a smoker in honor of Master Sergeant, Frank LaChance, who was placed on the retired list on February 29th, after 30 years of service in the U.S. Army. The organization turned out in force. In addition, a number of the older noncommissioned officers of the post aided in giving Sergeant LaChance a rousing farewell and many congratulations on his well earned retirement.

Sergeant LaChance first entered the service on February 26, 1901, and served in the Cavalry, Coast Artillery Corps, Quartermaster Corps and the Air Corps. He participated in the World War, serving his country as a commissioned officer.

20th Bombardment Squadron: Second Lieut. John F. Biggerstaff, Air Reserve, reported on March 1st, and was assigned to this Squadron for six months' active duty.

Two Flying Cadets of this organization were recently commissioned 2nd Lieutenants in the Air Reserve and given a year of active duty. We offer our congratulations to 2nd Lieuts. Arthur H. Rogers and Raymond V. Schwanbeck.

Two Flying Cadets, Clarence K. Longacre and Chris H.V. Rueter, recent graduates from Kelly Field, were assigned to this Squadron.

Operations conducted by this organization during the past two weeks were in accordance with Training Schedules No. 22 and 23, Hqrs. 2nd Bombardment Group, GHQ Air Force.

37th Attack Squadron: The Commanding Officer, Ned Schram, was appointed Major (temporary rank). The Squadron now pursues its activities with a new smartness.

The 37th is grooming its seven A-8 Attack airplanes in order to commence the target season with a full complement of airplanes. A study of the new Training Regulations 440-40 points to a long drawn out season of varied phases of chemical, fixed and flexible gunnery.

The Armament Department has gradually overhauled its equipment in order to assure positive functioning as the season gets under full swing. Sights are being modified in order to increase the number of hits, and the various accessories of the fixed guns are minutely gone over to eliminate excess friction and easier charging.

The Engineering Department is pulling its hair and losing sleep in trying to devise ways and means to obtain more flying hours off the Prestone-leaking, wheezy and many times overhauled engines. It is estimated that not less than 14 engines will be required during this season. With the grace of all concerned and the Middletown Air Depot, the season should wind up early in December.

The 12 enlisted men of this Squadron, who took part in the Winter Test Maneuvers, are still talking about the good time that was had by all - the good chow, free entertainment, northern hospitality, and the short working hours. In all, they can paint a pretty picture which the stay-at-homes recognize as a smoke screen to be used at some later date in obtaining volunteers for some disagreeable detail. Not one of them, under the most severe cross examination, has broken down and confessed to the least hardship. The snow which we have seen in some of the pictures is claimed to have been a necessity to horse play and soft down to recline in, while the ships were out attacking and searching for the elusive enemy. The 24-hour journey in reconnaissance cars from Concord, N.H., to Mitchel Field, is claimed to have been a well-conducted tour for their special benefit, in order that they might enjoy the snow-covered scenery of the New England States. They also mention the exceptional consideration given them by the convoy in backtracking through the Bronx, Harlem and downtown New York, in order that they might have a true picture of the largest city in the world and how one can get through the city by merely driving under the elevated and following close behind the trolleys. It is said that murder will out, and we will patiently wait until the true conditions are brought forward in a moment of weakness by one of the clique.

The Squadron feels the loss of Staff Sgt. Earl Miller, who transferred to the Ordnance Department and was ordered to the Philippine Department to bring back the "Good Old Flag." Much luck - Lapu Lapu.

The ranks of the Benedicts were increased by two of our members. May all their troubles be little ones.

An instrument flight to Maxwell Field in a C-4A by a well balanced crew will be a much discussed question as to its successful outcome until it is known who flew and for how long a time. The crew

comprised Captains Schramm (C.O.); Grussendorf (Engineering Officer); Wolfinbarger (Operations Officer) and Lieut. Zimmerman (Adjutant), the rest of the organization being left behind so as not to crowd them for space.

Two Flying Cadets, Thomas and Eubanks, were commissioned second lieutenants in the Air Reserve. The Squadron welcomes the two brand new lieutenants and wishes them the best of luck.

The Squadron welcomes two additional pilots, Cadets John Eakin and Earl Willoughby, who have just reported for duty after graduation from Kelly Field.

Every individual of this activity is continually scanning the horizon for the much discussed A-17 type airplanes, commenting on its ability to go places and do things, a spirit that the 37th is noted for. But so far we only hear rumors as to when, where and why. Surely, each day brings us closer to our new steeds.

Scott Field, Belleville, Ill., March 16th.

During the past few months the Engineering Department has done a small amount of manufacturing, many of the manufactured items being sent direct to the stations where they will be used. The most interesting items include 100 flying helmets lined with lamb shirling for use in winter flight test work; 200 type A-5 tow targets; 50 jungle emergency landing kits for use in tropical jungle regions where pilots might be required to make a landing. The jungle kit includes the following useful implements: .45 pistol with ammunition, matches, compass, machette and rations. These kits are built so that they can be substituted for the cushion seat of a parachute. Other items are 12 show cases for the Wright Field Museum; 107 parachute flare adapters, type M-8; and 2,600 bin ticket holders for the Hawaiian Air Depot.

On March 14th, the 9th Airship Squadron posed for photographs. These photographs, posed especially for the GHQ Air Force Headquarters, show the various component sections of an airship squadron, viz: headquarters, communications, defense, maneuvering, transportation, supply and miscellaneous sections.

The Scott Field enlisted men staged their second 49er's Party on March 28th with great success. This year's party had many new features, though it was built around the same idea - an 1849 gold rush community. All enlisted artists were called upon to produce large colored drawings descriptive of the life and times of 1849. The party was replete with high sheriffs, deputies, a justice of the peace, a calaboose, rusty sixshooters, walrus mousethatches, knee boots, celluloid collars, red flannel undershirts, cowboy accoutrements, hoop skirts, tin-pan alley music and inflated mining camp money.

Bolling Field, D.C., April 9th.

Personnel at this station are awaiting the arrival from the Douglas factory at Santa Monica, Calif., of two new bi-motored Transport airplanes, similar to the one now in service as the flying office of Major-General Frank M. Andrews, Commanding General of the GHQ Air Force at Langley Field. The two new planes will be permanently assigned to this

station, and will be for the use of the office of the Secretary of War. Members of this command who departed by rail for Santa Monica on March 7th to take delivery on the new planes include: Captains W.L. Ritchie, G.W. McGregor, H.R. Baxter and J.W. Persons, Tech. Sgt. R.W. Hooe, Sgt. W.B. Heffman, Corporals Droter and King, and Privates Mead and Moore.

The slow, tedious progress of a large holly tree, long a familiar landmark in this vicinity, which is being moved on rails from its former position on the east river bank, is being watched with interest. The tree is reported as being one of the oldest in this section, and tradition has it that it has been on the river bank since the days of George Washington. It will be replanted along the roadway near the Officers' Mess.

Patterson Field, Fairfield, Ohio, April 7th.

Major H.W. Flickinger, our Depot Engineering Officer, is at present undergoing repair and overhaul at Walter Reed General Hospital. After passing from clinic to clinic, we know that when "Flick" returns he will be able to appreciate the feelings of an airplane going through his own shops and, anticipating sarcastic remarks, we hope the results are better.

Captain R.H. Kelly, of Hamilton Field, Calif., is spending a few weeks at the Depot recovering from a forced landing, that is, the airplane is being repaired and Captain Kelly is just spending his time waiting. It all came about as a result of a combination of bad weather and loss of radio reception which caused him to become lost and land at Shelby, Ohio. However, with the help of a pair of propellers borrowed from Wright Field, he was able to fly the airplane, a B-10B, to Patterson Field. As soon as the flood waters subside at the propeller factory, we will be able to send him on his way.

Two "big engine men," the Depot Engineering Officer and his Assistant, were stuck at Mitchel Field for a week, due to engine trouble. After having the engine taken apart, piece by piece, and put together again, the same way, they were able to limp into Bolling Field, but had to borrow an airplane from that station in order to fly back to Patterson, as the sick engine refused to get well.

Selfridge Field, Mich., April 2nd.

Captain Oakley G. Kelly, with his assistant, Staff Sergeant Blair, from Patterson Field, Ohio, spent the period March 23rd to 27th, inspecting the technical equipment at this field.

Captain Daniel C. Doubleday departed for duty at his new station, Wright Field, O., on March 31st. He has been stationed at Selfridge Field since June, 1932.

San Antonio Air Depot, Duncan Field, Texas.

The personnel of the Depot were greatly pleased to receive a visit from Brigadier General A.W. Robins, Chief of the Air Corps Materiel Division, and Major T.H. Chapman, Chief, Inspection Branch, Materiel Division, March 23 to 26, on their inspection tour by air from Wright Field to Maxwell Field, Ala.; Barksdale Field, La.; the Air Corps stations

at San Antonio, and thence to the West Coast, from Rockwell Field to Seattle. They were greeted by a host of old friends in this vicinity, as General Robins was formerly Commanding Officer and Major Chapman was at one time Operations Officer of this Depot.

We regret to report that our Commanding Officer, Colonel John H. Howard, has been sick in quarters since March 31st. It is hoped he will be up and around again within a few days.

Majors J.B. Carroll and W.K. Burgess of Chanute Field, Ill., arrived at this Depot in an O-19B, to secure an A-12 for their station, Maj. Burgess ferrying back the A-12, and Major Carroll returning in the O-19B on April 3rd.

The San Antonio Air Depot, particularly its Engineering Department, has proved of great interest to visiting groups of students on several occasions. On March 28th, about 200 members of the Student Branches in the Southwest of the American Society of Mechanical Engineers, then holding their annual spring meeting at the University of Texas, Austin, visited San Antonio, and at a special point on their itinerary made a tour of inspection through the Depot Engineering Shops. The group was in charge of Prof. H.E. Degler, Chairman of the Department of Mechanical Engineering, University of Texas, and Mr. M.L. Begeman, Honorary Chairman of the Student Branch, American Society of Mechanical Engineers, and included representatives from the University of Texas, A. & M. College of Texas, Texas Technological College, Rice Institute, Southern Methodist University, University of Oklahoma, A. & M. College of Oklahoma, and the University of Arkansas. A visit was scheduled for April 4th of about 25 young men of the Senior Aeronautical Engineering Class of the North Texas Agricultural College, Arlington, in charge of Mr. Fred L. Snavely, Instructor of Aircraft Mechanics at that institution, who will include this Depot in a tour of various Air Corps stations in the vicinity of San Antonio.

41st Division Aviation, Wash. National Guard.

"Beat this one, if you can."

Staff Sergeant John Simpson hasn't issued this open invitation to a contest to the Air Corps, but his backers, the 41st Division Aviation, Felts Field, Spokane, Wash., have issued it for him. The little Regular Army sergeant, instructor attached to the 41st Division Aviation, and Mrs. Simpson, are the parents of two future "generals."

"Pete" and "Repeat", as Sergeant Simpson calls them, are twin boys about two weeks old, raising the Simpson family to a girl and two boys. Sergeant and Mrs. Simpson have already started the boys on a military career, which began with their official naming. Prior to the present Regular Army Instructor, Captain Robin Alexander Day, the Instructor was Capt. Robert Gale Breene, now at the Command and General Staff School, Fort Leavenworth. Today, Cpts. Day and Breene have name sakes.

Twin No. 1 -- "Robin Alexander" Simpson

Twin No. 2 -- "Robert Gale" Simpson.

"The doctor came out and said he thought it was going to be triplets," said Sgt. Simpson.

"Say, Doctor, can't you make it five? The government might build a hospital for them," replied a sergeant on the alert.

On April 8th, Major General Oscar Westover, Chief of the Air Corps, made a visit to the Sikorsky factory at Bridgeport, Conn., returning the same day.

Lieut.-Colonel Arnold H. Hoggstad returned on April 8th from a navigation flight to Mitchel Field.

Major Otto G. Trunk returned April 5th from a flight to Mitchel Field.

Major Carl W. Connell made an extended flight to Scott Field, Ill.

Captain Alvan C. Kincaid left April 12th for temporary duty at Wright Field, Ohio.

Captain Francis H. Vanderwerker, formerly on duty in the Patents Section and now stationed at Wright Field, was on temporary duty in the OCAC for a brief period.

During the period of his leave of absence, Captain Herbert K. Baisley is giving a course of lectures at Harvard University on geographical explorations from the aeronautical point of view.

Captain Guy H. Gale, on duty with the Indiana National Guard Air Corps at Indianapolis, was a recent visitor during the course of a navigation flight.

Captains Donald B. Stace and Stewart W. Towle are now on leave of absence.

Recent visitors to the Office of the Chief of the Air Corps during the course of navigation flights were Lieut.-Colonel Carl Spatz, Captains J.P. Hodges and Vincent J. Meloy, students at the Command and General Staff School, Fort Leavenworth, Kansas; Captains E.H. White and Walter E. Richards, from Boston, Mass.; Major Devereux Meyers, from Hamilton Field, enroute to the Martin aircraft factory on a ferrying mission; Major Charles H. Howard, from Langley Field; Captain John F. Wadman, from March Field; Captain Frank M. Paul, from the Coast Artillery School, Fort Monroe, Va.; and Captain Earle G. Carpenter from Mitchel Field, N.Y.

Fort Sill, Oklahoma, April 8th.

The advent of Spring finds Post Field at Fort Sill, Okla., fairly swarming with activity and brings closer the completion of rebuilding work begun sometime ago at this station.

Old hangars are being razed as rapidly as they can be dispensed with, which improves the approach to the landing field from the North and Northeast, and bumps are being leveled out with a tentative plan imminent to level the whole field which is fairly rolling.

Tree planting has been accomplished on a large scale in a successful attempt to beautify Post Field and supplement the improvidence of Nature in this locality.

First Lieut. H.F. Gregory has been leading the other amateur "Radio Fans" in successful radio operation to date. His telephone to radio, radio to telephone, hookup enables a person to sit at home and talk to a friend at any station or locality blessed with a provident "Radio Ham," thus utilizing radio to the fullest degree; the flexibility of range and the absence of fees being a considerable factor.

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Barksdale Field, La.

Recently a budding poet secured one of the few type-writers rampant on the shield (Pardon, we mean Field), and although such a happening is nearly always a catastrophe, the following particularly obnoxious mental hallucination resulted:

A soldier came to Barksdale Field and tried to re-enlist,

And out of all the pros and cons the following is the gist:

"Just what has your position been, before you came down here?"

"I've clerked awhile and bugled some, and cooked a little, too;

Worked on the line and crewed a ship, and cut grass while it grew.

I've been a good mechanic in the Engine Overhaul,

And in spare moments learned to do most anything at all."

"But wait a moment, Bud," they said, "You didn't get us right.

Let us explain in more detail, so you can see the light.

The position we referred to requires a lot more skill -

The only thing we care to know is how you hit that pill.

Are you a good first-baseman? Are you very good at short?

Do you serve 'em up right-handed, or fling 'em from the port?

How are you out there in the field - can you bag a Texas Leaguer?

Do you ever bite on slow ones, from being over-eager?"

The poor ex-dogface hung his head, admitting his defeat,

While the squadron clerk sneered his disgust, and showed him to the street.

He made the outfits one by one, from the 55th to the 71st;

But not a place was offered him tho' he wheedled, begged and cursed.

So, come you Johns of sand-lot fame, for Barksdale holds no terrors,

For anyone who knows the art of base-hits, runs, and errors.

If you see a pilot oddly dressed and you're curious, don't ask.

That's the latest stream-lined helmet - a baseball catcher's mask.

This poem was made the basis of a letter sent to each organization commander for comment. Of course, the most emphatic denial.

was the invariable result, accompanied by a greater or less display of indignation. Meanwhile, the baseball season draws near, and it is more or less common knowledge that no unit commander had very much rather win the post pennant that retain his own eyesight and good health.

Luke Field, T.H.

The baseball season is in full swing and the 4th Observation Squadron team took their first two games to keep in the running with the pace-setting 50th Squadron.

Fort Sill, Okla.

Dust storms, while detrimental to flying and an irritant to living conditions, have not stopped the personnel of Flight 'E', 16th Obs. Squadron, and the First Balloon Squadron in athletic endeavor. A soft ball squad has been made up from these two units and, under the able guidance of Master Sgt. Paul H. Dawkins, is developing into a considerable threat to the championship hopes of the local teams.



Selfridge Field, Mich.

The Noncommissioned Officers' Club entertained the members of the Detroit Police Bowling team at a dancing party the evening of March 22nd at the local NCO Club, after the bowling contest held at Selfridge, in which the NCO's bowling team was defeated.

Scott Field, Ill.

Tech. Sgt. Robert S. Wills, Finance Dept., the champion bowler in this region, bowled at Springfield, Ill., during the recent Central Illinois Bowling Association Meet, and emerged second best in both the singles and doubles. Sergeant Wills says that this is an important meet to bowlers in this region.



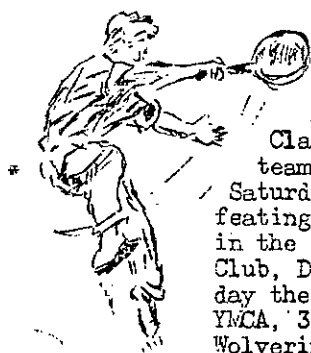
Selfridge Field, Mich.

The Post Basketball Team recently journeyed to Scott Field, Ill., where they met and defeated the Scott Field team by the score of 35 to 28. On the following day the team proceeded to Jefferson Barracks and defeated that team 42 to 21.

Scott Field, Ill.

The Post Basketball Team won 2 games and lost 4. One of the victories was over the 6th Infantry at Jefferson Barracks, score 54 to 21.

The volleyball and softball seasons began March 26th, to run for one month. Suitable cups will be awarded the winning teams of the inter-squadron tournaments. The first rounds of the volleyball and softball inter-squadron championships have been played. The 9th Airship Squadron and the Staff teams are tied, with the 15th Obs. Sqdn. and Station Complement at the bottom rung.



Selfridge Field, Mich.

The Selfridge Field Fliers, led by Lt. Col. Ralph Royce, became the Class B squash racquets team champions of Michigan, Saturday, March 21st, by defeating the Wolverines, 3 to 2, in the finals at the University Club, Detroit. Earlier in the day the Fliers won from the YMCA, 3 to 2, while the Wolverines eliminated the

Edison Club, 4 to 1. Col. Royce, playing No. 4 for his team, was the first flier to win in the final round, defeating Frank Wilson, 15-8, 15-10, 15-11. The example he set was followed by Lieut. Paul W. Blanchard and Capt. Emmett O'Donnell. The former conquered Thomas Lott, 15-6, 15-8, 15-10, while the latter clinched the team crown with a 15-8, 15-11, 15-9 victory over A.J. Phelan. George Vivian, of the Wolverines, defeated Capt. E.E. Partridge, 15-12, 15-12, 15-7, while Harvey Durand won by default from Major E.J. House.

Scott Field, Ill.

Capt. Leon R. Brownfield, A.C., and Pvt. Donald Phillips, 15th Obs. Squadron (Air Corps Reserve Officer) represented Scott Field in the annual St. Louis indoor tennis championship tournament in the latter part of March. In the singles, Pvt. Phillips was eliminated in the first round, while Capt. Brownfield went as far as the quarter finals. In the doubles, the two, as a team, were eliminated in the quarter finals. They were playing some of the best tennis players in the country.

They are now practicing for the U.S. Army net meet at West Point in June.

Five-bout boxing shows held at Scott Field at regular intervals have proved very successful.

First Lieut. Morris Shedd, Air Reserve, who completed 27 months' active duty at Scott Field in December, 1934, and who does his inactive flying at Scott Field at present, is an outstanding pistol marksman in a local shooting club. Lieut. Shedd shot a monthly average of 86% on a regular 20-yard indoor target range with a Colt .22 cal. Woodsman automatic pistol. This monthly average is unusually high on this range when compared with past figures. Lieut. Shedd is a consistent shooter and is always at the top of the list with the high scorers.

Rockwell Air Depot, Coronado, Calif., April 8th.

Operations at the Rockwell Air Depot for the past month were confined mostly to transient aircraft. During March, there were 71 arrivals at this Depot; 20 of the visitors were outside the Rockwell Air Depot Control Area; 36 visitors were from March Field and 15 visitors from other points in this Control Area. Among these visitors were Brigadier-General A.W. Robins, Chief of the Materiel Division, accompanied by Major Chapman. While here, General Robins made an informal inspection of

TECHNICAL INFORMATION AND ENGINEERING NEWS Air Corps Materiel Division

High Tension Ignition Cable

A representative of the General Cable Corporation, Rome, New York, visited the Materiel Division regarding high tension ignition cable on March 4, 1936. He stated that they are developing a type of high tension ignition cable, the finished diameter of which will be less than half that of the present standard type, and that it will meet all the requirements of Specification No. 95-28003, in addition to being more resistant to dry heat. He also stated that, if the development progresses as fast as they anticipate, they will request permission, in the near future, to submit a sample to the Division for test.

Clothing Bag, Type B-2A.

An Engineering Section Memorandum Report furnishes information regarding correction of difficulty referred to in Unsatisfactory Report, from Hamilton Field, San Rafael, Calif., on clothing bag, Type B-2A. It was stated that the bag is being redesigned to include heavier material, multiple coat hangers, removal of the pockets on one side, and provisions for a more satisfactory stiffener across the top.

Parachute Pack Opening Cords.

An Engineering Section Memorandum Report furnishes information relative to the effect of low temperatures on parachute pack opening cords.

Automatic Flight and Landings.

A Type C-14 airplane is being equipped with (Sperry) Type A-2 automatic pilot; complete Signal Corps radio equipment, including radio compass and marker beacon receptor, for the purpose of further development of automatic flight and landing equipment. This airplane will be ready for flight tests on or before May 1, 1936.

Electrical Starter Remote Control in Type B-10B Airplanes.

A representative of the Materiel Division supervised at Langley Field, Va., the installation of electrical starter remote controls in Type B-10 airplanes scheduled for the Panama Canal Department, replacing the present manual controls which had proved unsatisfactory. Report is being written.

Rockwell Air Depot (Continued)

all Depot activities.

Brigadier-General H.C. Clagett, commanding the First Wing, GHQ, March Field.

Colonel W.C. McChord, Office of the Chief of the Air Corps, Washington, D.C.

Lieut.-Colonel Olds of Langley Field, Va.
Majors Maxwell and Kessler of Selfridge Field.
Captains Perrin and Warren of the San Antonio Air Depot.

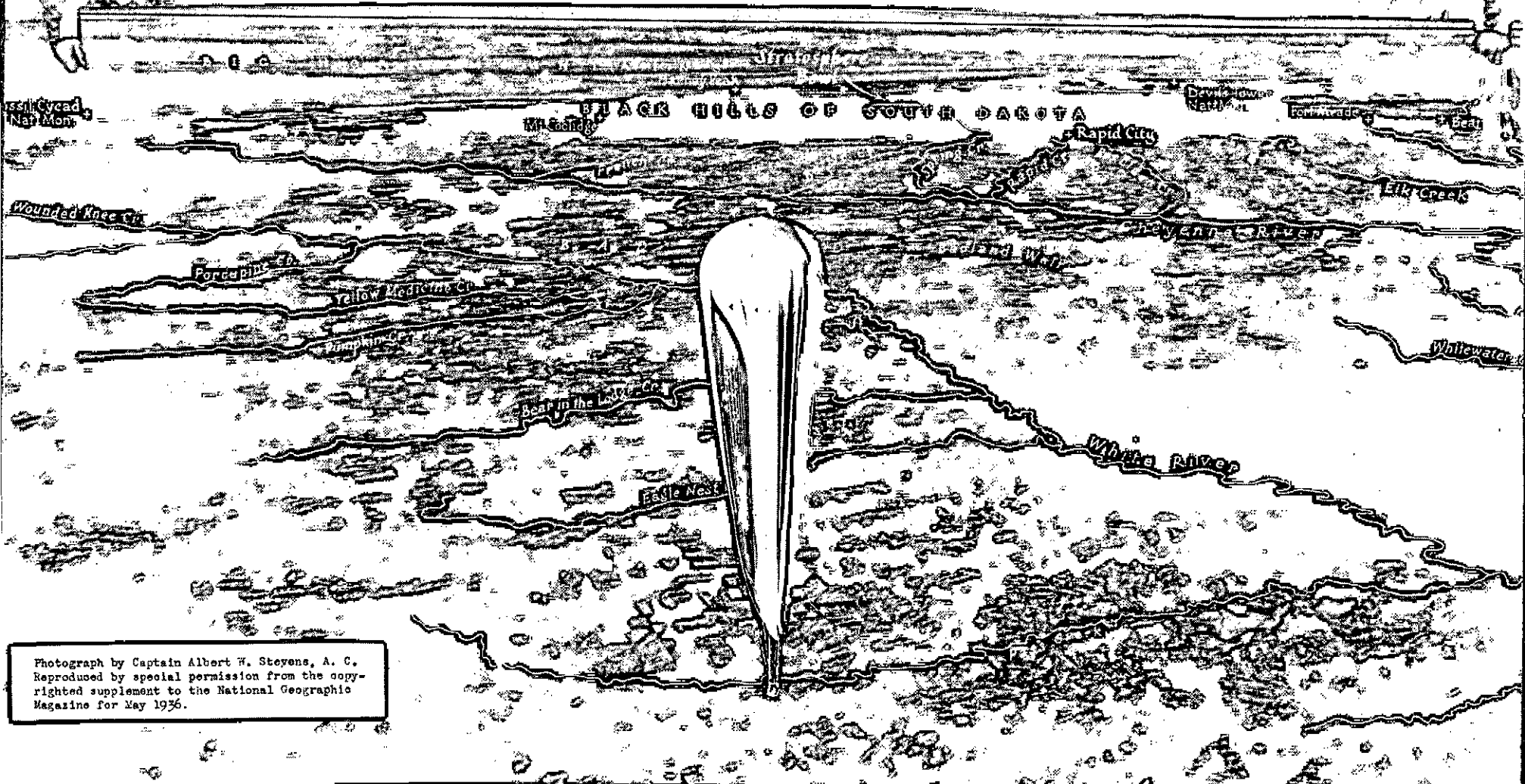
Captain L.P. Whitten of Wright Field, Ohio.

Captain Tally of Barksdale Field, La.

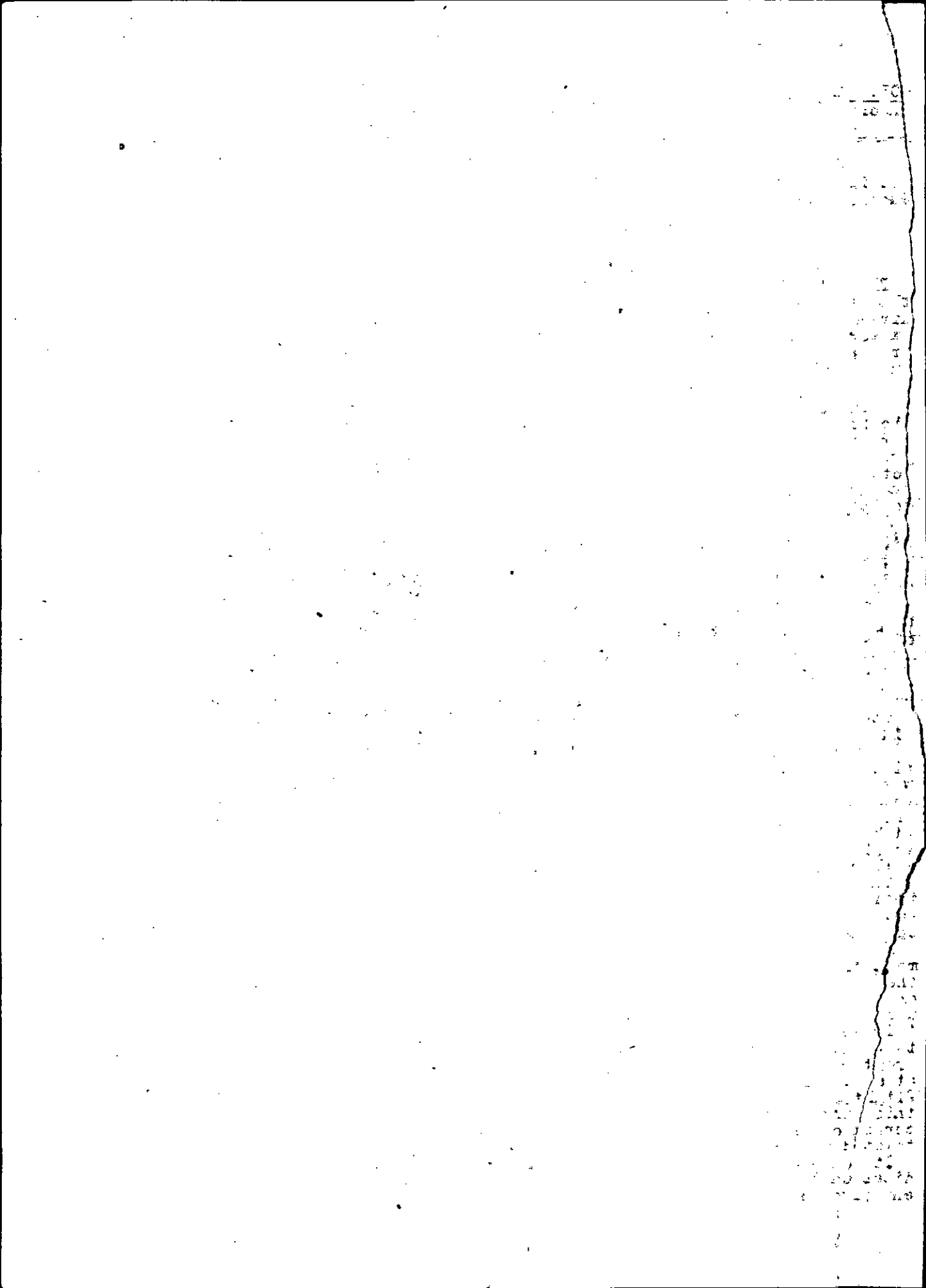
Captains Paul E. Burrows, of Pearson Field, Vancouver Barracks, Wash., and John H. Gardner, of Boeing Field, Seattle, Wash., are at the Depot at present awaiting radio installations to be completed in their O-19B airplanes.

NEWS LETTER

ISSUED BY THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D. C.



Photograph by Captain Albert W. Stevens, A. C.
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Magazine for May 1936.



The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE STRATOSPHERE FLIGHT

The following extracts are made from the report of Captain Albert W. Stevens, Air Corps, on the flight of the Explorer II, and the annexes thereto, prepared by Captains Orvil A. Anderson and Randolph P. Williams, Air Corps:

Captain Stevens' Report

* * The fabric of the Explorer I was the best selected long staple cotton, largely 3 ounces in weight, with a 2-ounce bottom. In the Explorer II, the bottom fabric was made 3 ounces and that portion from the upper catenary to the crown point of the balloon, which had been 3 ounces weight in Explorer I, was made 4 ounces in weight in the Explorer II.

It was decided to so fold the balloon that the bottom fabric would not be folded upward into the fabric of the upper part of the balloon. The balloon was therefore folded and shipped with the bottom fabric completely extended.

As a further precaution the fabric of the balloon Explorer II was pigmented with white material on both sides to prevent the possibility of adhesions. In the Explorer I the inside of the balloon was rubberized with unpigmented rubber which was to some extent "tacky." The outside of the fabric of Explorer I was coated with white pigmented rubber. The fabric of Explorer II was coated with rubber white pigmented on both sides.

These changes in folding and pigmentation completely did away with certain troubles that occurred in handling the Explorer I.

In addition, a further change was made in the rigging of the balloon, by the substitution of webbing in place of the manila ropes used in 1934. It was noticed that the manila ropes twisted together when load was applied to them, and that they untwisted with great reluctance and in some cases not at all. The use of webbing in the flight of Explorer II did away with this kind of trouble; no twisting occurred of the form where one webbing twisted with another.

It was decided to use three appendices on the Explorer II, of sufficient size to insure ready discharge of

gas when the balloon would be full and still be rising. It was decided that several appendices of moderate size were better than a single large one.

No change was considered necessary in the design of the pneumatically operated balloon valves. It was decided to abandon entirely the use of a rope actuated valve such as was used on the Explorer I, and to use two pneumatically operated valves such as the one previously used in connection with the rope actuated valve referred to. It was felt that one such valve was sufficient for operation of the balloon, and that the second valve should be installed simply as a safety measure. **

Arrangements were made with the Commanding Officer at Fort Meade to furnish at the proper time nearly 200 soldiers for duty on the day of inflation. He assigned to the camp a Medical officer and two Hospital Corps men, and an Army ambulance was provided. An officer from Fort Meade was assigned to take charge of the Cavalry detachment. The Fort Meade organization functioned perfectly. Without its valuable assistance and cooperation a stratosphere flight from Rapid City would be impracticable. * * *

Too much praise cannot be given to the Cavalry Detachment at this time, to the scientists, and to the civilian personnel, in making the best of what may have been regarded as a disagreeable situation. Although these men were sleeping and eating in Army tents intended primarily for summer use, they went about their duties without comment and maintained a high degree of optimism. The morale of the camp was excellent at all times.

Prior to November 10, the snow had been removed as fast as it fell. Some snow had fallen on November 9th, and a few men worked all night with scrapers to remove the last light snowfall. On November 10, the weather conditions, in the opinion of Captain Williams as meteorological officer and Captain Anderson as pilot, was so good that preparations were made for inflation early in the morning. By afternoon the balloon envelope had been taken from its box, spread on the ground, and prepared for the admission of gas. As in July, inflation progressed with remarkable freedom from confusion until 20,000 cubic feet had been admitted.

The balloon had been kept in the box in which it was shipped from the factory and this box had been kept in a tent heated by small oil stoves with a view to maintaining the balloon at a temperature between 40 and 50 degrees Fahrenheit. When the box was opened the balloon fabric was fairly warm and flexible. On exposure to the near zero temperature of the Stratobowl the fabric soon stiffened and it was found that it was somewhat more difficult to inflate it than had been the case in July. However, no appreciable difficulty occurred in the laying out of the balloon, nor was the time for spreading it out extended.

Shortly after inflation was started, when approximately 20,000 cubic feet of helium had been admitted, a slight noise occurred that indicated that a burst had taken place in the fabric somewhere under the top of the bag. The balloon was allowed to rise by the admission of still more gas; inspection of it was started, as it rose, to find the rip. The rip was finally located; it proved to be a lateral rip 17 feet in length, located in the panel immediately below the equator line of the balloon. The rip was due entirely to a lock in the fabric of the balloon. Such an accident is entirely preventable in the future by the introduction of still another filling appendix located just under the upper catenary band of the balloon. Such an appendix, easily visible, and readily accessible, would on another inflation insure a smooth, unobstructed passage of gas directly into the top of the balloon, without possibility of a lock forming.

The gondola was attached, and still more helium was admitted until it lifted the weight of the gondola, its instruments, and the necessary ballast. The take-off had been planned for 5:30 a.m., but to the delay caused by the accident, the actual take-off was at 7:01 a.m.***

Captain Anderson's Report

*** At take-off an eight-mile wind from the northwest was blowing across the rim of the inflation bowl, about 500 feet above the inflation bed. No wind was being registered in the bowl or evidenced on the bag now extending about 320 feet above the ground. To offset as much as possible the action of this rim wind on the balloon while clearing the surrounding hills, the balloon was maneuvered to the northwest corner of the floor of the bowl. It was then trimmed light about 700 pounds to effect a rapid rise. These steps were considered ample to insure protection to the balloon while rising out of the bowl. On being released by the maneuvering crew the balloon rose quite rapidly and was apparently clearing the rim by a wide margin when it came to a rather abrupt stop at an elevation about 100 feet above the rim, and started to descend. Because of

the balloon's proximity to the cliffed side of the bowl toward which the balloon was then drifting, ballast was expended quite freely to stop this descent; 800 pounds of lead shot being discharged. The descent was stopped after a loss in altitude of 50 feet. There was available for immediate discharge an additional 2,250 pounds of lead ballast if needed. With this available ballast the situation through which the balloon passed at this time did not endanger the flight. While no wind was noticed on the top of the gondola it is concluded that this sudden stop and descent of the balloon was caused by the dynamic action on the top of the bag of a strong downdraft of turbulent air.***

A rate of rise of approximately 600 feet per minute was maintained to an altitude of 16,500 feet, which was reached at 7:30 a.m. At this altitude the balloon was brought to rest while a complete inspection was made of rigging and controls from the outside of the gondola, followed by a check of ballast used. A complete inspection and check of apparatus inside was then made. When this work was completed the man-hole doors were sealed, and the air repurifying apparatus put into operation. Frequent valving was necessary during the period of stay at this altitude to offset the increase and lift through superheating.***

No more ballast was released until pressure ceiling was reached at an indicated altitude of 65,000 feet. The bag in rising to this height slowly increased its rate of ascent until a maximum of about 600 feet per minute was gained.***

The ceiling was reached at 10:50 a.m. The indicated altitude, with instrument correction applied, was then 73,000 feet. We remained at this approximate altitude for one hour and thirty minutes. During this time with the outside air remaining approximately at -60° C. the temperature of the gas increased from -20° C. to 0° C. as indicated by the visual thermometer hanging eighty feet below the top of the balloon bag. It is believed that this thermometer, due to its nearness to the bag surface indicated temperatures higher than the mean temperature of the gas.***

At 12:20 p.m. the balloon was valved to start the return to earth. A very generous release of gas was needed to start a positive descent, and very frequent valving thereafter to keep the balloon descending at a rate of about 300 feet per minute for the first 30,000 feet. During the periods when the valves were closed the rate of descent would slowly decrease. With more time available for descent through the stratosphere this descent could be made with less loss of gas.

The valves were opened for the last time around 40,000 feet. After passing this altitude the balloon, now entering

the troposphere, began to lose superheat and, for about 5,000 feet, maintained a uniform rate of descent of about 400 feet per minute and then began losing lift at an ever increasing rate.

Ballast was first discharged at 34,000 feet on the descent to earth. From this altitude to the ground approximately 1,900 pounds of ballast was expended to keep the descent in check. The maximum rate of fall never exceeded 800 feet per minute. * * *

The gondola ports were opened at 16,000 feet. At 10,000 feet the rate of descent was gradually decreased, bringing the balloon almost to rest at 2,000 feet above the ground. From this altitude to the landing, the rate of fall was kept very low until the drag rope reached the ground. The further descent was checked, and this altitude was maintained until the balloon had drifted past the possible hazard of a grove of trees and farm buildings, when, with a suitable field ahead, it was allowed to settle slowly and ripped just before the gondola touched the ground. The rip, tearing laterally around the cap of the balloon, resulted in immediate deflation of the bag. * * *

Captain Williams' Report

* * * The need for an accurate weather service was recognized by the sponsors and the flight personnel and had been demonstrated in past expeditions. The exacting weather requirements of stratosphere ballooning demand a forecasting service of the most complete type, capable of foreseeing approximately thirty hours in advance the weather which will prevail over an area of several states. Such a service was organized and installed at the Stratocamp in a field weather station that functioned throughout the occupation of the camp.

* * * For the flight the sky should be clear, for photographic purposes and because the presence of clouds penalizes the performance of the balloon.

For landing the sky should also be clear and the ground wind should not exceed 14 MPH.

To forecast such weather a day or more in advance requires the reception of a tremendous volume of weather data, the utilization of this data on many maps and charts, long hours of station operation and modern methods of air mass analysis. Such a procedure was followed in the Bowl. * * *

It was evident that the situation which offers the greatest security during inflation and flight was that which occurs when a large, cold, dry, Polar air mass, creating a high pressure area, moves into the United States and centers during the inflation period over Rapid City. This condition must produce an almost calm in the Stratobowl

during the inflation and be followed by ideal flight conditions. Any other weather situation would be less favorable and therefore less consistent with maximum safety. The policy was therefore early adopted of waiting for this condition, which previous study of the climatic records had shown to occur during every summer and fall. This policy was supported by the sponsors, the flight personnel and all members of the expedition. * * *

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NAVIGATION CLASS COMPLETES COURSE

April 1st found another navigation class completing the prescribed course in the Ninth Bombardment Group Navigation school at Mitchel Field, N.Y. Air Corps officers who completed the navigation course on the date mentioned were Captains J.F. Olive, P.H. Johnston, J.K. DeArmond and Lieut. C.B. Dougher. A graduation flight to Miami, Fla., and return, which involves an over-water "hop" from Diamond Shoal lightship to Jacksonville, or a distance of 407 miles, is projected.

The third class of the year, consisting of Captains Laubach, Eaton, Lieuts. Neely and Hutchison, started the navigation course shortly following the termination of the preceding one.

During March, a lecture on celestial navigation was given at the Hayden Planetarium in New York City by Mr. William Barton, associate curator. It is believed that this is the first time a Planetarium has been used as a navigation class room. Practically all the officers of Mitchel Field and a great many of their wives attended.

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NEW CONCRETE APRON FOR SCOTT FIELD

WPA workmen commenced work on April 1st on the new concrete apron for the airplane hangars at Scott Field, Belleville, Ill. This apron will be approximately 1,000 feet long by 100 feet wide, from six to eight inches thick, and reinforced throughout. It will have a concrete drain along the landing field side and will be equipped with three airplane wash racks and a number of gasoline refueling boxes.

The apron will extend from the Operations Office northward along the line of hangars. It will be laid in 25-foot strips, much in the same manner in which a highway is laid.

A railroad spur about 500 feet long has been laid to facilitate the handling of the materials. Forms are now being placed for the apron.

A landscaping project along the west side of Scott Field, adjacent to the new State highway, is practically completed. To date, 200 elm trees and 1000 shrubs of various kinds have been transplanted.

ALBROOK FIELD'S LARGEST REVIEW

ALBROOK Field, Panama Canal Zone, was the scene on April 2, 1936, of the largest review in the history of the Panama Canal Department. Approximately 11,000 troops, all available motor transportation and airplanes participated.

The Review was received by the Honorable Harry H. Woodring, the Assistant Secretary of War, at that time in Panama making an extensive inspection of the Canal Zone and its installations. The 16th Pursuit Group, stationed at Albrook Field, participated as usual on foot, in trucks and in the air. The air echelon of P-12E and P-12F airplanes was commanded by Lieut.-Colonel Charles T. Phillips; the foot troops by Major Warner B. Gates and the motor elements by Captain Flint Garrison, Jr.

The feature of the Review was the presentation of the Department Commander's Trophy for general excellence, which is annually awarded to one unit of each branch of the service. The Air Corps winner this year was the 44th Observation Squadron, commanded by Major Warner B. Gates.

The 19th Composite Wing, Lieut.-Colonel Junius H. Houghton, Commanding, passed in review immediately after the last ground element had cleared the reviewing stand. In the Wing formation were the largest number of airplanes yet to be assembled in the Panama Canal Department for a similar ceremony. First came the O-19 Observation planes, followed by B-6 Bombers, then the P-12 Pursuit planes of the 16th Group and, finally, the B-10B Bombers which had completed on the preceding day the ferry flight from Langley Field to France Field. The B-10's were flown in the Review by the ferrying personnel, commanded by Lieut.-Col. Charles B. Oldfield, and these modern Bombers were easily the "sensation" of the Review. At the conclusion of the Review, the Bombers returned to France Field, while the 16th Pursuit Group landed at Albrook Field.

Both Mr. Woodring and the Department Commander, Major-General Lytle Brown, expressed themselves as being especially pleased with the showing made by the 19th Composite Wing.

HIGH ALTITUDES AT SCOTT FIELD

The two tallest men at Scott Field, Belleville, Ill., are Private, 1st Class, Earl B. Harden, Station Complement, and Private Cyril R. Shelton, 21st Photo Section, both of whom are six feet, five inches tall. There are over twenty other enlisted men at Scott Field who are over six feet tall.

7TH BOMBARDMENT GROUP GOES INTO CAMP

Bombing training with the 7th Bombardment Group, Hamilton Field, Calif., is not taken lightly. At present, the 9th Bombardment Squadron is engaged in a two weeks' period of intensive training at Mather Field, Sacramento, Calif., formerly the home of the 20th Pursuit Group, and, until several years ago, under the command of the present 7th Bombardment Group Commander, Lieut.-Colonel Clarence L. Tinker.

A camp is being maintained at Mather Field by the 69th and 70th Service Squadrons. Each tactical organization undergoes rigorous training for approximately two weeks. Under the provisions of the old TR 440-40, the 11th and 31st Bombardment Squadrons have completed their training. At the conclusion of bombing training by the 9th Squadron, the 31st will again move to Mather Field to renew training under the new TR 440-40 (tentative).

Mather Field is ideally situated and fills a long felt need of the 7th Bombardment Group. Flying conditions are continually in accord with operations, being hot during the day and cold at night.

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A SUCCESSFUL LANDING MINUS WHEELS

Personnel at Hamilton Field, Calif., were recently treated to a bit of unintentional aerial acrobatics when Major Devereux M. Myers, commanding officer of the 70th Service Squadron, brought a B-12 in on its belly.

Major Myers took off from Delno, Calif., on a night mission to Hamilton Field. Arriving after darkness, he prepared to land and found that the left landing gear cable had broken, jamming the gear in a half-down position. Contacting the ground by radio, he informed Lieut.-Col. C.L. Tinker, Hamilton Field commander, of his predicament and prepared to attempt a landing off the mat on the grass and soft earth. However simple it may appear, landing a big ship sans landing gear is not an inviting prospect. Despite the seriousness and danger of the situation, an impressive sight was presented as the big ship glided down through the glare of the flood lights and came to a neat landing. The airplane was only slightly damaged. Private Reynolds and Henderson were on board the Bomber as radio operator and crew chief, respectively.

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The 72nd Bombardment Squadron, stationed at Luke Field, T.H., aided the National Park Service by sowing Koa seed over the northern half of the Waianae Range from formation of Bombers recently.

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REUNION OF AIR SERVICE WAR VETERANS

The 267th Aero Squadron Association will hold its third annual reunion at Indianapolis, Ind., on Sunday, May 31st, the day following the annual 500-mile automobile race, and a large attendance is anticipated.

Last year, 22 World War veterans, members of the former 267th Aero Squadron, held their reunion in Champaign, Ill., and they took advantage of the nearness of that well known college town to Chanute Field, Rantoul, Ill., where the 267th was formed during the war, to visit the Air Corps Technical School for a tour of inspection and to gain information on the various activities thereat.

It goes without saying that these veterans thoroughly enjoyed the reunion and spent many pleasant hours going over their interesting experiences during the exciting war days of 1917-18. Some of the veterans came from localities over 900 miles distant in order to meet the "Gang."

This year the annual business and "hand-shaking" period will be held at 10:30 a.m., at the old University Club on North Meridian Street, Indianapolis. The annual banquet and entertainment will be held at the Hotel Antlers in the afternoon. Elaborate plans are being made for the banquet and something different in the entertainment line is being arranged.

From Chanute Field, the 267th Aero Squadron went overseas and performed service with the British Royal Air Force at Kent County, England. There are about 150 members of the original squadron who are eligible for membership in the Association. The members are scattered all over the country and, as a result, only 87 have been located. The officers of the Association, Mr. L.K. Handorf, 430 N. Meridian Street, President, and Mr. L.A. Hesse, 3557 Kenwood Avenue, Secretary and Treasurer, both of Indianapolis, are very anxious that news of this next reunion reach as many eligible members as possible. They will greatly appreciate it if former members of the 267th will write to the President or the Secretary.

The first president of the Association was Mr. Lee Stonebreaker, and the first secretary-treasurer, Mr. James Boers, both of Champaign, Ill. These two officers were instrumental in the forming of the Association, and have announced their intention of being present at the coming reunion to help carry along the work of perpetuating the organization.

Members from South Dakota, Minnesota, Pennsylvania, Virginia and Michigan attended the 1935 reunion. Members from California, Texas, West Virginia and Massachusetts, in addition to the

States represented last year, have expressed their intention of making this year's pilgrimage to Indianapolis.

Letters addressed to the following members of the 267th were returned, marked "Unclaimed."

Albright, Leroy	Holtz, George
Bell, J.A.	Johnson, Joseph
Blair, W.M.	Jordan, Thomas
Blanford, Harold	Jones, J.O.
Bluim, Milton F.	Kappas, James
Boyd, William P.	Klein, Fred D.
Brodie, John L.	Litton, George W.
Brokaw, I.A.	McKittrick, P.B.
Cowan, I.A.	McMenamy, William F.
Crinshaw, I.A.	Mishler, Lloyd L.
Eade, Ivan C.	Mitchell, A.G.
Elliott, Don	Moffitt, Thomas O.
Elfstrom, Fred G.	Morris, Monty
Flint, E.M.	Munier, Laurence N.
Forrest, Kenneth G.	McCoy, Paul C.
Goodman, Jack	Neilson, Alfred
Gunderson, Garfield	Pietsch
Hanham, L.W.	Pool, Robert P.
Hanson, Raymond W.	Pope, Girwood N.
Hasse, Harold	Spencer, Harold
Hathorne, Carl L.	Siegel, Henry
Hayden, R.S.	Walton, W.F.
Buynagle, Jack	
Happy, H.H.	
Hayden, R.S.	

It is not beyond the realm of possibility that some readers of the News Letter may be acquainted with and know the whereabouts of one or more of the above-named members of the old 267th, in which event they can perform their daily good deed by taking their pen in hand and dropping a line to one of the officers of the 267th Aero Squadron.

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REVIVING THE BLUE MESS JACKET

Officers of the 7th Bombardment Group at Hamilton Field, San Rafael, Calif., are going far in reviving the custom of wearing the blue mess jacket at social functions. Lieut.-Colonel C.L. Tinker, post commander, was the first officer in the Group to wear the mess jacket. His snappy and well dressed appearance prompted other officers to follow his example, and at present approximately 90% of the members of the 7th Group have blue mess jackets.

"It is felt that the color that is added to social functions is of extreme importance in giving the Air Corps the prestige and importance which it deserves," says the Hamilton Field Correspondent.

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The new swimming pool, being built as a part of the WPA project now in progress at Bolling Field, D.C., is in an advanced stage of construction. Concrete, forming the sides of the pool, has been poured and tile is being laid. The pool will be completed for use during the coming season and will probably be the most popular spot on the post.

PURSUITERS IN PANAMA COMPLETE FIELD TRAINING

THE 16th Pursuit Group, stationed at Albrook Field, Panama Canal Zone, and commanded by Lieut.-Col. Charles T. Phillips, Air Corps, completed its annual period of field training on March 27, 1936, after operating for approximately two weeks on the temporary airdrome at Aguadulce, Republic of Panama.

The 16th Group, as a component of the 19th Composite Wing (less 44th Observation Squadron), operated as a part of the Red Force, which was assumed to have effected the landing in the Foncesca Bay region and at Aguadulce, and was advancing with a mission of capturing, without destroying, the Panama Canal.

The 11th Engineers formed an advance guard of the Red Force, and all other Red troops were assumed. The remaining forces of the Panama Canal Department formed the Blue, or defending force. The Air Force of the Canal was assumed to have been destroyed, while the Red Force was effecting the landing, only three O-19 airplanes assigned to the 44th Observation Squadron surviving. They had been forced to occupy an airdrome at LaChorrera.

During the period of maneuvers, all supplies, including gasoline and oil for the Red Ground and Air Forces, were furnished from a base established at the small port of Aguadulce.

The area of the Municipal Airport at Aguadulce was too small for the accommodation of the entire 19th Composite Wing, and a new field, known as Aguadulce No. 2, was built within a mile of the old field and occupied by the 16th Pursuit Group. It was found that the P-12E and P-12 airplanes with the Group could be fully serviced in approximately fifty minutes from drums carried on trucks, plus one light duty field servicing truck.

While the Pursuit Group accomplished a number of missions in cooperation with the 25th Bombardment Squadron, the absence of hostile aviation permitted it to be employed in many instances on ground strafing missions to delay the Blue Forces, which were seeking to capture the Red advance guard.

The feature of the maneuvers was the night operations from the newly improvised field at Aguadulce. This is the first time night operations have been conducted in the Panama Canal Department from auxiliary fields. Most of the night work fell to the 25th Bombardment Squadron, but on several missions Pursuit cooperation was required. A feature of the night operations was elements of Pursuit simulating attacks on searchlights in the Panama Bay, which were operating against small boats attempting to land troops to take the defenders in rear.

The field at Aguadulce was lighted by

kerosene pots, and two anti-aircraft searchlights were used in lieu of flood lights. The two searchlights were depressed along the edges of the runway for take-offs and landings, and when all airplanes were away from the field one of the lights was used as a beacon. Incidentally, it was the only beacon for the entire distance of 120 miles between Aguadulce and the defense installations in Panama Bay.

The planes of the 16th Pursuit Group were flown a total of 468 hours on forty tactical missions, an average of 29 out of 30 airplanes being kept in commission during the maneuver period.

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QUARTERLY TEST OF 90TH ATTACK SQUADRON

The quarterly test of the 90th Attack Squadron, Barksdale Field, La., with full field equipment, was conducted from April 6th to 10th at Natchitoches, La.

The 90th Squadron ground echelon, in company with ground echelons of the 8th and 13th Attack Squadrons, left Barksdale Field at 8:00 a.m., and arrived at Natchitoches two hours later. The weather was threatening when the convoy started, and it was raining by the time the airport at Natchitoches was reached.

The air echelon left Barksdale Field at 11:10 a.m., and flew to its destination in 35 minutes. By that time the camp had been set up and a meal started. The ships were serviced, the plugs on the engine of one of the ships changed, and cockpit and engine covers installed. After the noon meal, the convoy of the 8th and 13th Squadrons left on the return trip.

Despite a low ceiling the next day, three missions were carried out, one in the morning and two in the afternoon. On the morning of the 10th, another mission was flown. Meanwhile, preparations were made to break camp, and the tents were taken down and stowed aboard the motor convoy.

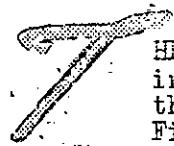
After the flight returned from its mission, a soft ball game was started, the competition being between the officers and enlisted men. The game was stopped at meal time, with the enlisted men ahead by a comfortable margin.

The ground echelon left on the return trip at 1:00 p.m., and the planes left at 2:40 p.m., both arriving at Barksdale Field at about 3:15 p.m.

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Early in the afternoon of April 4th, 30 students of the Air Corps Tactical School, with Majors Smith, Kiel, Captain Huggins and 28 enlisted men, left Maxwell Field for the gunnery base at Valparaiso, Fla., where the students were assigned aerial gunnery missions. The return flight was made on April 5th.

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HE everlasting grading, filling in and levelling work on the site of the new Bolling Field continues, with 900 men making the dirt fly during nearly all the daylight hours. The actual grading is rapidly being completed, and long, broad runways are becoming more and more clearly defined. The entire immense project presents a striking view from the air, with the hundreds of men, tractors and trucks busily at work. The runways are to be completely paved, making an all-weather field for even the heaviest and fastest airplanes.

Probably the most difficult task confronting the W.P.A. workers is the blasting out of the heavy foundations of the old steel plant at Giesboro Point, in the southwest section of the new area.

Although no flying operations are being conducted from the new field, there is a paved area nearly 800 feet long along the east side of the field which is available in case of emergency. Eventually this strip will be the field apron, along which will stand the field hangars and which will connect with the runway system. No funds have been made available for the construction of hangars.

There is also now in process of construction a new road east of the railroad siding which serves the hangar and fueling area of the field, connecting the various technical buildings of the new military post and communicating with roads into the barracks and quarters area. The work of landscaping the post is also going forward.

The War Department already has spent \$2,077,245. on the new Bolling Field, in addition to which some \$1,200,000 of W.P.A. funds has been expended or made available. It is estimated that \$3,800,000 more will be required to put the field in operation. Some of this has been authorized by Congress, and the final authorization of \$606,075 has been included in the \$30,000,000 Army construction bill introduced in the House of Representatives by Chairman McSwain of the Military Affairs Committee.

The plan for the new field provides a main runway which eventually may be extended to a length of approximately 5,000 feet. This will make possible full-load take-offs with the largest airplanes so far constructed or designed, and the new field may be the scene of take-offs of planes undertaking distance and endurance records.

The new Bolling Field is to the south of the present Air Corps field, with the Potomac River on one side and the Anacostia hills on the other. The barracks and living quarters are located

in the wooded area on the lower slopes of the hills. Although all flying is done from the old Bolling Field, the officers and men now are quartered at the new field in structures which are among the finest of their kind in the Army.

Bolling Field is garrisoned by the 14th Bombardment Squadron, the 21st Observation Squadron and the 100th Service Squadron. Lieut.-Colonel William Ord Ryan, Air Corps, is the Station Complement Commander.

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LIEUT.-COLONEL WILLIAM ORD RYAN

One of but very few officers in the Air Corps who can lay claim to the distinction of twice going through an Army flying training course is Lieut.-Colonel William Ord Ryan, now on duty as Commanding Officer of Bolling Field, D.C. The interval of time between these two flying courses was about twelve years. In the case of Col. Ryan, and this seems to hold true in the cases of a number of other officers in the service and of individuals in commercial aviation - there is typified the strong appeal aviation holds for the individual once he has entered the flying game.

Col. Ryan was born at San Antonio, Texas, August 10, 1891. He graduated from the U.S. Military Academy in June, 1914, and was commissioned a second lieutenant of Cavalry. He was promoted to 1st Lieutenant of Cavalry on July 1, 1916, and during his career as a Cavalryman he served with the 9th, 7th and 17th regiments.

Applying for and receiving a detail in the Aviation Section, Signal Corps, to undergo flying training, he was sent to the Signal Corps Aviation School at San Diego, Calif., in November, 1916; completed the course of instruction, and received the rating of Junior Military Aviator on May 3, 1917.

From San Diego, Col. Ryan proceeded to Columbus, New Mexico, that little border town which some years ago figured so prominently in newspaper headlines as a result of the surprise raid of the bandit Villa, and which was the station of the 1st Aero Squadron, then commanded by Captain Benjamin D. Foulois. Col. Ryan served with this organization from May 5 to September 12, 1917, and accompanied it when it sailed for duty in France. From September 12 to June 26, 1918, Col. Ryan was in command of the 8th Aviation Instruction Center at Foggia, Italy, in addition to being Officer in Charge of all aviation schools in Italy and of all detachments of American aviation personnel at Italian schools.

Transferred to the Third Aviation Instruction Center in France, he was a student, V-7000, A.C.

dent officer thereat until July 24th, when he was ordered to the Advanced Aviation Instruction Center at Cazaux, France, for duty as Commanding Officer. On October 31, 1918, he was transferred to the Aerial Gunnery School at St. Jean de Monts, France, for duty as Executive Officer.

Assigned to the American Army of Occupation in Germany in March, 1919, Col. Ryan served with the Air Service, Third Army, at Coblenz. Later he was on duty at several other stations in Germany. Upon his return to the United States and following a brief period of duty in connection with recruiting at Hazelhurst Field, L.I., New York, he was, on August 1, 1919, transferred to the Panama Canal Zone, where he was on duty as Executive Officer of France Field and Commanding Officer of the 7th Aero Squadron until his resignation from the military service, October 5, 1920.

Appointed a Major of Field Artillery, May 17, 1921, he served with this branch of the service until June, 1927, when he was detailed to the Air Corps. During his service with the Field Artillery, he completed the Battery Officers' course at the Field Artillery School in 1922; the advanced course at that school in 1926, and graduated from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1927.

Upon rejoining the Air Corps, Col. Ryan completed the primary flying course at Brooks Field, and the advanced course at Kelly Field, Texas, receiving the rating of Airplane Pilot on June 25, 1928. On August 16th of that year, he was transferred to the Air Corps.

Assigned to station in New York City, he was on duty with the Organized Reserves, 2nd Corps Area, until July 1, 1929, and at various times served as Acting and Assistant Corps Area Air Officer.

Col. Ryan commanded Mitchel Field, N.Y., from July 1 to September 4, 1929, and was Post Operations Officer thereafter until July 31, 1932, when he was assigned as student at the Air Corps Tactical School at Maxwell Field, Ala. Following his graduation from this School in June, 1933, he remained at Maxwell Field, occupying the position of Post Executive Officer and serving as a member of the Air Corps Board until December, 1935, when he was transferred to Bolling Field, D.C. On January 31, 1936, he was assigned to command the Station Complement at that post, with the temporary rank of Lieut.-Colonel. He is now on duty as Commanding Officer thereof.

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During March, the Engineering Department of the San Antonio Air Depot overhauled 20 airplanes and 80 engines, and repaired 17 planes and 20 engines.

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Identical in wording, S. 4309 was introduced in the Senate by Hon. Morris Sheppard, and H.R. 11920 in the House of Representatives by Hon. John J. McSwain, the text of which is as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President be, and he is hereby, authorized to call to active duty, with their consent, for periods of not more than five years, such number of Army Air Corps Reserve officers as he may deem necessary, not to exceed one thousand, three hundred and fifty.

Sec. 2. Upon the termination of such a period of active duty of not less than three years in duration, such Air Corps Reserve officers shall be paid a lump sum of \$500, which sum shall be in addition to any pay and allowances which they may otherwise be entitled to receive.

Sec. 3. All laws and parts of laws insofar as they are inconsistent with this Act are hereby repealed."

H.R. 11920 was recently passed by the House of Representatives, but was amended by Changing Sec. 3 to Section 6, the three additional sections of the bill reading as follows:

Sec. 3. The sixth proviso of section 2, Act of July 2, 1926 (44 Stat. L. 781), is hereby amended by striking out the words "Whenever used in this Act a flying officer in time of peace is defined as one who has received an aeronautical rating as a pilot of service types of aircraft", and by substituting in lieu thereof the following: "A flying officer in time of peace is defined as one who has received an aeronautical rating as a pilot of service types of aircraft or one who has received an aeronautical rating as an aircraft observer: Provided, That in time of peace no one may be rated as an aircraft observer unless he has previously qualified as a pilot: Provided further, That any officer rated as an aircraft observer in time of war must subsequently qualify as a pilot before he can qualify as an observer in time of peace following such war."

Sec. 4. The President is authorized to appoint to temporary rank in the grades of colonel, lieutenant colonel, and major, without vacating their permanent commissions, such numbers of officers of the Regular Army Air Corps as the Secretary of War, from time to time, may determine as necessary to meet the administrative, tactical, technical, and training needs of the Air Corps; the then resulting numbers in each grade, permanent and temporary, to be further increased by 5 per centum to meet the additional needs of the War Department for Air Corps officers: Provided, That such temporary appointments shall be made in order of seniority of the ap-

pointees in each grade in accordance with their standing on the relative rank list of Air Corps officers in their permanent grade, and that when an officer holding a temporary appointment under the provisions of this section becomes entitled to permanent promotion his temporary appointment shall be vacated: Provided further, That all Air Corps officers temporarily advanced in grade take rank in the grade to which temporarily advanced after officers holding such grade through permanent appointment, and among themselves in the order in which they stand on the relative rank list of Air Corps officers in their permanent grade: Provided further, That Air Corps officers temporarily appointed under the provisions of this Act shall be entitled to the pay, flying pay, and allowances pertaining to the grade to which temporarily appointed: And provided further, That no officer holding temporary rank under the provisions of this Act shall be eligible to command outside his own corps except by seniority under his permanent commission.

Sec. 5. The President is hereby authorized, by and with the advice and consent of the Senate, to appoint from among the permanent colonels and lieutenant colonels of the Air Corps who are "flying officers" as defined herein, or as may hereafter be defined, a commanding general of the General Headquarters Air Force with the rank of major general, and such number of wing commanders with the rank of brigadier general as may be determined by the Secretary of War. Officers temporarily appointed under the provisions of this section shall hold such temporary appointments until relieved by order of the President. Such temporary appointments shall not vacate the permanent commissions of the appointees nor create vacancies in the grades in which they are permanently commissioned: Provided, That the provisions of this section shall not be construed to exclude the assignment to Air Corps tactical or other appropriate commands of qualified permanent general officers of the line who are "flying officers" as defined herein, or as may hereafter be defined.

The Senate Bill is now under consideration by the Military Affairs Committee.

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MOSAIC OF SUMMER MANEUVER CAMP

Two members of the 21st Photo Section at Scott Field, Belleville, Ill., 1st Lieut. Kurt M. Landon and Master Sgt. N.G. Loupos, departed in the C-8 Photo plane on April 13th for Camp Custer, Mich., for the purpose of photographing a 20 mile by 30 mile area in order to make a mosaic map for use by the Second Army in this summer's maneuvers. A new

five-lens camera, known as the T3A, is being used. This camera photographs approximately 15 square miles at each shot.

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COMMENDABLE CONDUCT OF TWO ENLISTED MEN

The Marmon-Harrington wrecker used by Hamilton Field, Calif., recently caught fire five miles east of Bakersfield, Calif. At great risk to their personal safety, Corporal Harry E. Brosius and Private Lester H. Horning, both of them members of the 70th Service Squadron, extinguished the flames, thereby saving the truck and the majority of the supplies it contained.

"The manner in which Corporal Brosius and Private Horning performed this duty," says the News Letter Correspondent, "is a credit to the 70th Service Squadron." These two enlisted men received special commendation from the 7th Bombardment Group Commander for their attention to duty and excellent judgment.

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MEXICAN ARMY PILOTS VISIT KELLY FIELD

A group of eleven Mexican Army officers, headed by Colonel A.G. Castrejon, and one Sergeant, visited Kelly Field on April 19th. The group, which was on an official flight from Mexico City, landed at Nuevo Laredo on Friday, and were brought to Randolph Field for the week end.

At Kelly Field the visitors were met by the Commandant and Secretary of the Advanced Flying School and were taken on a tour of inspection of the post. They visited the camera obscura range, post operations, and inspected the airplanes in use for training at this school. They departed at noon on a motor return trip to Laredo.

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THE WOODMAN HAS SPARED THIS TREE

The venerable holly tree, mentioned in the previous issue of the News Letter as being moved from its former position on the bank of the Potomac River to a site adjacent to the Officers' Mess at Bolling Field, is now in place. The old tree, aside from being a rare specimen, is exceptionally well developed and contributes not a little to the beauty of the surrounding area. Tradition has it that this tree has been on the river bank since the days of George Washington.

The moving of the holly tree is the largest item in a sweeping campaign of landscaping now being carried on at Bolling Field. Hundreds of shrubs, small trees and flowering plants are being set out over the entire post, with the center of concentration the areas about the new quarters.

LIEUT.-COLONEL DAVENPORT JOHNSON, A.C.

Lieut.-Colonel Davenport Johnson, Air Corps, who is nearing the completion of his four-year detail as a member of the War Department General Staff, became affiliated with aviation on February 11, 1916, when, as a 2nd Lieutenant, 19th Infantry, he reported to the Signal Corps Aviation School at San Diego, Calif., for flying training. Following the completion of the flying course he was, on October 16, 1916, rated a Junior Military Aviator.

Col. Johnson was born at Tyler, Texas, March 28, 1890. He graduated from the U.S. Military Academy in 1912, was commissioned a second lieutenant and assigned to the 19th Infantry. He served with this regiment at Fort Sheridan, Ill., from September, 1912, to February, 1913; and at Galveston, Texas, during most of the time from February, 1913, to September, 1915. He was with the regiment from April 16, 1914, to November 15, 1914, during the American occupation of Vera Cruz, Mexico; was attached to the 22nd Infantry at Naco, Arizona, December 15, 1914, to February 1, 1915, and was stationed with the 19th Infantry at Fort Sam Houston, Texas, from September, 1915, to February, 1916.

On September 20, 1916, Col. Johnson was assigned to duty as pilot with the 1st Aero Squadron at Columbus, New Mexico. Eight days later, this organization proceeded into Mexico as a part of the Punitive Expedition under General Pershing. Returning to American territory December 15, 1916, he served at Fort Sam Houston until March 11, 1917. He was then ordered to France to study the methods employed by the French in training their aviation, and arrived in that country on April 5th, just a day before the United States declared war against Germany. While in France he took courses in various French schools of aviation. At his own request, he was assigned to duty with a French Pursuit unit in order to gain a thorough knowledge of the work, and he was one of the first pilots of the American Air Service to perform service at the front. Later, the French Government conferred upon him the Croix de Guerre with bronze star, the citation accompanying same being as follows:

"Highly conscientious officer and of magnificent bravery. Having come for trial in a French escadrille, he has insisted on taking part in all the patrols of that squadron and has besides made a great number of voluntary patrols, thus setting the very best example of enthusiasm and scorn of danger."

Col. Johnson continued his flying activities over the enemy lines until the signing of the Armistice. As Commanding

Officer of the 95th Aero Squadron, 1st Pursuit Group, from March to July, 1918, by his knowledge of Pursuit Aviation, by his loyal support of the Group Commander, and by his untiring efforts with his own organization, he was to a great extent responsible for the success of American Pursuit Aviation. He organized and commanded the 2nd Pursuit Group until April 3, 1919, and to his leadership may be attributed the remarkable record of that organization.

On November 5, 1918, while returning from an inspection flight supervising the work of his Group, Col. Johnson saw an Allied plane over the Forest de Woeyre being persistently attacked by a patrol of two enemy Fokkers. Well knowing that enemy reinforcements were close at hand, while he was alone and well within the enemy lines with his gas tank low, he did not hesitate to sacrifice himself to enable the Observation plane to escape. He fearlessly attacked the patrol, keeping both enemy planes engaged even after both of his machine guns had become jammed and, after becoming satisfied that the Observation plane had reached the American lines, managed to make his escape after great difficulty.

Col. Johnson's first assignment, following his return to the United States, was as Commanding Officer of the 1st Pursuit Group at Selfridge Field, Mich., from June 9 to August 28, 1919. He then commanded Kelly Field, Texas, to March 1, 1920, when he was transferred to Langley Field, Va. He served as Operations Officer at that field for three months, and then in the capacity of student officer and instructor at the Field Officers School until July, 1922.

Stationed at Mitchel Field, L.I., for the next three years, he commanded the 1st Aero Squadron in addition to performing various other duties. In September, 1925, he was detailed as a student at the Command and General Staff School, Fort Leavenworth, Kansas, and upon his graduation therefrom in June, 1926, returned to Langley Field for duty as Instructor at the Air Corps Tactical School. He attended the Army War College, Washington, D.C., August, 1928, to June, 1929; was on duty in the Training and Operations Division, Office of the Chief of the Air Corps, from July 1, 1929, to February 22, 1930, and then assumed command of the 3rd Attack Group at Fort Crockett, Galveston, Texas. In July, 1932, he was detailed to his present duty as a member of the War Department General Staff, Washington, D.C., in the G-2 Division.

Col. Johnson's flying time has exceeded the 2600-hour mark. He reached the rank of 1st Lieut., July 1, 1916; Captain, May 15, 1917; Major, July 1, 1920; and Lieut.-Colonel, August 1, 1935.

LIEUT.-COLONEL GEORGE H. BRETT, A.C.

A graduate of the Virginia Military Institute in 1909 as Electrical Engineer, Lieut.-Colonel George H. Brett, Air Corps, who was born in Cleveland, Ohio, February 7, 1886, received an appointment on March 10, 1910, as a 2nd Lieutenant of the Philippine Scouts. On August 11, 1911, he was commissioned a 2nd Lieutenant, U.S. Cavalry, and he served in that arm until the latter part of 1915, when he was detailed in the Aviation Section, Signal Corps, for flying training. He qualified for the rating of Junior Military Aviator, received this rating September 2, 1916, and the rating of Military Aviator exactly three years later.

From September 1, 1916, to September 15, 1917, Col. Brett was on duty as aviation representative in the Finance and Supply Divisions, Office of the Chief Signal Officer, Washington, D.C. He was then ordered to duty overseas and performed various functions connected with the purchase, receipt, storage, handling and distribution of all materiel for the Air Service in France. During November and December, 1917, he was on duty at the Headquarters Air Service Lines of Communication, A.E.F. From January 1 to February 27, 1918, he was Assistant Chief of Materiel Division, Supply Section, Air Service, Service of Supply, A.E.F., and then Chief of that Division to the end of July, when he returned to the United States for temporary duty for the purpose of purchasing and collecting materiel necessary for the Air Service. Returning to France on September 23rd, he was on duty for several weeks in the Office of the Chief of Air Service, A.E.F. During November, he commanded several rest camps in England, and then returned to the United States, assuming command of the Aviation General Supply Depot at San Antonio, Texas, on December 21, 1918. On February 24, 1919, Col. Brett became Supply Officer at Kelly Field, Texas. On July 7, 1919, he was assigned to duty as Equipment and Engineering Officer in the Office of the Department Air Service Officer, Southern Department, Fort Sam Houston, Texas.

Transferred to Morrison, Va., October 29, 1919, Col. Brett functioned as Commanding Officer of the Aviation General Supply Depot at that place until December 1, 1919, and then proceeded to Washington, D.C., for duty in the Office of the Director of Air Service, where he served as Chief of the Inventory Section, Property Division, to April 19, 1920; also as Assistant Chief of the Materiel Section to February 11, 1920, and Chief of that section to September 3, 1920. From that date until October 28, 1920, he was Assistant Chief of the Property Division; Acting

Chief to February 2, 1921, and Chief of the Property Division to September 30, 1921.

Transferred to Crissy Field, Presidio of San Francisco, Calif., October 6, 1921, Col. Brett was in command of this post until March 2, 1924. During a considerable part of his tour of duty at Crissy Field he also commanded the 91st Observation Squadron, and for brief periods on several occasions he served as Acting Air Officer of the 9th Corps Area.

For the next 3½ years, Col. Brett was on duty as Chief of the Field Service Section, Air Corps, at Fairfield, Ohio. In August, 1927, he was detailed as student at the Air Corps Tactical School at Langley Field, Va. His graduation in June of the following year was followed by further duty as a student at the Command and General Staff School at Fort Leavenworth, Kansas, where he completed the two-year course in June, 1930.

Pursuit aviation claimed Col. Brett's attention during the next three years, when he commanded Selfridge Field, Mt. Clemens, Mich., the station of the First Pursuit Group. In August, 1933, he returned to Fort Leavenworth, Kansas, where for two years he was on duty as Instructor at the Command and General Staff School. In August, 1935, he was assigned to his present duty as a student at the Army War College, Washington, D.C.

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AIR CORPS EXTENDS AID TO FLOOD SUFFERERS

During the recent flood in the State of Pennsylvania, the 2nd Bombardment Group, Air Corps, Langley Field, Va., pursuant to verbal orders of the Commander of the 2nd Wing, prepared to take the field for operations involving the dropping of food and medical supplies to communities in Pennsylvania cut off by floods from ground aid. Forty-five officers and 97 enlisted men were placed on alert status, and a total of 30 airplanes held on the line for take-off.

Major Robert T. Cronau, Air Corps, was placed in command of this detachment and selected the following staff: Captain R.E. Nugent, Adjutant; Captain R.E.L. Choate, Operations; Captain F.E. Glantzberg, Engineering; 1st Lieut. W.H. Higgins, Communications, and Captain D.D. Fisher, Supply. On March 19th, at 3:30 p.m., verbal orders of the Wing Commander directed a flight of eight B-10B airplanes, with necessary personnel, to proceed to Aberdeen Proving Ground, Md., the following day, thence with supplies to be furnished at that point to proceed to Renova, Pa., for the purpose of dropping same to flood sufferers in that community.

All missions were successfully executed, and approximately 8,000 pounds of supplies were dropped.

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V-7000, A.C.

OBITUARIES

A distressing airplane accident on the night of April 5th, near Fredericksburg, Pa., resulted in the death of five members of the Air Corps who were stationed at Langley Field, Va., one being a Reserve officer, one a Flying Cadet and three enlisted men.

Second Lieut. Stetson M. Brown, Air Reserve, with Flying Cadet Paul E. Amspaugh, Staff Sergeant Ernest B. Endy, Privates Arthur Samuel Metz and Peter J. Yost, as passengers, took off from Pottstown, Pa., at 7:30 p.m., clearing for Langley Field, Va., and encountered a severe rain storm near Harrisburg, Pa.

Fearing the rain might affect his radio, the pilot attempted to make a landing at both the Middletown and Harrisburg airports, but the recent floods in this section had wiped out all night flying facilities, so he was unable to secure the position of either airport. The crash occurred against the crest of a mountain as he was losing altitude around a beacon in the vicinity of Fredericksburg, Pa.

Lieut. Brown was born at St. Johnsbury, Vt., June 20, 1910. After graduating from the St. Johnsbury Academy he entered Norwich University, Northfield, Vt., and graduated therefrom with the degree of B.S. in Electrical Engineering.

Appointed a Flying Cadet in the Air Corps, he graduated from the Primary Flying School, Randolph Field, Texas, in October, 1934, and from the Advanced Flying School, Kelly Field, Texas, in February, 1935, specializing in Bombardment Aviation and receiving the rating of Airplane Pilot on February 28th.

Assigned for further training under his Cadet status to the 20th Bombardment Squadron, Langley Field, he completed this year of additional training on February 29, 1936, whereupon he was commissioned a second lieutenant in the Air Reserve, and continued on active duty with the above mentioned squadron.

Flying Cadet Amspaugh attended Fenn College, Cleveland, Ohio, from 1928 to 1933, graduating with a degree of Bachelor of Science. He entered the military service in the March, 1934, class at Randolph Field, but due to an accident and a subsequent operation he graduated with the following class in June, 1935. Upon completing the advanced flying course at Kelly Field, he was assigned under his Cadet status to duty at Langley Field and attached to the 37th Attack Squadron, GHQ Air Force, until January 21, 1936, when he was attached to the 36th Pursuit Squadron, GHQ Air Force.

Staff Sergeant Endy was born in Boyertown, Pa., October 28, 1904. He enlisted in the Air Corps on April 3, 1926,

and served continuously in this branch of the service. He was appointed Corporal in July, 1929; Sergeant in July, 1930, and Staff Sergeant in July, 1931. In 1927 he completed a course of instruction at the Air Corps Technical School at Chanute Field, Rantoul, Ill.

Sergeant Endy served with the 94th Pursuit Squadron at Selfridge Field, Mich., the 2nd Observation Squadron in the Philippines, the 99th Observation Squadron at Mitchel Field, N.Y., and the 20th Bombardment Squadron at Langley Field.

Privates Metz and Yost were also members of the 20th Bombardment Squadron at the time of the accident. The former was born at Chambersburg, Pa., May 7, 1910, and enlisted in the Air Corps November 15, 1928. Previous to his assignment to the 20th Bombardment Squadron, he served for five years with the 59th Service Squadron, Langley Field. Attending the Air Corps Technical School, Chanute Field in 1931, he graduated as an airplane mechanic.

Private Yost, whose home was at McKees Rock, Pa., entered the military service on October 16, 1933, and was assigned to the 20th Bombardment Squadron. In January, 1935, he graduated from the Air Corps Technical School as Supply and Technical Clerk.

The Air Corps extends its deepest sympathy to the relatives of the deceased men.

ATTACKERS WORK WITH INFANTRY AT FORT MEADE

A flight of three A-8 Attack airplanes from the 37th Attack Squadron, Langley Field, Va., recently flew a contact liaison and attack mission with Infantry and tanks at Fort Meade, Md. The contact plane kept the ground troops well informed as to the positions of the enemy, their strength and threatened objectives.

With clock like precision the flight changed from Attack to Observation and back to Attack as the missions required.

The problem was brought to a close by a dense P.S. smoke laid down by two A-8's which obscured the disputed area. The demonstrations made a favorable impression on the ground troops, who showed much interest in the inspections of the aircraft. Major Ned Schramm, commanding the flight, gave a very interesting talk on the purpose and scope of Attack Aviation. The remaining personnel of the flight assisted in answering the usual questions asked by the ground troops.

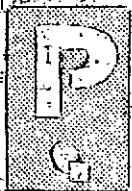
This mission was regarded as exceptionally instructive by the participating ground personnel.

The landscaping project now in progress at Bolling Field, D.C., includes grading, levelling and seeding grass over the unsightly spots left by building operations.

V-7000. A.C.

HOW ENGINES ARE PROCURED AND TESTED FOR AIR CORPS USE

By the Materiel Division Correspondent



PROCUREMENT and type testing of Air Corps engines are accomplished by the Materiel Division at Wright Field, Dayton, Ohio. The test is conducted by the Power Plant Branch.

The total running time is 150 hours, and at present is the only official test imposed on models of engines prior to their preparation for service use.

There are three specifications which apply to engines procured by the Army. The first is a General Engine Specification. This pertains to parts that are common to all Air Corps engines, such as generators, starters, gun synchronizer drives, etc. The second is the Type Specification, which applies to all engines of the same type, namely: V-1570, R-1535, R-1820, etc. The last is the Model Specification, and is the one submitted by the engine manufacturer to the airplane manufacturer. This specification is a guarantee of performance of a particular model of engine, and is a basis on which the airplane manufacturer bases his guaranteed airplane performance.

Let us assume then that an airplane manufacturer has been awarded a contract for a number of planes to be powered by a particular engine. The specification he has submitted for these planes includes the Model Specification of the engine as outlined above. Before the planes are purchased, the engine must satisfactorily pass the 150-hour Air Corps type test at powers in accordance with those outlined in the Model Engine Specification. This test is substantially as follows: The engine is first photographed and weighed. If not already accomplished by the manufacturer, the cylinder and piston ring tensions and measurements are taken. Thermocouples are installed on all cylinder heads and bases. After shop work is completed, the engine is placed on a water brake and electric dynamometer, where accurate measurements of power, manifold pressure, temperature, speed, fuel and oil consumption, can be made. The engine is calibrated and torque stand control data procured. The calibration is a check against the manufacturer's Model Specification guarantee.

The endurance test is run on a torque stand, which is nothing more than a mount, suitable for use with a propeller. The test consists of 150 hours of running in the following manner:

- (1) 40 hours of normal rated sea level power at normal rated speed.
- (2) 10 hours at critical altitude power and speed.
- (3) 25 hours at 97 per cent speed and 91 per cent power.

(4) 25 hours at 93 per cent speed and 80 per cent power.

(5) 25 hours at 89 per cent speed and 70 per cent power.

(6) 15 hours of five-minute periods of alternating take-off power and speed and idling.

(7) 10 hours at rated power and 110 per cent speed.

(8) 10 dive tests of 20 seconds each at 105, 110, 115, 120 per cent normal rated speed; and, in addition, for engines to be used in Pursuit ships, at 125 and 130 per cent normal rated speed. All dive tests are run at normal rated manifold pressure.

During the test, readings of manifold pressure, speed, cylinder temperature, fuel and oil consumption, are recorded at fifteen-minute periods. In the event of a failure of a major part, a new part may be installed and the test continued with the new part being subjected to a penalty run equal to the time covered by the engine prior to failure.

Upon the completion of the endurance test, the engine is returned to the dynamometer, where it is re-checked for power, to determine the power change during the endurance test. After calibration, the engine is completely disassembled and inspected. Each part is gone over carefully to disclose any cracks, scuffs, or other signs of excessive wear. Measurements are taken of rings and cylinders and checked against those made prior to test.

If all is considered satisfactory, the engine is approved.

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ASST. SECRETARY OF WAR FLIES IN PANAMA

During his recent inspection and visit to the Panama Canal Department, the Hon. Harry H. Woodring, Assistant Secretary of War, and his party, were on March 28th flown in an OA-3 Amphibian plane from Albrook Field to Puerto Aemuelles, Republic of Panama. Captain C.A. Ross, of Albrook Field, was the pilot. The OA-3 was escorted by two O-19 airplanes piloted by Lieut.-Colonel Donald P. Muse, of Albrook Field, and Lieut. George G. Northrup, of France Field.

Puerto Aemuelles is located just south of the Panama-Costa Rica border on the Pacific Coast line. There is a large banana plantation located here, owned and operated by the United Fruit Co. Upon arrival, Secretary Woodring and his party were taken on an inspection tour of the plantation, where the method of cutting, carrying and loading of bananas was demonstrated. The party were guests of Mr. Blair, manager of the plantation, for lunch, and returned to Albrook Field in the afternoon.

NAVIGATION AIDS IN B-10 AND B-12 AIRPLANES
By Captain Norris B. Harbold, Air Corps

SINCE the 19th Bombardment Group was assigned the mission of adapting existing equipment to celestial navigation, and since this Group was equipped with B-10 airplanes, considerable thought and effort have been devoted to the installation of navigation equipment in this type airplane.

In the installation of additional equipment or in adapting existing equipment, no changes were made in basic arrangement or function of the airplane, and installations do not interfere with the armament or controls of the airplane. These changes, as made, are considered adaptable to B-12 and B-10B airplanes and do not require special materials nor tools and can be effected by a service squadron.

In any navigation, dead reckoning is basic, and it was in providing instruments for dead reckoning that most difficulties were encountered. The equipment deemed necessary for dead reckoning consisted of the following: Aperiodic Compass, Type D-4; Turn Indicator, Type B-2, with remote control; Drift Sight; Navigation Table and seat; and Navigation Case.

Proper compass installation was the hardest problem. Installation near the fuselage side in the rear cockpit developed strange unpredictable deviations believed caused by magnetization of rudder cables and by vibration. The compass was finally installed on the floor on a square base mounted on four Lourd shock absorbers of 4-lb. size.

The B-2 Type Turn Indicator is the only type permitting remote control of the lubber line. Only a few B-2 Turn Indicators were available, but those installed required a 20 ft. length of flexible shaft to permit installation of the remote control knob near the compass. In those airplanes not having a B-2 Turn Indicator, voice communication (interphone) is used to direct the pilot to the proper heading.

A D1-A drift sight was installed on the right side of the rear cockpit. Several places were tried, the best being that which was accessible to the navigator when seated and which kept the mechanism which turns the grid inside the fuselage. The installation did not interfere with the controls.

It was found possible to obtain excellent drift reading with the bomb sight even at altitudes of 5,000 to 8,000 feet over smooth water. This required practice, however, and focussing of the eye by means of fairly long observation. No great success has yet been obtained in securing ground speed readings with this sight. The bomb sight pilot director has also been used for navigation purposes.

Although some precession was encountered, this method may develop into an easier and better means of pilot direction than by the gyro turn indicator.

A small folding table equipped with an Aircraft Protractor (small universal drafting machine) was installed on brackets placed on the rudder heel rests in the rear cockpit. This installation likewise did not interfere with the controls and can be removed and placed to one side, permitting free passage under the control column in the rear cockpit.

The seat provided in the rear cockpit of the B-10 airplane was found to be highly magnetic and to have considerable effect upon the compass when down. This seat was also too high to be used with desk or the compass as installed. Consequently, a small, folding, wooden bench was built which mounts 19 inches off the floor of the rear cockpit. This seat may be folded and placed on the floor when not in use. The metal seat installed in the airplane can still be used when necessary.

A number of Navigation Instrument Cases equipped with necessary instruments and paraphernalia have been tried. The adaptation of a standard case suitable for any multi-place airplane has been recommended. This case consists basically of a separate kit, 10" x 12", with suitable exposed pockets for dividers, pencils, computers, etc., and an ordinary brief case. All books, tables, forms, and maps not in use can be placed in the brief case, while the small kit can be hung up in some convenient place and be readily available to the navigator.

The aircraft protractor mentioned in conjunction with the folding table has been found indispensable for dead reckoning and celestial plotting. The type in use is the aircraft navigation protractor, Elgin, Part No. E-6280. However, any type of small universal drafting machines with arms 8 to 12 inches long, with 360° protractor head and blank scale (preferable), can be used. A protractor of this kind facilitates the work of plotting considerably.

A shallow aluminum box should be provided for the aircraft sextant. This box can be mounted on the fuselage side in some convenient location available to the navigator. This box should be secure and should be lined with felt rubber. If the A-6 type navigation watch is used, a similar box should be provided; however, the wrist type A-7 is considered sufficiently reliable for missions of duration of range of present aircraft and requires no box, as it is carried on the person.

Since the bomb sight installation has been changed to the nose in these air-

(Continued on page 16) 10
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QUESTIONS AND ANSWERS

Q. Why should Air Corps officers on flying duty receive extra pay?

A. In answering this question people outside the Air Corps, who do not fly, usually assign as the reason the hazardous nature of the duty, involving increased risk to life over and above that of other peace time Army occupations. Air Corps fliers probably think first of another reason. They feel that the extra pay is, in part, compensation for special ability to do that which the great majority of people are unable to do. The Army's requirements for physical fitness to take flight training eliminate about eighty percent of all who apply for it. The flight training itself eliminates fifty percent of those who take the training; so that only ten percent of those who want to fly in the Army qualify as pilots. It is natural, therefore, for Army pilots to feel that they are specialists of a rather high order. Perhaps they might be compared in this respect with major league baseball players or even Hollywood movie stars. They are able to do something most of the other folks cannot do; and since this special ability is needed by the country it is only fair that it should be paid for.

Of course, Air Corps fliers recognize the hazards of flying and the need to make special provision for their families. This provision involves greatly increased outlay on their part for insurance, since insurance companies charge high extra premiums for covering the aviation risk. The extra pay is needed to defray this added expense to fliers.

Some reviewers who have studied this subject have arrived at the conclusion that flying is growing safer year by year, as proven by the fatality records, and that for this reason the amount of extra pay should be reduced. This is only partially true as regards Army flying. It is true that more hours are flown for each fatality. However, a great many more hours of flying per officer are required, and because of this the percentage of fatalities among Air Corps officers remains about the same. Other factors these reviewers have failed to evaluate are the high type of pilot ability and the splendid morale of the fliers who have made this improved safety a reality. The extra pay undoubtedly plays a significant part in attracting to the flying profession the present high type of men who are engaged in Army, Navy and air lines flying. And it is these fliers who have piled up the huge total hours of flying which is directly responsible for contributing the flying proficiency and the advance in structural integrity and reliability of equipment which has made possible

improved safety.

In flying one of the large, costly modern airplanes the individual actions of the pilot are completely responsible for the safety of the whole craft to a degree which does not obtain in the operation of any similar surface craft. It is true economy, therefore, to have a highly competent pilot. And competency in such a specialized calling deserves an appropriate reward in the matter of salary. The air lines have recognized this and require the pilots of their large airplanes to have a minimum of one thousand hours flying time; and they pay them higher salaries than Air Corps pilots receive. A comparison made on data only partially complete for air line pilots, but believed to be fairly representative, gives an average monthly pay for airline pilots of \$569.68 per month as opposed to an average pay, including flying pay, for Air Corps pilots of \$391.70 per month.

When it is considered that Air Corps pilots are trained to fly in close formations, to carry high explosives in their airplanes, to practice very low and very high flying, to fly over unmarked and unlighted courses at night, and, in general, to obtain the absolute maximum of performance from their airplanes in order to cope on favorable terms with their opponents in war, it is believed the question of their extra flying pay is largely answered.

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LIGHT PLANE TESTED AT BOLLING FIELD

The Bureau of Air Commerce, Department of Commerce, has been conducting exhaustive tests at Bolling Field, D.C., on the new Hammond "Y" light airplane, built by the Hammond Aircraft Company of Tysilant, Mich., for the "flier plane" project being sponsored by the Bureau.

The new ship, of unique design, is of the pusher type, two place, and is powered by a 125 H.P. Menasco in-line engine. Cooling is accomplished by an efficient tunnel cowl, and with the power plant now used the ship cruises at nearly 100 miles per hour. The landing speed, with flaps down, is reported as practically nil, and landing and take-off runs are surprisingly short. The Bureau of Air Commerce hangar crews, who nurse the little ship, are enthusiastic.

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Selfridge Field, Mich., was honored by a visit from Major-General Frank M. Andrews, Chief of the GHQ Air Force, who arrived on the afternoon of April 7th from Langley Field, Va. After an inspection of post activities, the General departed for Wright Field, Dayton, Ohio, on the afternoon of April 8th.

Navigation Aids (Continued from page 14)

planes, it is no longer possible for the navigator to function as bomber. If three of the crew are officers, bomber, pilot, and navigator, no difficulties are encountered. However, if the officer crew is reduced to two, with the compass in the rear, the enlisted crew man must be instructed in setting the compass as directed by the navigator and in keeping the pilot on the proper heading by means of the remote control or by voice (inter-phone). This has not proven altogether reliable, but is the only means possible without a fully trained crew. With a trained enlisted bomber, no difficulties are encountered, as the navigator can be an officer.

To provide emergency communication between the radio operator, or navigator and the pilot, a pulley system was installed so that written communication could be maintained between these stations.

One of the plasticelle panels in each side of the rear cockpit enclosure was removed and glass inserted. This was done to permit better vision when taking celestial observations. Refraction errors due to the glass or plasticelle may or may not be present, but the error due to this refraction is not considered sufficient to disturb the accuracy possible from air observations.

Compass compensation in the B-10 airplane presented many difficulties. The effect of retractable wheels, radio, and the weight and size of the airplane made ground compensation difficult and not in conformance with conditions of flight. Swinging in the air was therefore tried with good results. However, in this swinging, the dynamotor for the radio set in the rear of the B-10 was turned off when readings were made in flight.

This air swinging consists basically of determining the sun azimuths at predetermined times and aligning the airplane in flight with these azimuths by shadows. The airplane is then turned to the magnetic headings by reference to the gyro and the compass readings taken. Compensation by magnets is not performed. The deviations are determined by drawing a mean curve for the headings as determined in flight, and a deviation card made. The use of magnets was impracticable, and deviations as determined did not exceed four degrees. Before air swinging, the lubber line error was removed by swinging on the ground. Detailed instructions on air compensation are being prepared and will be submitted for approval and publication as a T.O. or for inclusion in the navigation text.

Naturally, this adaptation of equipment and the method of air swinging is not final nor perfect, but it does represent considerable thought and effort already expended and should prove a

basis for further development. This installation is fairly comfortable, and the results obtained have been gratifying.

STUCK IN THE MUD HEAD FIRST

Lieut. William J. Bell, on duty with the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich., was the victim of a peculiar accident on April Fools' Day. While making a return flight from Chicago, he encountered a local storm near Jackson, Mich., and, after endeavoring to push through it for several minutes, decided to return to the Jackson airport and land. After turning, his engine dropped to about 1400 r.p.m., at full throttle, and the air speed fell to about 110 miles per hour. This caused him to decide to land in the first available field.

Selecting a field near the Jackson Prison which appeared to be level and firm, he made a landing and, after rolling out a few feet, the plane flopped over on its back in the soft mud. The edges of the cockpit were on the ground, and the entire headrest sank in the mud, with the result that Lieut. Bell was imprisoned in the cockpit upside down.

Following about ten minutes of effort, Lieut. Bell was able to remove his parachute and turn around in the cockpit so that he was upright and on hands and knees. He remained in this position for about ten more minutes until several farmers passing on the nearby road came to his assistance and lifted the tail of the plane sufficiently to permit him to crawl out.

Due to the softness of the ground, the damage to the airplane was not as great as was expected, and the airplane has been shipped to the Fairfield Air Depot for overhaul.

POST EXCHANGED MOVED TO NEW BOLLING FIELD

The Post Exchange and Restaurant at Bolling Field, D.C., were recently moved to new, spacious quarters in the gymnasium building on the new field area. The new location constitutes a vast improvement over the older cramped building formerly occupied. Along with the change in location, the restaurant is being splendidly equipped with the latest type of fixtures and will soon be in a position to offer the finest type of service.

Twenty-three PB-2A airplanes are to be delivered to the 1st Pursuit Group at Selfridge Field, Mich., in the next six weeks from the Consolidated Aircraft Corporation, San Diego, Calif. Four ferry pilots have already departed for San Diego to accept delivery of these planes. The Group will be equipped with approximately 75 Pursuit planes upon delivery of these new planes.

AIR CORPS MAY SECURE ADDITIONAL OFFICERS

In Circular No. 20, War Department, April 10, 1936, announcement is made that, provided funds are made available under the current War Department appropriation act, there will be an examination of applicants

for the appointment of 50 second lieutenants in the Air Corps, Regular Army.

Although fifty appointments, apportioned to the various arms, are authorized to be made annually, the entire allotment of 50 vacancies is awarded to the Air Corps for this year, since none of the group of 1,000 Reserve officers authorized for active duty for one year with the Regular Army could be eligible for appointment prior to July 1, 1937.

These fifty appointments are limited to graduates of the Air Corps Training Center only. Applications from graduates now in active military service and from those Flying Cadets who will graduate from the Air Corps Training Center on June 30, 1936, should be submitted to the Corps Area and Department Commanders through channels, in accordance with Section III, AR 605-5, not later than May 15, 1936. Candidates not now in active service will submit their applications to the station at which they last served. A candidate who has had no extended active duty with the Air Corps should submit his application to the Commandant of the Air Corps Training Center.

The preliminary examination of candidates is to be completed not later than July 1, 1936. Part I of the final examination is to begin July 27th, and part II, July 30, 1936. Eligibility to compete in the final examinations will be confined to qualified pilots who -

a. Fulfill the necessary mental, moral and physical qualifications for appointment as second lieutenants in the Regular Army.

b. Are physically qualified for flying duty, and

c. Have not reached the age of 29 years and 9 months at time of final examination.

The final mental examination will be divided into Part I, which consists of elementary subjects, and Part II which consists of advanced subjects. Each candidate will be required to qualify either by examination or by an approved exemption in all subjects of Part I, as prescribed in paragraph 34b, AR 605-5. Each candidate will be required to qualify by examination in all subjects of Part II. No exemptions in Part II will be granted for any cause. The subjects of Part I will be those listed in paragraph 34b, AR 605-5. The subjects of Part II will be -

- (1) Theory of flight
- (2) Internal combustion engines
- (3) Air Navigation, excluding celestial

al.

The scope of the examination in the subjects of Part II will be as follows:

(1) Theory of flight, - as covered by "Simple Aerodynamics" by Montieth and Carter, and those texts used at the Air Corps Training Center, or any other recognized textbook of equivalent standard.

(2) Internal Combustion Engines, - as covered by "The Airplane and its Engine" by Chatfield and Taylor, and those texts used at the Air Corps Training Center, or any other recognized textbook of equivalent standard.

(3) Air Navigation, - as covered by "Avigation" by Holland, and those texts used at the Air Corps Training Center, or any other recognized textbook of equivalent standard, excluding celestial navigation.

In each examination the candidate will require a fundamental knowledge of the principles of the subject sufficient to indicate his suitability as an officer of the Air Corps. A general average of 75 will be required in all subjects and a mark of not less than 65 in any one subject.

Candidates who are physically qualified and who attain the marks prescribed will be arranged on an eligible list in the order of their general averages. They will be selected from this list for appointment and placed on the promotion list arranged among themselves according to their prior active Federal commissioned service in the Army.

The purpose of this examination is to select the 50 best qualified applicants for appointment in the Air Corps, Regular Army. No additional credits for length of flying service are awarded and no priority in appointment will be granted to any graduate of the Air Corps Training Center by reason of enlisted or other status.

All applicants who are not in the active military service at the time of making application for examination will be required to demonstrate their proficiency as pilots before the board conducting the preliminary examination. Each examining board will submit a report showing the relative merit of these candidates as pilots.

RETIREMENT OF NONCOMMISSIONED OFFICERS

The following Noncommissioned officers of the Air Corps will be retired, effective April 30, 1936:

Warrant Officer Walter M. Phelps, Scott Field, Ill., after more than 32 years' service.

Master Sgt. Charles Feyk, 1st Bombardment Squadron, Mitchel Field, N.Y.

Master Sgt. Fred Carducci, 14th Photo Section, Mitchel Field, N.Y.

First Sgt. Ralph Baumgardner, 27th Pursuit Squadron, Selfridge Field, Mich.

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CHANGES OF STATION OF AIR CORPS OFFICERS

To Office Chief of Air Corps, Washington:
Major Robert Kauch, from Brooks Field, Texas.
To Randolph Field, Texas: Major Warner B. Gates and Lieut.-Col. William B. Mayer (Maj.) for primary flying training, upon completion of tour of duty in Panama.
To Rockwell Field, Calif.: Captain Russell J. Minty, from Wright Field, Dayton, Ohio.

Promotions:

Lieut.-Colonel Barton K. Yount to Colonel, and Captain Shiras A. Blair to Major, both to rank from April 1, 1936.

Change in Name

First Lieut. Robert Alan Stunkard to Robert Alan.

Retirement:

Colonel Ira Longanecker, April 30, 1936, for disability incident to the service.

Temporary Promotions:

To Captain

1st Lieut. Frederick W. Ott assigned as flight commander, 25th Bombardment Squadron, France Field, Panama Canal Zone, April 22, 1936.
1st Lieut. Chester P. Gilger assigned as supply officer, 65th Service Squadron, Luke Field, T.H., April 24, 1936.
1st Lieut. Harry G. Montgomery, Jr., assigned as flight commander, 32nd Bombardment Sqdn., March Field, Calif., April 28, 1936.

To 1st Lieutenant:

2nd Lieut. Frank N. Moyers assigned as Engineering Officer, 8th Attack Squadron, Barksdale Field, La., April 26, 1936.
2nd Lieut. Earl F. Signer assigned as supply officer, 4th Observation Squadron, Luke Field, T.H., April 24, 1936.
2nd Lieut. Cordes F. Tiemann assigned as armament officer, 50th Observation Squadron, Luke Field, T.H., April 24, 1936.
2nd Lieut. Jewell B. Shields assigned as supply officer, 19th Pursuit Squadron, Wheeler Field, T.H., April 22, 1936.
2nd Lieut. Sydney D. Grubbs, Jr., assigned as communications officer, 19th Pursuit Squadron, Wheeler Field, T.H., April 22, 1936.
2nd Lieut. Karl Truesdell, Jr., assigned as communications officer, 6th Pursuit Squadron, Wheeler Field, T.H., April 22, 1936.
2nd Lieut. Opal E. Henderson assigned as Adjutant, 19th Pursuit Group, Wheeler Field, T.H., May 1, 1936.

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The duties of the following-named Air Corps officers holding temporary increased rank were changed, these officers retaining their temporary rank. No change of station involved.

Major Walter Miller (Captain) from Executive Officer to Supply Officer, Air Corps Primary Flying School, Randolph Field, April 27, 1936.

Major Leonidas L. Koontz (Captain) from Supply Officer to Executive Officer, Air Corps Primary Flying School, Randolph Field, April 27, 1936.

1st Lieut. Thomas S. Moorman, Jr. (2nd Lt.) from supply officer, 4th Observation Squadron, Luke Field, T.H., to Communications Officer of that squadron.

THE COVER PAGE FOR THIS ISSUE OF NEWS LETTER

Featuring this issue of the News Letter is the first photograph ever made showing the division between the Troposphere and the Stratosphere and also the actual curvature of the earth. The area shown in this photograph, taken from an elevation of 72,395 feet, the highest point ever reached by man, is larger than the State of Indiana.

From its vantage point far up in the stratosphere, the camera has registered the horizon 330 miles away, sweeping like a great arch across the photograph. The straight black line has been ruled in to bring out clearly the curvature of this horizon, which is practically concentric with the earth's surface, and thus indicates the actual curvature of the earth.

This remarkable picture is most interesting to scientists as the first photograph yet secured showing the boundary between the troposphere (the dust-laden region of rising and descending air currents, of clouds and variable temperature) and the stratosphere (the region of nearly constant temperature, above dust and air turbulence).

The abrupt change from light to dark on the horizon marks the top of the "dust sphere," the meeting surface or boundary between the lower air (troposphere) and the stratosphere. Its height varies with the season, with the latitude and with weather conditions. On Nov. 11, 1935, over South Dakota, where this photograph was taken, this dust arc was approximately 37,000 feet above sea level. Although rising air currents are unable to penetrate this lower boundary to the stratosphere and to carry dust into it, volcanic eruptions have on rare occasions shot dust to tremendously greater heights.

The significance of the photograph is that both the camera and the target (the top of the "dust sphere") are in the stratosphere, that is, the line of sight is wholly through the stratosphere, 96% of the earth's atmosphere being below the camera when this picture was made. With only 4% of the earth's atmosphere above this height, and that essentially free from dust, there is little to scatter sunlight; consequently the upper sky is very dark.

The Big Horn Mountains of Wyoming and Montana, with patches of snow and dark forest, can be seen faintly near the horizon. The long, dark area in the middle ground is the Black Hills of South Dakota, more than 100 miles long, and from 120 to 180 miles away. The forest that covers the region gives the dark color and so camouflages its mountains that they are not distinguishable as such. The nearest objects in the foreground are more than 30 miles away. This picture shows more than the human eye saw. To the eyes of the balloonists the horizon was not clearly distinguishable. The earth and sky merged together in a band of white haze.

The News Letter greatly appreciates the courtesy of the National Geographic Society in granting permission to use this photograph. The rotograph press plate therefor was made at the Material Division, Wright Field. Mr. Bob Fitzgerald, of the Army Aeronautical Museum, took several liberties with the photograph, such as adding inserts of Captains Stevens and Anderson, also the stratosphere balloon. Our cordial thanks to all who had a hand in producing the cover for this issue.

Notes from Air Corps Fields

Luke Field, T.H., April 3, 1936.

23rd Bombardment Squadron: Personnel of the Squadron were mentioned twice in the past week in radio broadcasts from the mainland. Walter Winchell announced the engagement of Lieut. David N. Crickette to Miss Mary Van Noy from Asheville, N.C. The other news citation was Staff Sgt. H.G. Muere's presence at the Bowling Congress at Indianapolis.

Major Liggett resumed command of the squadron after two weeks' stay at Kilauea Military Camp. Capt. Bisson, Lieut. Capp and Pvts. Logan, Searcy and Carter were also at the camp, and all had a fine time. Capt. Bisson enjoyed the stay so much that he stayed over for another two weeks.

4th Observation Squadron: The Squadron used the amphibian to spot seacoast firing for the Harbor Defenses of Honolulu on March 25th and 26th. Since the mission required flights of several hours' duration, the amphibian proved to be a boon with its modern conveniences and comfortable closed in cockpit.

First Lieut. T.S. Moorman just completed the Wing Navigation course at Wheeler Field and is back for regular duty with the organization. Capt. Charles F. Born and Lieut. John W. Egan, who also completed the Wing Navigation course at Wheeler Field, returned on March 23rd.

72nd Bombardment Squadron: The Squadron is still engaged in day and night anti-aircraft artillery towing missions at Bellows Field, Waimanalo, T.H.

Hawaiian Air Depot, Luke Field, T.H.

The latest addition to the Depot is the Cost Accounting Unit. Long an integral function of the depots in the United States, it is only recently that efforts have been made to install a similar system here. Complicated somewhat by the use of both civilian and enlisted labor and the fact that the depot functions as a service squadron to Luke Field, it is nevertheless anticipated that much benefit to the efficiency of the Depot will result from the knowledge derived by the system.

A newcomer to the ranks of the Depot is Miss Gladys Slaght, who was employed to assist the Cost Unit.

Master Sgt. John J. Fitzpatrick, who had had long and varied experience in Supply work, reported for duty and was assigned as Assistant Warehouse Superintendent in the Supply Section. The oldtimers of the Depot remember this genial Irishman during the period of 1927-1931, when the Supply Section was located in the City of Honolulu.

Miss Faye Northrup, who has been on the mainland for several months, returned to the Islands and has resigned her position. She is now Mrs. DeRocher. The entire Depot extends best wishes to her.

At this writing the Supply Section is anticipating considerable work in connection with the unloading of supplies and equipment to

arrive on the Transports LUDINGTON and MEEIGS.

Production schedules in the Engineering Section were recently subjected to a major overhaul. The arrival in April of airplanes new to this Department will be something of an event, as they will constitute the first equipment to arrive in Hawaii in over three years.

San Antonio Air Depot, Duncan Field, Texas.

Lieut.-Colonel H.E. Pitts, QMC, of the office of the Quartermaster General, Washington, D.C., on a tour of inspection of new construction at Army posts at San Antonio, was a visitor at the Depot on April 16th, accompanied by Capt. A.F. Dershimer, Constructing Quartermaster for San Antonio and vicinity.

Major R.T. Cronau and Capt. D.D. Fisher, A.C., and Lieut. McCune, Air Reserve, of the GHQ Air Force, Langley Field, Va., arrived April 18th, ferrying three B-6A planes to the Depot for overhaul, accompanied by Staff Sgt. McDonald and Corporals Edwards and Haybuck as mechanics; all to return in a Transport, piloted by Capt. B.D. Hale of that station.

Capt. E.V. Harbeck, Jr., of the Office of the Chief of the Air Corps, on an extended air tour of Air Corps stations through the southern and central States to confer on Air Corps technical matters, was greeted by many old friends on his arrival here April 20th. Capt. Harbeck was formerly Chief Engineering Officer of the Depot.

Captain M.E. Tillery, A.C., and 2d Lt. A.E. Livingston, Air Reserve, of the 3rd Wing, GHQ Air Force, Barksdale Field, La., arrived here April 19th and 18th, respectively, for about ten days' temporary duty, assisting in running the 3-hour test of overhauled engines for that station.

Major R.V. Ignico, Depot Supply Officer, and Staff Sgt. T.K. Dorsett, of the 3rd Transport Squadron, took off April 13th on a navigation training flight to Maxwell Field, Ala., via Barksdale Field, returning on the 16th.

Captain E.D. Perrin, Chief Inspector of the Depot Engineering Department, made a flight to Barksdale Field and return, April 13-14, to investigate engine difficulties in connection with P-25 planes at that station.

Langley Field, Va., April 20th.

20th Bombardment Squadron: Flying in this squadron has been somewhat curtailed recently. Stress, however, has been put on instrument flying in the BT plane in order to qualify all pilots in instrument flying.

On March 23rd, three officers from this organization departed with the flight of nine B-10B planes ferried to Panama.

During the recent floods in Pennsylvania, two planes from this squadron carried food and medical supplies from Aberdeen, Md., to the relief base at Renova, Pa.

37th Attack Squadron: All of the A-8's of the squadron are now back in commission after some delay resulting from the difficulty in obtaining engines.

During inclement weather when there is no

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flying, the flying personnel of this squadron utilize the "Status Board" in the Squadron Operations Office to play an old favorite game called "Tick-tack-toe." This game furnishes a lot of fun and recreation for the pilots, but not for the Operations Clerks who have to clean the board. All visitors to the 37th hangar are puzzled by the expanse of checker board X's and O's on the "Status Board." When the staunch followers of "Tick-tack-toe" are informed that it is an advanced stage of the old standby, in "Go," they immediately challenge. In "Go" five X's or O's in line are required to win. No strangers' names have yet appeared on our "Go" ladder, though challengers are welcomed. Major Schramm and Captain Grussendorf are the champions and defenders of the squadron, as they occupy the two top rungs of the ladder.

Barksdale Field, La., April 16th.

In one of the most interesting occurrences of the trip of the 90th Attack Squadron to Natchitoches, La., for quarterly test with full equipment, 1st Sergeant Braxton, one of a party fishing from a small boat, after much heckling, turned to Captain McCoy, handed him the pole and asked him to try his luck. He was greatly surprised when Captain McCoy promptly pulled in the biggest fish caught that day.

Boston Airport, Mass., April 10th.

It is with the deepest regret and profound sorrow that we announce the death of one of our most respected and beloved Reserve officers, Lieut. William R. Tanner, a pilot with the Boston and Maine Airways, who was killed while testing a tri-motored Stinson at Burlington, Vt. He will be missed by all who knew him. His cheery smile and good word for everyone was always evident.

The C-8A airplane used for weather observations is back from Middletown. Weather flights will be resumed April 11th, with Pvt. Marsh and another enlisted pilot being ordered here from Langley Field. Once more the roar of the motor at three in the morning will announce to the barracks that weather flights are again in vogue.

April 5th was a busy day for the emergency crew with twelve visitors at the Boston Airport. All types, from PT's to Bombers, were on the line and inspected by visitors. All in all, it was a busy day.

Private Tirone left the Detachment for Hawaii. It is his first taste of foreign service, and let's hope that he will enjoy the wonderful climate of the land of hulas and pineapples as much as we think he should.

Private Zeigler has again blossomed out with a car - a LaSalle Coupe no less. Sergeant Campbell also celebrated the advent of Spring with a 1934 Ford V-8.

At midnight April 12th, the new working schedule for the Detachment goes into effect. The Detachment will be divided into two shifts in order that the Reserve officers at the airport will be able to get in some flying time after their working hours. There has been splendid cooperation between the officers and

the men of the Detachment, and we expect to have lots of flying from now until September.

Patterson Field, Fairfield, Ohio, April 21st.

Due to the shortage in funds for shipment of supplies and insufficient air-freight transports, most supplies for activities within the Fairfield area will now be delivered F.O.B., Patterson Field Fairfield, Ohio. Advise all activities to get out their toy wagons and start hitting the dirt.

As an indication of the perfect state of domestic bliss existing between officers and their wives at Patterson and Wright Fields, several officers have purchased private airplanes so that they may take their wives with them on cross-country flights. There was a time when such action would have been termed "carrying coals to New Castle," but it may only mean that the depression is over. Perhaps conditions have changed. We wouldn't know.

Selfridge Field, Mich., April 23rd.

Chaplain Peter J. Quinn, of this station, has been at the hospital at Fort Sheridan, Ill. since April 1st, having been ordered there for observation and treatment.

Orders received recently assign Major Joseph P. Sullivan, QMC, to duty at this station as Quartermaster. He has been on duty in the Panama Canal Department.

Bolling Field, D.C., April 24th.

On April 15th, the first of two new Douglas C-34 Transports arrived at Bolling Field after an uneventful trip from Santa Monica, Calif. On the day following, the plane departed for Sarasota, Fla., being flown by Captain W.L. Ritchie, pilot, with Capt. G.W. McGregor, co-pilot; the Assistant Secretary of War, Mr. Woodring, and four other passengers. The cruise ended with the return trip to Bolling Field on April 17th.

The second of the two planes arrived from the factory on the 19th, flown by Captains J.W. Persons and H.R. Baxter, and crewed by Sgt. Hoce and Private Moore.

Upon notification from the Office of the Chief of the Air Corps that competitive examinations for regular commissions in the Air Corps, Regular Army, will be held on or about July 27th, three enlisted pilots attached to this station have commenced to study the announced subjects. In a small room in the Air Corps barracks, pronounced "off limits," for other enlisted personnel, Corporals H.E. Hurst, F.K. Paul and J.A. Way are industriously brushing up on the technicalities of Navigation, Internal Combustion engines, Meteorology and Theory of Flight. Buena fortuna.

During the week of April 12th, 20 applicants for appointment as Flying Cadets, soldiers and civilians, underwent physical and scholastic examinations at the field. For one reason or another, the ranks gradually thinned, and at last reports only three aspirants remained. All three are members of the command. Final results of the mental exams have not yet been received.

The customary monthly Post Dance was held in the gymnasium on Saturday night April 18th, also as customary, it was quite a success. The

Post Orchestra furnished the music, and the decorations were novel and attractive.

With pleasure we announce that Major Jack C. Hodgson, but recently recovered from an appendicitis operation, is once again at his desk and duties. He was recently assigned to command the 21st Observation Squadron.

The new athletic field at this station, on which grading and sodding were completed in the late fall of last year, is approaching completion and will shortly be in first class shape. The oval has an excellent growth of grass, and it is being used for the games of the recently organized soft-ball league.

Maxwell Field, Ala., April 20th.

HORSE SHOW 'EUGE SUCCESS' AT TACTICAL SCHOOL

Before one of the largest and most colorful crowds seen in years at the event, the Annual Horse Show for the Air Corps Tactical School got under way promptly at 8:00 a.m. Saturday at Maxwell Field. There was a total of nine events. The winner of each event received a Trophy and blue ribbon; those finishing second received a red ribbon and, third, a yellow ribbon.

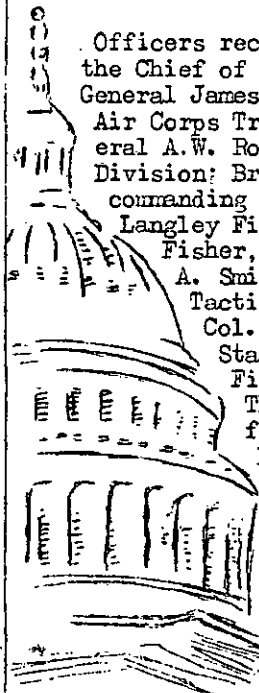
The first event was the Children's Hack Class, open to all children of the post, and horses were shown at the walk, trot and canter. First place went to Miss Judith Johnson, daughter of Capt. Cortlandt S. Johnson, A.C.; second place to Master Allen McClellan, and third place to Miss Betty Kiel. Trophy and prizes were awarded by Mrs. Kinsley W. Slauson of Maxwell Field.

The second event, the Ladies Novice Class, was open to all ladies of the post who had been members of this year's beginners' class, with horses to be shown at walk, trot and canter. Manner of performance was judged for 70% and skill of rider rated 30%. The winner was Miss Janet Slauson; second place, Mrs. Glasgow; third place, Mrs. Gordon P. Saville. Trophy and prizes were awarded by Lt.-Col. Jacob H. Rudolph, Air Corps.

The Children's Jumping Class, one of the most exciting for the youngsters, was next with 11 entries on picked mounts of the School. Blanche Muse, daughter of Master Sgt. and Mrs. Muse, of Maxwell Field, riding "Dusty," won the blue ribbon. Dick Creed, son of Major and Mrs. R.L. Creed, riding "Pinkey," was second, and Janie Eglin, daughter of Major and Mrs. F.I. Eglin, riding "Billy," was third. Prizes were awarded by Mrs. Ray L. Owens.

Officers' Chargers, the next event on the program and consisting of 16 entrants riding the pick horses of the stables, created intense interest. Capt. Clayton E. Hughes, A.C., riding "Blackwitch," won the Trophy and blue ribbon; Lieut. Elwood R. Quesada, A.C., riding "Tip-top," was second, and Captain George V. McPike, A.C., was third. The two last named officers are students of this year's class at the Tactical School, and Captain Hughes is a permanent member of the post. Presentation of trophy and ribbons was made by Mrs. A.G. Fisher, wife of Colonel Fisher, the Tactical School Commander.

(Continued on next column)



Officers recently visiting the Office of the Chief of the Air Corps were Brigadier-General James E. Chaney, commanding the Air Corps Training Center; Brigadier-General A.W. Robins, Chief of the Materiel Division; Brigadier-General Henry C. Pratt, commanding the 2nd Wing, GHQ Air Force, Langley Field, Va.; Colonel Arthur G. Fisher, Commandant, and Major Lotha A. Smith, Instructor, Air Corps Tactical School, Maxwell Field, Ala.; Col. Hugh J. Knerr, Chief of Staff, GHQ Air Force, Langley Field; Captain Bernard S. Thompson on a navigation flight from his station at Hensley Field, Texas; Captains Wallace G. Smith and Daniel C. Doubleday, of Wright Field, to confer on communications matters.

Officers in the OCAC listened to an interesting lecture delivered by Captain Theodore J. Koenig, Air Corps, who is stationed in Berlin, Germany, on duty as Assistant Military Attache for Air. Captain Koenig is now on leave of absence.

Lieut.-Colonel Arnold N. Krogstad and Major Otto Trunk made the rounds of the offices to say good-bye. Col. Krogstad went on two months' leave prior to assuming command of the Advanced Flying School, Kelly Field, Texas; and Major Trunk proceeded to Langley Field, Va., for duty with the GHQ Air Force.

Major Lynwood B. Jacobs reported on April 15th for duty in the Supply Division.

Major Malcolm C. Grow, Medical Corps, returned to duty from Panama. He accompanied the ferrying flight of Bombing planes to the Canal Zone.

Major Rosenham Beam returned from leave spent at Miami, Fla., and Captain M.E. Gross, from leave in New York.

Officers returning to their desks from temporary duty elsewhere were Captain Alvan C. Kincaid from Wright Field; where he was a member of a board of officers convened at that station; Captain W.B. Souza from Selfridge, Chanute and Wright Fields, where he conferred on matters regarding communications equipment; and Captain R.C.W. Blessley from Columbus, Ohio, and Chicago, Ill., where he conferred on matters regarding Air Reserve training.

Open jumping, acknowledged the most exciting event of the show, followed. There were 14 entrants in the event. Three of the horses, "Jack," "Pinky" and "Hisso" were handicapped for the race. Major Eaker, riding "Hisso," cleared the first four obstacles in fine style, but the horse refused the fifth twice, unseating his rider each time. Captain Hughes, riding "King," cleared each of the obstacles in perfect form until the last jump at which "King" refused to try on the first attempt but cleared in the second try. Captain Ely, riding "Pinky," was declared the winner of the event, V-7000, A.C.

with Jack McGregor, riding "Texas," taking second place, and Freddie Eglin, Jr., taking third. Presentation of trophy and ribbons was made by Major "E.K." Johnson, Air Corps.

During intermission, Miss Louise Owens, daughter of Capt. and Mrs. Ray L. Owens, presented Mrs. John I. Moore and Mrs. Frederick W. Evans, instructors in equitation for the "Children's Riding Class" for the past year, with a beautiful gift each in appreciation of their splendid services.

The Ladies Hack Class for the Women's Club Trophy, next on the program, the horses to be shown at the walk, trot, canter and such other movements as directed by the judge, has twelve entrants. Mrs. Jones, riding "Kentucky," won first place; Mrs. K.C. McGregor, riding "King," second place, and Mrs. K.C. McGregor, riding "Tony," third place. Presentation of trophies and prizes was made by Colonel A.G. Fisher, commanding officer of Maxwell Field.

In the intermission after this event, special prizes were awarded to enlisted grooms. The winners, in order named, Privates Wilkerson, Campbell and Moore, rode into the ring to receive their awards from the ringmaster. Major Kramer Thomas, Cavalry Instructor of the Infantry School, Fort Benning, Ga., was the judge of the grooming of all mounts at the Tactical School stables. He complimented the officer in charge of them and the grooms on the condition of all mounts.

Major K.W. Slauson, QMC, announcer for the Show, proclaimed that Lieut. Wright of the Navy was wanted at the Judges stand. He appeared from the audience, and after quite a presentation speech by the announcer, was awarded one antique oversized spur from Major Richard L. Creed, Cavalry, for the Navy officer's intense interest in equine sports. Illness prevented his participation in the show. Lieut. Wright, apparently overwhelmed by the presentation, was unable to make a return speech at the time.

An innovation followed - a Polo Bending Race, with 11 entrants. This race, open to all, was won by Capt. Clayton E. Hughes. The horses were to be run through a series of stakes, passing the first stake on the rider's left. Knocking down a stake or failing to pass alternately between stakes was cause for elimination. Capt. Ely won second place, and Mrs. K.C. McGregor, third. Trophy and ribbons were presented by Mrs. S.F. Landers.

The last scheduled event for the show was the Pairs of Road Hacks, open to all pairs of lady and gentlemen riders, but family pairs not allowed. Horses shown at the walk, trot and canter. Nine scheduled pairs on the best horses of the field cantered into the arena. Captain Ely and Mrs. Crawford were winners of first place; Captain Storrie and Mrs. Powell, second place; and Lieut. Hansell and Mrs. Gates, third.

An added special event followed, called "Musical Chairs." This most amusing event furnished the crowded stands with plenty of causes for laughter. Competitors were required to ride at a gallop around the ring until a whistle was sounded, then to leap from their horses and seat themselves on a stool, of which number there was always one short to go around. The event continued on the elimination basis until Capt. C.E. Hughes, Capt. Carl R. Storrie and Russell Maughan, son of Capt. R.L. Maughan,

remained in the contest. One stool was withdrawn, and the three riders circled the two remaining stools with one eye on a seat and their horses at a gallop. When the judge considered each rider to be equally as far from a seat he blew his whistle and Capt. Hughes couldn't get to a stool in time, winning third place in the event. With only one stool remaining, the rush for it after the whistle resulted in a tie, and both riders were required to try again from a greater distance. This time, Russell Maughan leaped from his mount and secured the stool ahead of Captain Storrie. Presentation of trophy and ribbons was made by Mrs. Thomas Gore.

Colonel Fisher and all participants were heard to state that the Horse Show was the most successful ever staged, and much credit was extended to Major Creed, Cavalry Instructor at the Tactical School. His untiring efforts prior to the show and during the events was largely successful in presenting such a highly pleasing performance.

Major Kramer Thomas, Cavalry, the guest judge from Fort Benning, was praised for his part in the show, as was the staff, consisting of: Announcer: Major Kinsley W. Slauson, QMC. Ring Master: Capt. Samuel M. Connell, Air Corps. Asst. Ring Master: Bennett M. Lowe, A.C. Recorder: Lieut. Bennett W. Wright, U.S. Navy. Ribbons and trophies: Mrs. R.L. Creed and Mrs. A.E. Jones.

Grounds: Staff Sgt. James T. Davis, Air Corps. Capt. James Sparhawk, A.C., Communications Officer at the Tactical School, installed a loud speaker system for the announcer and had a radio on hand whereby during intermissions the best radio programs obtainable were presented. Spectators commented that not a dull moment was experienced throughout the Show.

Many guests were on hand from the city as well as from other stations, and all joined in luncheon at the Officers' Club immediately after the close of the show.

Hamilton Field, Calif., April 15th.

One of the liveliest organizations at the field is the 70th Service Squadron, and we do not mean merely shop activity. The reorganization of the Air Corps has stepped up every outfit, as far as that goes. But the extraordinary esprit of the 70th, thanks to that very fine officer, Major D.M. Myers, hits this Correspondent right between the eyes.

Every month the 70th conducts an organization dance, at which refreshments are served. This is quite a novelty at Hamilton Field. There are few facilities for such social diversions. Yet the 70th has succeeded by the use of mess hall and recreation room and the local W.P.A. Orchestra. In this program, Lt. Hebert Baker, Air Corps, assists Major Myers. Gradually athletics are developing on this new post, and the 70th is leading in the trend. The spirit of Badminton has settled on the mechanics, who now like the game. But Major Myers can beat any Badminton player in his outfit, or in the post for that matter. Volleyball, handball, and tennis are regular activities. In these sports the officers are right with the men. Schedules for league competition are made up by Captain F.L. Anderson, E & R Officer. Capt. John O. Rody, QMC, is starting baseball.

KEEPING FIT

San Antonio Air Depot:

The SAAD Airmen started the regular City of San Antonio Major League season with a bang by taking the first game from the San Antonio Public Service Co. team by a score of 4 to 3 on April 12th, following this up on April 19th by winning from the Brooks Field team, 3 to 0. This puts the Airmen in a tie with the Richter's Bakery team for first place in the League.

Bolling Field, D.C.

The recently organized soft-ball league, hindered not a little by high winds and dust storms, has nevertheless been creating much interest among personnel of this station. With the team of the Engineering Department ranking as slight favorites to win the Post pennant, competition grows keener with every game. Officers and men apparently enjoy watching the games as much as they do taking part.

Luke Field, T.H.

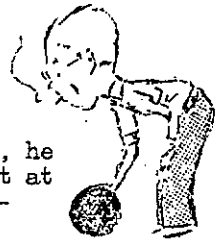
Second Lieut. J.H. Cheatwood has led the 4th Squadron baseball team into what must be a sure championship, even though he has been confined to quarters recently on account of illness.

Scott Field, Ill.

Two games in the inter-squadron league have been played to date. The 9th Airship Squadron is leading with two wins and no losses; the 15th Observation Squadron and the Staff teams are tied with one win and one loss each, and the Station Complement brings up the rear with two losses. (Soft Ball).

In baseball, the teams from the four units above mentioned are practicing for the inter-squadron league session, which will begin May 1st. Last year the 15th Observation Squadron won the post championship title.

Scott Field's star bowler, Tech. Sergeant Robert S. Wills, of the Finance Dept., took a short furlough to make a tour of the big bowling tournaments. On April 11th and 12th, he bowled in the A.B.C. Tournament at Indianapolis, Ind., and did exceptionally well both in the singles and doubles, as well as with the Chas. Krohn team of St. Louis. In the singles he bowled 622 pins in three games. In the doubles, he and his partner made 1133 pins, and with the team he made 597 of the 2720 pins. From Indianapolis, Sgt. Wills went to Chicago to enter the Peterson Classic Tournament.

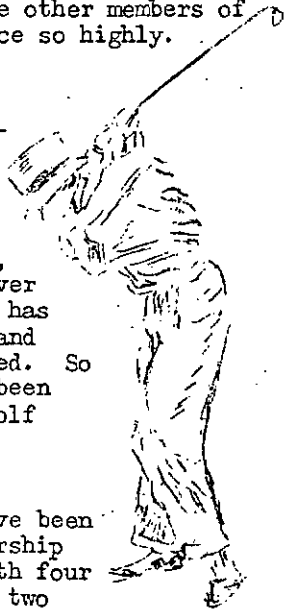


Selfridge Field, Mich.

The Post Bowling Team, composed of Master Sgts. Jacob J. Brandner, Wilford L. Baxter, Staff Sgt. Arthur R. Hagemeyer, Corp. Lewis D. Harmer and Private John J. Manicki, departed from Selfridge Field March 29th for Indianapolis, Ind., to participate in the American Bowling Congress Tournament. The Selfridge bowlers as a team were not so fortunate. However, on April 1st, Sergeants Baxter and Hagemeyer rolled a brilliant doubles score of 1242 total to take a ranking place in the two-man event and assure themselves of approximately \$35. each in prize money. Sergeant Hagemeyer set the pace with a spectacular 638 set, shooting games of 201, 204 and 233. Later in the day he collected a prize winning singles total of 591, giving him an all-events count of 1746, which was only five pins out of the money in the latter. Sergeant Baxter rolled a total of 604 pins, with an opening game of 216, followed by games of 176 and 212. In singles he scored 515. The other members of the local team did not place so highly.

Fairfield Air Depot:

Now that the first dandelion has shown its head, all the golfers have gotten out their niblicks and are preparing for their annual bout with par, that is, they will if it ever stops raining. The course has been lengthened somewhat, and several new greens installed. So far, the course has never been played in par, but every golf enthusiast has a tomorrow.



Scott Field, Ill.:

Four volleyball games have been played so far. The 9th Airship Squadron is the leader, with four wins; Staff is second with two wins and two losses; and the 15th Obs. Squadron and Station Complement are last with one win and three losses each.

In the Boxing Show at Scott Field, there were six events at the Gymnasium on April 15, the last event a wrestling exhibition, Pvt. Edw. Eckleberry defeating Pvt. Paul Bundy, both of the Station Complement.

The main bout, a 10-round affair, 160 lbs., was won by Clarence Schaulters, ex-soldier of Scott Field and now a civilian employe, over Bob Skiller, of Belleville.

The three preliminary bouts, 6 rounds each, 210, 160 and 128 pounds, respectively, were won by Pvt. Joe Boynton, 9th Airship Squadron, in a knockout, fourth round; Pvt. Edw. Eckleberry, Station Complement, in a knockout in the first round; and 'Frog' Vidal, former member of the 9th Airship Squadron, (decision).

In the semi-final bout, 8 rounds, 148 pounds, Red Roach of Belleville defeated George Langner of Belleville by judges' decision in a fast moving affair.

LIEUT. DENSFORD BREAKS WORLD PISTOL RECORDS

Lieut. Charles Densford, of Kelly Field, Texas, sensation of local pistol shooting ranks for the past several years, on Thursday, April 16th, held one unofficial world's record and what was believed to be another unofficial mark, after an outburst of efficiency over the national match course Wednesday at the Exposition grounds range.

The Texas champion of 1932, who leads local pistol shooters almost every time they fire, shot 293 out of a possible 300 over the national course, besting the official world's record of 288, held by Hemming of the Detroit police team, and the unofficial mark of 291, held by Wheeler of the Los Angeles police. To be official, a record score has to be fired over a course with sliding targets. The Exposition range lacks the required kind of targets.

Lieut. Densford fired his second round of the course in 286 for a total of 579, a score that local observers believe to be a world's high for two rounds.

Sergeant W.J. Reed, who was acting as range officer, recorded the score, which was fired under competitive conditions with 12 other shooters as the witnesses.

Results:	S.F.	T.F.	R.F.	
Lieut. Densford	97	97	99	293
	92	98	96	286 - 579

Slow fire at 50 yards; timed and rapid fire at 25 yards.

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INFANTRY OFFICERS IN CONTACT TRAINING

Six officers of the 2nd Infantry arrived at Selfridge Field, Mt. Clemens, Mich., on April 16th, from the stations indicated, for temporary duty for contact training with Air Corps units of the Regular Army for a period of two weeks, viz: Lieut.-Colonels Charles W. Dyer, Arturo Moreno, Captain Walter S. Strange, 1st Lieuts. Jonathan D. Hawkins and Wilfred J. Lavigne, from Fort Wayne, Mich., and Captain Clyde G. Banks from Fort Brady, Mich.

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TECHNICAL INFORMATION AND ENGINEERING NEWS Air Corps Materiel Division

Sperry Gyro Magnetic Compass:

The first Sperry gyro magnetic compass has been submitted to the Materiel Division on six months' consignment for experimental tests (submitted by the Sperry Gyroscope Co., Brooklyn, New York). If this instrument proves satisfactory, it will be a very important development.

Night Lighting Installations:

Plans and specifications for additions to the night lighting installations at Crissy, Brooks, Hamilton, Kelly, Lawson, March, and Maxwell Fields were released to the Office, Chief of the Air Corps, on April 9, 1936. These installations will be completed this fiscal year.

Photographic Equipment:

One 16-foot trailer chassis and wooden shell are being procured for the purpose of developing a transportable laboratory to house completely all of the equipment needed to process standard aerial film and produce from 100 to 150 photographic prints per hour for Corps Observation use.

The unit will be divided into two light-tight compartments, - one for carrying on the film developing, drying and numbering, together with the drying, sorting and laying of the photographic prints, and the other for the complete printing and processing of the prints.

All of the equipment required for this trailer will be of light weight, compact construction, and will be used also in the transportable-by-air tent laboratory that is being developed at this time.

The trailer is to be self-sustaining, having its own power and water supply.

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AIR CORPS

NEWS LETTER



THE NATIONAL GUARD AVIATION NUMBER

ALABAMA

ARKANSAS

COLORADO

INDIANA

MARYLAND

MINNESOTA

NEW YORK

MISSOURI

MICHIGAN

PENNSYLVANIA

OHIO

NEW JERSEY

TEXAS

TENNESSEE

WASHINGTON

CALIFORNIA

CONNECTICUT

ILLINOIS

MASSACHUSETTS

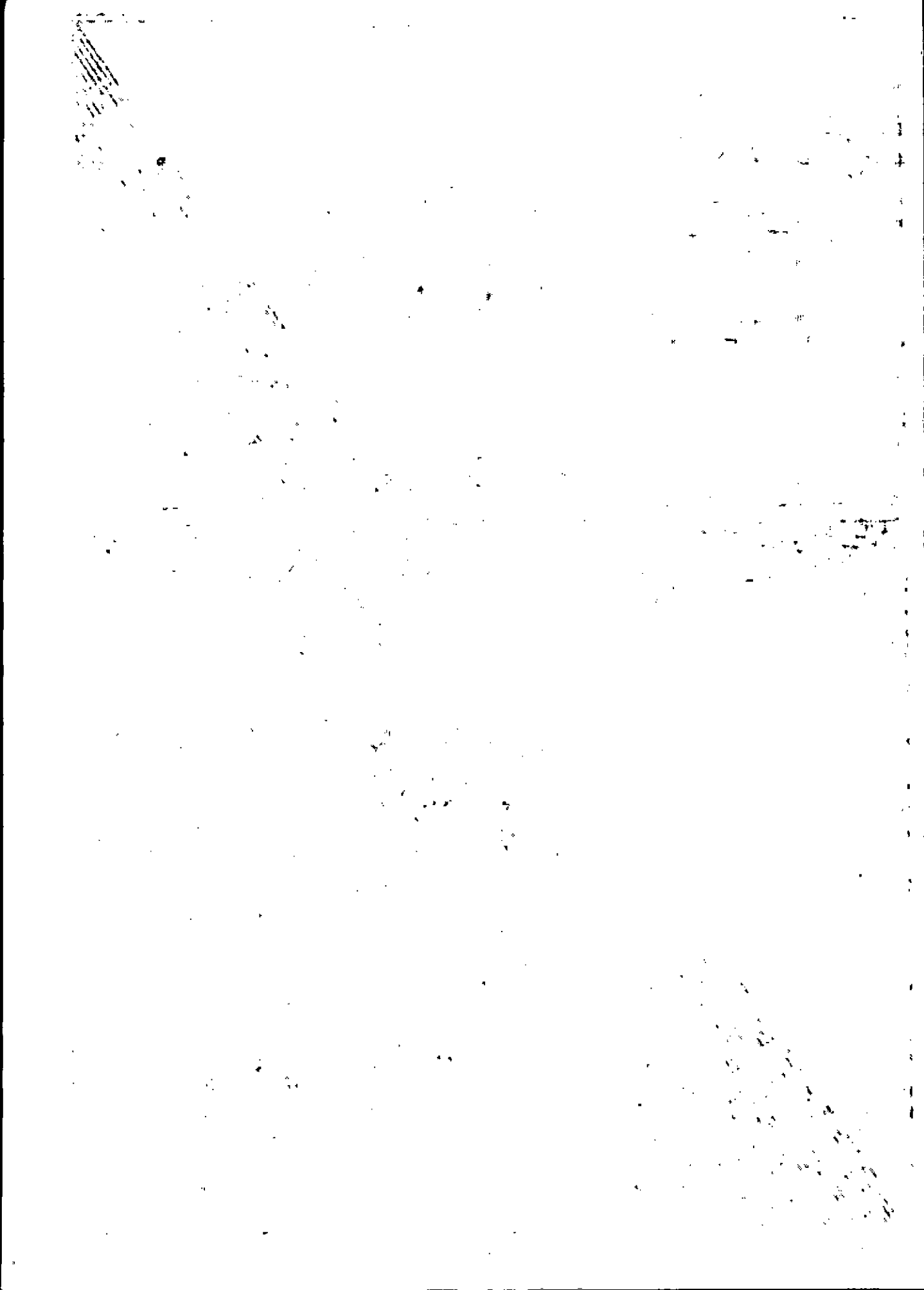
**ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D.C.**

VOL. XIX

MAY 15, 1936

NO. 10

Dunham



Information Division
Air Corps

May 15, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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GREETINGS FROM THE SECRETARY OF WAR

I have always sought to insure that the interests of the National Guard shall receive careful consideration in the formulation of War Department policies. I have been especially interested in the aviation of the National Guard, and I desire to express to the Governors, State Adjutants General and the commanders of the National Guard Divisions my appreciation for their cooperation with the War Department in securing suitable ground facilities for the aviation units of the Guard. Quarters, hangars, shops and servicing equipment now available permit efficient operation.

I have noted with satisfaction the high morale and efficiency displayed by the air squadrons during their annual encampments and exercises. The pilots of these squadrons have also made a distinct contribution to the national welfare by furnishing aid in flood relief, in searching for lost aviators, in obtaining weather data for the Weather Bureau, and in many other ways. The aviation activities of the National Guard have fully maintained the splendid tradition of readiness for service which the Guard as a whole has long supported.

I extend to the aviation personnel of the National Guard my heartiest congratulations upon the success you have attained and my best wishes for your further success.


 SECRETARY OF WAR.
GREETINGS FROM THE CHIEF OF STAFF, U.S. ARMY.

I desire to extend warmest greetings to the aviation personnel of the National Guard and to felicitate you upon your record of achievement. It has been a pleasure to me to witness your steady growth in efficiency and to find you so successful in your efforts to obtain better airplanes and equipment for your squadrons.

Your accomplishments in improving the state of flying training in the units have been noteworthy. The increase in formation and cross country flying and in instrument and night flying has done much to add to your readiness for service in the field. It is a great satisfaction to know that you are so well prepared to share with the Air Corps the duty of providing aviation's contribution to National Defense.

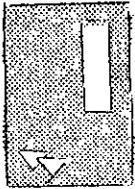
I know the National Guard divisions all feel the greatest pride in their observation squadrons and I can assure you that the Regular Army is happy in the thought that these nineteen splendid units are available to support our operations.

Please accept my best wishes for your continued success.


 MALIN CRAIG,

Chief of Staff, U.S. Army.

34TH DIVISION AVIATION, MINNESOTA NATIONAL GUARD
(109th Observation Squadron)
Holman Municipal Airport, St. Paul, Minn.



In July, 1920, Major Ray S. Miller, of St. Paul, Minn., gathered together several war-time and barnstorming pilots and formed the first National Guard Air Squadron in the United States. Today, Major Miller commands the development of that pioneer group, the 109th Squadron, 34th Division Aviation, which, in spite of hardships and vicissitudes, and through the splendid unselfishness of its personnel, has grown to its present enrollment of 22 officers and 95 enlisted men.

The home hangar of this Squadron is located at the Holman Municipal Airport in St. Paul. This excellent airport, named in memory of the late Charles "Speed" Holman, nationally famous flier of a decade ago and a home town boy, is located within the city limits of St. Paul, only one and one-half miles southeast of the court house and central business district.

The airport is desirably located within a horseshoe bend in the Mississippi River, on flat ground, nestling within encircling hills. The field, altitude 703', is earth-filled and is constantly being extended and improved under Government supervision. The improvement of the airport, in fact, is an adjunct of another important Government project in St. Paul, which is the practical head of navigation on the Mississippi River, namely, maintenance of navigation, as the earth pumped from the river bed to maintain the channel is used to fill in the airport extensions. At present, the field has two paved runways, 1600' by 150', and one turf runway N.W./S.E., 3600' by 600', and the usable area of the field is marked with boundary markers. The field is equipped with a code beacon flashing "S," flood lights, rotating beacon, and a teletypewriter operated by the Department of Commerce. Attendants are in charge day and night, the usual obstruction markers are furnished, and every facility for servicing aircraft is available 24 hours a day.

The Squadron hangar is 120' by 200' and includes, in addition to hangar space, a shop, garage, armory, administration office, officers' club room, shower and locker rooms for enlisted men and officers, and rooms for communication, photographic and medical sections. The flying equipment consists of Douglas O-38's.

Naturally, the Squadron in its long and eventful career has engaged in many flying activities, some of which were unusual and interesting in the extreme. For example, in 1922, the Squadron was on active duty for three months in the

forest regions of northern Minnesota during the extensive fires, and took every advantage of the excellent opportunities afforded to engage in diversified types of flying under the most unusual conditions existent.

During National Maneuvers in 1931, Major Miller, Squadron Commander, was selected as group commander. Also engaging in the Maneuvers from the Squadron were Captain G.M. Palmer, Army Instructor; Captain A.W. Nelson, Operations Officer; and Lieuts. Thomas D. Lane and Hal S. Paul.

Weather conditions throughout the year in St. Paul are sufficiently diverse to afford the opportunity of flying under any conditions from the tropics to the Arctic. In the summer, temperatures range up to 106°, and in the winter down to 35° below zero. For a stretch of 35 days in January and February, 1936, the temperature was below zero every day and reached the frigid depth of 35° below. If the officers in the squadrons further south will couple that last statement with the fact that all our ships except one are open jobs, it will be quite apparent that, while we have our heat waves, we get an excellent opportunity to cool off. However, under the most inclement weather conditions, the drill attendance percentage has kept up remarkably well.

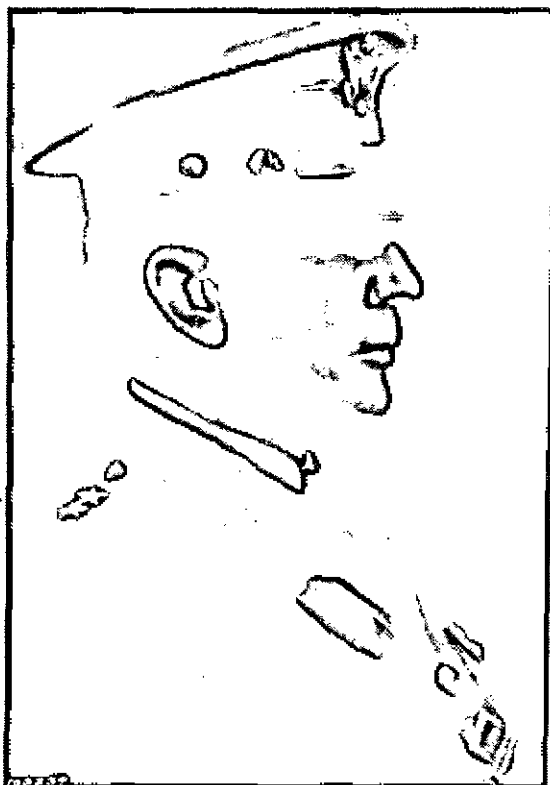
The latch string is always out at the Squadron headquarters for visiting fliers, and don't forget that, since we are practically downtown with our airport, the most dangerous hazard of the trip, the ride from the field to the hotel, is practically eliminated.

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RECOGNITION OF NATIONAL GUARD SQUADRONS

The 19 National Guard Squadrons were Federally recognized on dates given below:

Squadron	Division	State	Date
109th	34th	Minnesota	Jan. 17, 1921
104th	29th	Maryland	June 29, 1921
101st	26th	Mass.	Nov. 18, 1921
105th	30th	Tennessee	Dec. 4, 1921
113th	38th	Indiana	Aug. 1, 1921
106th	31st	Alabama	Jan. 21, 1922
102nd	27th	New York	Nov. 4, 1922
110th	35th	Missouri	June 23, 1923
120th	45th	Colorado	June 27, 1923
111th	36th	Texas	June 29, 1923
118th	43rd	Conn.	Nov. 1, 1923
115th	40th	Calif.	June 16, 1924
103rd	28th	Penna.	June 27, 1924
116th	41st	Wash.	Aug. 6, 1924
154th		Arkansas	Oct. 24, 1925
107th	32nd	Michigan	May 7, 1926
112th	37th	Ohio	June 20, 1927
108th	33rd	Illinois	July 1, 1927
119th	44th	N.J.	Jan. 1, 1930



GREETINGS FROM THE CHIEF, NATIONAL GUARD BUREAU.

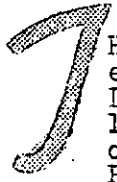
The National Guard is proud of its air units. The state of training and the esprit of its nineteen squadrons measure up to those fine standards and traditions established by the airmen of the Regular Army. This is not surprising, since some fifty percent of our flyers won their wings at the Air Corps Training Center, while the remainder proved their right to fly in the rigorous schools of the great commercial lines or during the World War.

Well do we realize, however, that these things alone cannot account for the outstanding efficiency of our air units. To the Regular Air Force for its consistent cooperation and helpfulness must go a large share of the credit. Probably in no other arm or service does such intimate liaison exist. The results attained in this instance should prove a beneficial object lesson to both the National Guard and the Regular Army.

I congratulate the officers and men of the National Guard aviation units on their high morale, their unselfish devotion to duty, their loyalty, and their keen desire to serve the best interests of their State as well as the nation as a whole, and I extend my best wishes for their future well being.

Albert W. Branding
MAJOR GENERAL
CHIEF, NATIONAL GUARD BUREAU.

29TH DIVISION AVIATION, MARYLAND NATIONAL GUARD
(104th Observation Squadron)
Logan Field, Baltimore, Md.



THE 29th Division Aviation, the eyes of "The Blue and the Gray Division," is composed of the 104th Observation Squadron (23 officers and 65 men), the 104th Photo Section (1 officer and 20 men), and the 104th Medical Detachment (1 officer and 5 enlisted men).

HISTORY.

During 1919 and 1920, the Flying Club of Baltimore was organized, and such interest in aviation was aroused in and around that city that the Air Corps was prevailed upon to send planes each Saturday to Baltimore for the use of Air Corps Reserve officers who were members of the Club. Much use was made of this service. It was during a celebration given in Baltimore that the present Logan Field received its name. A most unfortunate aircraft accident occurred, a Nieuport 28, flown by Lieut. Pat Logan, crashing, resulting in his death. Shortly thereafter, the field which was used for this demonstration was named Logan Field.

Upon the passage of the National Defense Act, provisions were made to form Observation Squadrons in the National Guard, and during the latter part of 1920, General Milton A. Reckord, the Adjutant General of Maryland, appreciating the interest being shown in aviation, requested that a Squadron be established in Maryland.

During March, 1921, a group of five Air Corps Reserve officers met with a representative of the State of Maryland to formulate plans for the establishment of such a Squadron. These men were Major George L. Jones, Captains John A. Hambleton, Paul V. Burwell, W.D. Tipton, Temple N. Joyce and Lieut. Charles A. Masson. At this meeting it was agreed that a Squadron could be formed, and Major George L. Jones was recommended to command the organization and supervise the formation of the Squadron. Several days later, Captains Burwell, Tipton and Lieut. Masson were commissioned and assigned to assist in the forming of the Squadron. From the first meeting in March, 1921, until June 29, 1921, the 104th Observation Squadron was recruited up to strength and Federally recognized on that date. Shortly thereafter, the 104th Photo Section and the 104th Medical Section were formed and Federally recognized.

General Charles T. Menoher was Chief of the Air Corps at the time and General William Mitchell was his assistant, and through their offices we were able to have assigned several "Jennies" for our sole and separate use. Four war-time Bessoneau hangars were obtained, and, with the use of several old buildings on the field for headquarters, we were

ready to go to war.

During the winter months, drills were held at an armory in the city and, with the first call of the robin heralding spring, we transferred our operations to the field.

On the Decoration Day following the organization of the Squadron, an aircraft show was held at Logan Field, and this was continued for ten consecutive years. In this manner the public had an opportunity to inspect the various types of aircraft and witness demonstrations in the gentle art of flying in all its phases.

During the early part of 1922, Major Jones resigned, and shortly thereafter Capt. Hambleton did likewise. Captain Burwell was promoted to a Majority and was placed in command of the organization.

Our first encampment in the field was during July, 1922, at Langley Field. Col. Danforth was then commanding officer at that field and he, being a former National Guard officer, appreciated our many difficulties. It was through his efforts that our 15-day period was made more pleasant and effective from a training standpoint, as he permitted the officers to fly any and all ships on the field as rapidly as they qualified. Rex Stoner was Engineering Officer of the A.C.T.S., and he turned over for our use SE-5's, TM's, Fokkers, DH's and, occasionally, we were permitted to get a bit of dual in a Martin Bomber. At the end of this camp, five practically new "Jennies" were turned over to us to fly home and add to our "covey" of three in the hangar at Logan Field. We looked forward with much pleasure to returning to Langley each year from 1922 to 1926, inclusive, as we were able to obtain a diversified bit of flying training, using the A.C.T.S. ships.

Due to business which required him to be absent from the State, Major Burwell resigned during 1924, and Captain Tipton was promoted to a Majority and placed in command. He took the Squadron to Langley Field for his first camp as commanding officer in 1925.

By the next camp time, in 1927, it was felt that we had progressed sufficiently to go into the field proper, i.e., out in the great open spaces, so Shepherd Field at Martinsburg, W. Va., was picked as the site. An advance detail preceded the Squadron about a week, and when we arrived a trim looking mess shack and other buildings had been thrown together in a beautiful apple orchard bordering the field. It was a lucky site, as the Mess Officer, toward the end of camp, realizing we were ahead of our allowance, would give us fried apples for breakfast, apple sauce for lunch and apple pie for supper. Field camps were held at

Martinsburg in 1927, 1928 and 1929, and during these three encampments we worked very closely with the 29th Division Staff, who were located at Cascade, Md.

During 1929, regulations were promulgated permitting a new staff officer, known as Division Aviation Officer, and Major Tipton was transferred to the 29th Division Staff as D.A.O., during June, 1930, and Capt. Charles A. Masson was promoted to a Majority and placed in command of the 29th Division Aviation in June, 1930.

During August, 1930, the Squadron returned to Langley Field for its summer encampment to obtain practice in aerial gunnery and bombing, and the 15-day period was devoted entirely to this work.

During the fall of 1931, the 29th Division troops, desiring to have their air service somewhere near their own camp at Cascade, built a permanent set-up on the Department of Commerce field at Frederick, Md., and by camp time the new quarters were available and remain our camp site to date, being used during 1931, 1932, 1933 and 1934.

During 1935, the 29th Division Aviation encamped at Middletown Air Depot, along with the 28th Division Aviation of Pennsylvania, to cooperate with the 3rd Corps, acting as a reserve for the 1st Army, whose main force was in and around Watertown, N.Y. This coming year we return again to the hills of Pennsylvania to carry on with the 29th Division, which will be assembled as an entire unit at Indiantown Gap, Penna.

This air unit was exceptionally fortunate in its early days to fly with "Jennies," and quite a few cups were won in formation contests at air shows in competition with the Regular Army, Marines, Navy and other Guard units throughout the east. The organization from its inception has played hard when it was time to play, and has been just as much in earnest during working hours as any unit in the service.

The outstanding feature of the organization is the fact that from the date of its Federal recognition to the present time there has not been a fatal accident; in fact, no real serious ones; and when one takes into consideration the ships flown in the beginning without parachutes and the transition to heavier service types during the last seven years, it is believed that such a record is worthy of more than passing comment.

The Airport - Logan Field

The field is municipally controlled, and the State rents a portion for hangars, as well as the use of the field proper, from the city. There are three runways, all of which are over 2,000 feet. The entire field is available for landing. Weather Bureau and Department of Commerce service are available. The hangars are the old army type, steel frame with tar-covered corrugated iron

sheet sides and roof and, while not modern or up-to-date, they adequately take care of our present needs. For administration purposes there are two portable type buildings of wood construction, which are adequate for our needs under the present set-up on a leased field.

The city has just received approval from the Federal Government (PWA) to complete its new airport, and the State will undoubtedly arrange for adequate modern hangars and administration buildings. In fact, drawings and plans are now being studied with this objective in view.

Summary of Flying Activities and Training

Flying activity of the organization is an abbreviated form of the Training Directive of the Air Corps. Flying is very strictly controlled through operations with a view of diversifying the flight training to follow the Air Corps Directive. During the winter months (November 1st to April 1st) airways, instrument and radio flights are carried on after classes in radio buzzer and other types of ground training. Commencing April 1st to camp period, a tactical problem is developed by the instructor, progressing from week to week to develop tactical work commensurate with the requirements to be encountered while in camp with the Division as a whole or the Division Staff, as the case may be. Unusual methods developed by this organization and strictly adhered to are as follows:

(1) One ordered drill period each week, on Saturday from 2:30 p.m. until dark, and all officers and men of the Squadron, Photo Section and Medical Section carry on their respective duties.

(2) a. Officers of the grade of Captain for the past five years are assigned to staff work, as department heads, i.e., Headquarters, Medical, Operations, Plans and Training, Engineering and Supply. Junior officers are assigned to these sections as assistants, and each year a re-assignment is made.

b. The balance of the junior officers are assigned to other sections, i.e., Photo, Radio, Transportation, Armament, Mess. There are also assistants assigned in each of these sections to avoid any difficulty should an officer resign or be absent because of ill health or business connections. Over a period of years every officer learns the duties and requirements of the various sections in a squadron, and it better qualifies him later to command the Squadron in peace time or in time of emergency adequately to fill any vacancy.

c. Visual charts of attendance by sections are maintained by section leaders. Visual charts of flight time, as well as types of missions, are also maintained.

d. Section leaders prepare winter training programs for their own sections

(Continued on page 12).

38TH DIVISION AVIATION, INDIANA NATIONAL GUARD
(113th Observation Squadron)
Stout Field, Indianapolis, Ind.

THE 113th Observation Squadron, 38th Division Aviation, was organized in February, 1921, and reorganized as the 137th Squadron (Observation) on August 1, 1921, at Kokomo, Indiana. The personnel was obtained by original commissions and enlistments. Redesignated as the 113th Squadron (Observation) on January 10, 1923, disbanded June 9, 1926, and reorganized at Indianapolis, June 10, 1926.

Commanders: Major Wilbur Fagley, February 1921, to June 30, 1922.

Major James C. Patten, July 1, 1922, to June 9, 1926.

Major Richard F. Taylor, June 10, 1926, to September 10, 1932.

Present commander, Major Oliver H. Stout, since September 11, 1932.

During the World War there was a Squadron bearing the number "113", namely the 113th Aero Service Squadron, organized at Ellington Field, Texas, per par. 3, S.O. #65, Hqrs. Ellington Field, March 13, 1918. Redesignated Squadron "C", Ellington Field, July 24, 1918. As of December 1, 1918, Squadron "C" was consolidated with other Ellington Field Squadrons (A, I, K, N, X and Z), to form the "Flying School Detachment, Ellington Field", per par. 7, S.O. 294, Hqrs. Ellington Field. This Flying School Detachment was demobilized at Ellington Field, September 1, 1919.

The Historical Section of the Army War College is now engaged in a study involving final cases of reconstitution of World War units and their consolidation with existing units. It has been recommended that the World War 113th Aero (Service) Squadron be reconstituted and consolidated with the present 113th Observation Squadron. However, the recommendation can not be acted upon until the entire study is completed.

Stout Field, the home of the 38th Division Aviation, consists of 220 acres situated about $4\frac{1}{2}$ miles southwest of the center of the city. Facilities include a brick Headquarters building with hangar space 100 feet by 120 feet with shop and operations office, officers' locker room, armament section, stock room and Quartermaster supply room on the ground floor; squadron offices, enlisted men's locker room, parachute room and four class rooms on the second floor. There are three metal hangars with concrete floors situated north of the administration building, also a one-story building housing the 113th Photo Section, 113th Medical Department Detachment, a restaurant and

two rooms devoted to the use of visiting pilots. The restaurant is open between the hours of 7:30 A.M. and 5:00 P.M. and all day Sunday. South of the Administration building is a small brick building housing the Communications Section of the squadron and the oil house. All buildings except the three metal hangars, are heated by steam from a central plant in the basement of the Administration building. The field is equipped with boundary lights, lead-in and obstruction lights. Boundary lights do not burn all night, but a watchman turns same on when needed. There is installed a 25,000 gallon storage tank using the Aqua System for delivery. There is an underground pipe line to switch site east of field. There are no runways, but the field is well drained and is usable at all seasons of the year.

The ground for Stout Field was purchased by the State of Indiana in 1927. In that year two metal hangars were moved from Kokomo, Indiana, and re-erected on the new field. Improvements came slowly at first. Several years were required to level off the surface of the field. In 1929, the State bought and erected a third steel hangar. In that year also the Curtiss Flying Service leased a portion of the field and erected the present brick hangar and Administration building and the building now occupied by the restaurant, Photo Section and Medical Detachment. In 1931, the State bought and converted to the use of the 38th Division Aviation all of the facilities of the Curtiss Flying Service which had abandoned its Indianapolis base.

In 1934, projects for the improvement of Stout Field were initiated under F.E.R.A. and subsequently continued under W.P.A. A drainage ditch was dug along the north and west boundaries of the field. A second story on the east side of the Administration building was constructed to provide additional class rooms and additional space for an enlisted men's locker room. Also a new heating system, utilizing a hand-fired, coke burning boiler and unit heaters, was installed. The facilities of the photographic and communications sections were enlarged and modernized.

Projects now under way will provide additional hard surfacing around the main hangar building, a six car garage, an oil house, an ordnance storage magazine on the west side of the field, the tilting and filling of the drainage ditches on three sides of the field, an outdoor pistol range, and an indoor rifle range.

(Continued on page 9)

26TH DIVISION AVIATION, MASSACHUSETTS NATIONAL GUARD
(101st Observation Squadron)
Boston Airport, Boston, Mass.



EARLY in 1921, the Air Service of the Massachusetts National Guard was organized by a group of war-time pilots and observers who were then members of the "Archie Club," the membership of which was composed of Air Service officers who flew over the front lines. Known as the 1st Aero Unit, the Squadron was Federally recognized November 18, 1921.

At the time of Federal recognition, the organization was distinctly "on the ground." The quarters provided for assembly were in a State armory in the heart of the City of Boston, and there were no organized flying facilities. The Boston Airport did not come into existence until 1922, and the little flying done by the pilots of the Squadron was performed at the old Army Reserve station at Framingham, Mass.

After the establishment of the Boston Airport, the Squadron was issued two standard Air Service hangars which, after much delay, were erected by the State. For the first year of active flying, the organization was loaned a few Jennies. It was not until the second year that the Squadron had its own airplanes. The facilities of the airport were primitive in the extreme. It was months before any water was available, either for servicing Hisso's or washing faces, and the effect of an afternoon's flying off the cinder runways made the lack felt the more. It was years before light, power and telephones were installed. For eight years the sanitary facilities consisted of the well known outdoor contrivance. A gradual increase in quarters at the airport took shape in the form of two old war-time shacks, moved from the old cantonment at Camp Devens, 30 miles away, and one portable building of the type ordinarily purchased by the foot. The only heat available to stave off the rigors of New England winters was given by numerous coal stoves of various sizes and vintages. During the winter months, the heating of oil and water was accomplished concurrently with the thawing out of personnel. During this time the organization was still quartered in the city Armory, and as it increased its personnel, the quarters there proved almost as inadequate as those at the Airport.

There came a day when the enlargement of the Boston Airport left the Squadron's hangars located in the exact center of the flying area, and it was many months after all other buildings had been moved before the hangars were moved to a new location at the edge of the field. This move did the buildings no good. They soon became so decrepit that the Militia Bureau sent several reports

concerning the "lack of suitable housing facilities." The officers of the Squadron had made repeated efforts to obtain State funds in order to improve the quarters and to centralize activity by providing space enough at the Airport so that the armory quarters could be abandoned. All such efforts had met with failure which, as subsequent events proved, was the greatest fortune the Squadron could have had. The situation had become so acute in 1932 that it was apparent new quarters were imperative. Consequently, an appropriation of \$250,000 was asked of the State, and it was received. With this sum, and with building materials and labor at their lowest levels, the organization built the present sumptuous quarters.

These facilities comprise hangar and shops, office and assembly spaces, all under one roof. The building has approximately 45,750 square feet of floor space. The hangar is 110 feet clear width and 165 feet long, with 22 feet clear under the roof trusses. The hangar door is 100 feet wide and is of the electrically operated lift type. All the different sections and activities of the organization are provided with ample working space and equipment. The laboratory of the 101st Photo Section is the finest to be had. It consists of a large developing room, separate printing, finishing, and enlarging rooms, a chemical mixing laboratory, a loading room, a large store room, a mosaic assembly room, and a headquarters. The communications section has a large laboratory and a radio station, with suitable storerooms and offices. The armament section is provided with a gun strong room, a workshop, ammunition storeroom, offices and a pistol range. There is a parachute packing room, with splendid light and ventilation. The hangar is flanked with shops, Air Corps storerooms and service facilities. The garage will house nine vehicles. There is even a special workroom for the use of the tow target detail. The office section provided a large headquarters, the various examination rooms of the medical section, the office of the Division Air Officer, a recruiting section, and operations and engineering offices. There is an elaborate reception room for visitors, and the officers lounge is a thing of beauty.

The Officers' Club presents many unique features, and its operation has been enjoyed by many who are now members of the Pious Club. Men's and officers' locker rooms are large, light and airy, and are equipped with large lockers. The toilet facilities are modern in the extreme. No expense was spared to provide equipment and furnishings suitable to its intended purpose. The design of the building corresponds with other Airport struc-

tures.

The 26th Division Aviation has participated in some interesting flight missions. Part of the advanced training of flights consisted of establishing an operating base away from the Squadron airdrome during summer camp, (humorously known as security by dispersion). The incidents surrounding the experience of "A" Flight's mission of this nature made history, particularly when the Flight was required to engage in ensuing missions improperly attired, or with no attire at all, due to the interest that "B" Flight had taken in the maneuver. A further advance in training required an extended night cross-country flight, performed by combat teams only. This consisted of an all night flight from Boston to Cleveland in the dead of winter, with the temperature on the ground 5 above zero. Starting at 11:00 p.m., the flight arrived

in Cleveland at 9:00 a.m., having been forced down at Syracuse in a blizzard, and pushing ships around at Buffalo for service at 3:00 a.m. in a gale, below zero. The wreck of an American airliner in the Adirondack Mountains brought out the Squadron to search the country side in bitter cold weather. Day and night for three days, with observers putting in 18 hours in that time under the most trying conditions, the Squadron personnel searched until the wreck was located and the persons aboard rescued.

The Squadron boasts of no Caterpillars. There has been only one fatality in the entire history of the unit, and that was eleven years ago. The only injury due to flight duty since then was a bump suffered by an observer when his airplane became tangled up in some high tension wires during the course of a flight while making a survey of ice conditions in New England.

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WORKS PROGRESS ADMINISTRATION AID TO NATIONAL GUARD AVIATION

The report of the Works Progress Administration, released to the press on May 3rd, discloses that the Airports and Airways Division of that governmental activity, under the able administration of the Division Air Officer of the 31st Division, Alabama National Guard, has been instrumental in affording valuable aid to National Guard aviation units throughout the United States.

This assistance serves the double purpose of providing relief employment and making a lasting contribution to the National Defense. At the same time, it is a direct aid to the hard pressed States struggling with their own individual problems of relief. The Works Progress Administration is to be congratulated upon this especially worthy objective of their activities.

Space prevents the inclusion of details of the work being done for the National Guard Aviation Units for the various States. The following is a summary:

The 45th Division Aviation, Colorado National Guard, Lowry Field, Denver, Colorado, has received Works Progress Administration funds for construction of a very commodious steel and concrete building, 148 by 184 feet overall, containing 16,300 square feet of hangar floor space. The 154th Observation Squadron, National Guard (Corps Obs.), Little Rock, Arkansas, has received WPA funds for improvement of their hangars; the 31st Division Aviation, Birmingham, Alabama, has received WPA funds for new quarters; the 30th Division Aviation, Nashville, Tennessee, has received WPA funds for new quarters; the 41st Division Aviation, Spokane, Washington, has received an allotment of WPA funds; and the 27th Division Aviation, Staten

Island, New York, has received WPA funds for quarters and landing field improvements. Plans and application are being prepared for submission to the Works Progress Administration for replacement of quarters and hangars for the 43rd Division Aviation, Brainard Field, Hartford, Connecticut. The buildings of this unit were so badly damaged by the flood in the Connecticut River valley in March, 1936, that replacement will be more economical than repair. The water came over a 35-foot dike protecting Brainard Field, finally breaking the dike and causing an exceedingly destructive rush of flood waters over this field. This caused a serious loss to the 43rd Division Aviation, as their quarters and hangars were of a modern and commodious type. The 28th Division Aviation also has a plan and application prepared for submission to the Works Progress Administration, covering quarters at the Philadelphia Municipal Airport, Philadelphia, Pa. Applications have been approved by the Works Progress Administration, but work has not actually started on projects for the 33rd Division Aviation, Chicago, Illinois, and for improvement of the landing field of the 38th Division Aviation, Indianapolis, Indiana.

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MAJOR McCORMICK JOINS CATERPILLAR CLUB

While returning on April 30th in a P-26C airplane, from Barksdale Field, La., on completion of aerial gunnery practice, Major Harlan T. McCormick, Air Corps, stationed at Selfridge Field, Mt. Clemens, Mich., was forced to "bail out" over Elizabethtown, Ky., when the propeller broke in flight. Major McCormick suffered no injury.

30TH DIVISION AVIATION, TENNESSEE NATIONAL GUARD
(105th Observation Squadron)
Sky Harbor, Murfreesboro, Tennessee

WHAT is now the 105th Observation Squadron of the National Guard of the United States was formed in the early fall of 1920. For over a year the men met and conducted their drills and gave and received what instructions they could without any equipment. The Squadron could pass all of the requirements for Federal recognition, except for a landing field and hangars. In 1921, Mr. H.O. Blackwood, of Nashville, made a donation of \$1,000 in cash, which enabled the Squadron to obtain its first hangar and thereby qualify for Federal recognition. The field was rented by the State and named Blackwood Field, in honor of Mr. Blackwood. Federal recognition was granted in December, 1921, and our Squadron became the fourth National Guard Squadron in the United States. We were the first to organize, but lack of hangar and field forced us to take fourth place in the ranks of the Federally recognized Squadrons.

The first hangar obtained was from Park Field, in Memphis, and Mr. Blackwood's donation went in great part to paying for its transportation and erection on Blackwood Field. This was the first of many journeys that this hangar was destined to make. The hangar was erected on a field close to The Hermitage, the former home of Andrew Jackson. The first location of the Squadron is commemorated in our insignia, which is carried on all of our planes. This insignia is a picture of Mills' equestrian statue of Andrew Jackson, which is located on the Capitol grounds of Nashville. The only change that has been made is that the feet of the horse now rest on the clouds. We firmly believe that General Jackson would be found in the Air Corps if he were alive today.

The Squadron then moved to McConnell Field, a small municipal field at Nashville. This field was named in honor of Lieut. Brower McConnell of the 105th Observation Squadron, who was killed in a crash at Langley Field, Va., while on duty with the Regular Army. Our hangar moved with us, and the Squadron operated from McConnell Field for several years.

The Squadron was then transferred to Memphis, Tenn., in the fall of 1930. Regardless of their years of service and their qualifications for continued service in the Air Corps, the entire personnel of the Squadron were discharged and left as they had been in 1920, with no planes, no equipment and no organization. It was at this time that the spirit that has marked the 105th since its early days was most clearly in evidence. The

Squadron continued to meet and to drill each week. The personnel retained their old rank in their own eyes and in the eyes of their fellow soldiers. No pay was received for these drills, and we really had nothing to help us through those dark months but a memory and a hope. Within six months our hopes were realized. The Squadron was returned to Nashville, and we stepped in and carried on as we had done before.

Our stay at McConnell Field after the return from Memphis was very short. We were notified that we would have to move and would have to provide an airport that would pass inspection by government officials. Through the courtesy of the American Airlines, we were permitted to move to Sky Harbor at Murfreesboro, and to use the hangar built and owned by American Airlines and to operate from their field. Had it not been for this kindness, the Squadron would have been without even a temporary home. We were allowed to use all of the buildings owned by the American Airlines except their operations office, and we were given offices beside the hangar that were sufficient for our purposes.

Other buildings were needed to house all of our equipment, and the officers of the 105th donated the necessary funds to build a parachute house, garage, a photographic hut and to equip them with the necessary furnishings. It was not the first time that the officers had been called upon to donate part of their salary checks, since the return from Memphis cost them nearly \$2,000. Notes were signed and the necessary funds raised, and we began the long process of repaying our obligations.

We received some much needed help from the CWA Program. One of the jobs assigned was the movement of our well-traveled hangar from McConnell Field to Sky Harbor. They started the erection of the hangar there, but it has never been completed. We have a roof over our heads, but there are no walls around us. Increased activity and air traffic on the part of the American Airlines made it necessary for us again to hunt for a home. Our planes were being crowded from the American Airlines hangar and we could see that they wanted and needed the entire plant at Sky Harbor. The American Airlines Company has been more than kind to us, and their officials have told us that we were welcome on their field just as long as we cared to stay, and that they would share what space they had with us.

For years we had been hoping for a real municipal airport that was close to Nashville, and finally in 1935, with the aid of Federal funds and a purchase of land made by the City of Nashville, actual

work on this airport got under way. The new airport is located six miles south of Nashville on the Murfreesboro Pike. This location will reduce the number of miles traveled for drill by the 105th from 52 to 12. The field will have a runway North-East by South-East, 500 feet wide and 4,800 feet long. Another runway, North-East by South-East will be 500 by 5,000 feet, and there will be a third runway East and West 500 feet by 3,500 feet. The Squadron will have two hangars, one brand new 120 by 130 feet with lean-tos on the sides. The buildings are to be of stone and, therefore, permanent. We are moving our beloved and much traveled hangar, and we hope that this time it will reach its final resting place. We will also have an Administration building, two stories high, and Assembly Hall, which will be 112 by 48 feet. This all seems much too good to be true, for we have been pushed from pillar to post for 15 years and this is the first time that we can count on a permanent location with buildings that are for our use alone. It is a delightful change from our original location on Blackwood Field, with one sheet iron hangar and 4 airplanes. We believe that our new location will compare favorably with that of any National Guard Squadron in the United States.

The Squadron first attended summer encampment at Montgomery, Ala. Later, for one year we went to Memphis and operated from Woodstock Field there. For the past 8 years we have been attending camp at Camp Jackson, Columbia, S.C. During the winter of 1935, we got word that this summer's encampment would be at Valparaiso, Fla. Our hopes were high, but we have recently received notice that we would again be at Columbia, S.C.

After considerable knocking on wood and extensive propitiation of all the Gods of Chance, we decided to mention the flying record of the 105th. Since its organization and recognition in 1921, the pilots of the Squadron have flown many types of airplanes from many different fields and in all kinds of weather and on all types of missions required by Army Regulations. During those 15 years there has been only one fatal crash in connection with Squadron activities. We believe that this is a safety record that cannot be beaten by any other National Guard Squadron in the United States.

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38th Division Aviation, Indiana N.G.
(Continued from Page 5.)

Upon completion of present projects, a supplemental project will be asked for to brick veneer the three metal hangars at the north end of the field. For a number of years the 38th Divi-

sion Aviation has ranked high among the 19 squadrons of the National Guard in total flying time. Emphasis has been placed on radio and photographic work, instrument flying and aerial gunnery, using camera guns. The 38th Division Aviation has been called out on State duty several times during emergencies, such as strikes and floods. Considerable photographic mapping has been done for State governmental agencies, such as Purdue University. This work will eventually provide an aerial survey of all of the 93 counties comprising the State of Indiana. The Squadron has also enjoyed the privilege of training with the Regular Army units at Fort Knox, Ky., such as the 68th Field Artillery and the 1st Cavalry (mechanized). These missions for the Regular Army consisted in artillery adjustment and march and battle reconnaissance.

Since the installation of boundary and obstruction lights at Stout Field, a great deal of attention has been paid to perfection of pilots in night missions.

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33d Div. Aviation, Ill. National Guard
(Continued from page 27).

the Regular Army, Department of Commerce, as well as various National Guard officials.

The present hangar accommodations are somewhat cramped, and additional space has been rented for some of the departments in stores across the way from the airport. The proposed new hangar is expected to make the rented quarters unnecessary if and when it is completed.

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AFTERMATH OF ERUPTION OF MAUNA LOA

The historic attack by the 5th Composite Group, Luke Field, Hawaii, on the "Red" Forces of "Madame Pele" in her subterranean stronghold of Mauna Loa; whereby she was compelled to abandon her advance on the city of Hilo and retire underground, continues to attract world wide attention. Prof. Jagger, U.S. Volcanologist on the Island of Hawaii, who conceived and planned the attack carried out by the Air Corps, after lecturing locally on the bombing of the lava flow, is reported to be leaving, at the invitation of the British Government, to study volcanic activities on the Island of Montserrat in the West Indies. The fame of the 5th Composite Group goes with him.

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Progress on the new runway at Luke Field, T.H., in process of being installed at a cost of some \$100,000, more or less, goes forward rapidly. It is hoped that it may be completed by May 27th for the Department Commander's annual inspection which is scheduled for that date.

31ST DIVISION AVIATION, ALABAMA NATIONAL GUARD
(106th Observation Squadron)
Roberts Field, Birmingham, Alabama.

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HAT a man shall serve his country in time of war is noble, brave and patriotic; but that a man shall properly prepare himself in time of peace to serve in war is all these things and more. It is noble with nobility which is real, not ideal. It is brave with bravery which assumes in time of unemotional peace many burdens, among them that of bearing the lack of appreciation of those who do not consider military preparation or training necessary."

These significant words appear as a motto on the letterhead of a civilian flying club formed in Birmingham in 1921, and known at that time as "The Birmingham Escadrille." Its membership was composed chiefly of men who had had Air Corps experience during the World War, and its leader was the late Major James A. Meissner, Air Corps. In 1921, this organization, with the cooperation of Colonel Hartley A. Moon, (then the Adjutant General of Alabama) and several prominent Birmingham citizens, secured for Alabama the Observation Squadron assigned to the 4th Corps Area in the scheme of National Defense.

A Birmingham industrial plant graciously leased, gratis, a tract of its property for use as a flying field. Second hand structural steel and iron salvaged from old wartime hangars was located and granted to the organization. Approximately \$5,000. was donated by Birmingham citizens to defray expenses of preparing the field and erecting hangars. Practically all of 1921 was occupied with these efforts. Finally, on November 27th, ground was broken for what is now known as Roberts Field, and clearing, grading and building began in earnest. Much of the manual labor on this project was actually performed by personnel of the Escadrille.

On January 21, 1922, the "Birmingham Escadrille" was Federally recognized as the "135th Squadron (Obsn.) IV Corps, Air Corps," with 26 officers and 120 enlisted men. Redesignated "114th Squadron (Obsn.) Division Air Corps," May 1, 1923, and then the 106th Observation Squadron, Air Corps, 31st Division Aviation, January 16, 1924. Many of these original members are still on the rolls today.

In 1923, the Squadron demonstrated how it could participate in mine rescue work, when Squadron planes landed men and apparatus at Carbon Hill, 60 miles distant, within 78 minutes after a call was received at Roberts Field. In those days this was considered quite a feat. Also, during 1923, the Photo Section began a program of photographing points of industrial and historical interest throughout Alabama. This work, which

has been carried on steadily since that time, has resulted in a photographic file of inestimable value.

During the 5-year period, 1924-1929, Squadron officers made a number of trial flights in connection with the then proposed Air Mail. Squadron planes and personnel likewise assisted in the dedication of a number of airports in and near Alabama. These activities, together with routine flying missions, made up a full program for the organization, which during this period changed commanding officers from the late Major Meissner to the late W.V.M. Robertson, Jr., then to Lieut.-Colonel Sumpter Smith (now Air Officer for the 31st Division).

It was under the command of Lieut.-Colonel Smith in 1929 that the organization rendered its greatest service to the State of Alabama up to the present. On March 16, 1929, the entire Squadron was ordered on active duty for relief of families stricken by flood waters in south Alabama. Twenty-five officers and 100 men participated for 14 days and nights on this assignment, flying a total of approximately 300 hours - the equivalent of an entire summer field training period. Food and medicine dropped from Squadron planes to marooned families undoubtedly saved scores of lives in the stricken area, according to press reports from newspapermen on the scene.

Back from this flood duty, the organization took a leading part in Birmingham's campaign for a Municipal Airport. In the early part of 1930, a \$1,000,000 bond issue was voted for this purpose by the citizens of Birmingham. The Squadron, however, was forced by lack of funds to remain at Roberts Field, despite the fact that inspectors regularly reported Roberts Field facilities as inadequate.

The organization, however, did not lose hope of some day being able to erect suitable hangars and buildings at the magnificent Municipal Airport. A steady campaign of publicity and pressure on legislative and other branches of local government was maintained, with the result that provision of suitable facilities at the Municipal Airport was finally approved as a government work relief project two years ago. At this writing, construction is still under way. The organization hopes to move into its new quarters by the end of 1936.

The organization at present consists of 28 officers and 84 enlisted men and is commanded by Major Henry L. Badham, Jr. Its 15-year flying records show approximately 20,000 flying hours without a fatality to its personnel.

Motto: "Summo Est Opportunitas,"
(there is room at the top).



MAJ. FRED SMITH
C.O. 112TH OBS. SQD.
OHIO N.G.



MAJ. H. L. BADHAM
C.O. 106TH OBS. SQD.
ALABAMA N.G.



MAJ. J. V. DALLIN
C.O. 103TH OBS. SQD.
PENNSYLVANIA N.G.



MAJ. O. H. STOUT
C.O. 113TH OBS. SQD.
INDIANA N.G.



MAJ. R. A. DAY
C.O. 116TH OBS. SQD.
WASHINGTON N.G.



MAJ. R. S. MILLER
C.O. 109TH OBS. SQD.
MINNESOTA N.G.



MAJ. C. A. MASSON
C.O. 104TH OBS. SQD.
MARYLAND N.G.



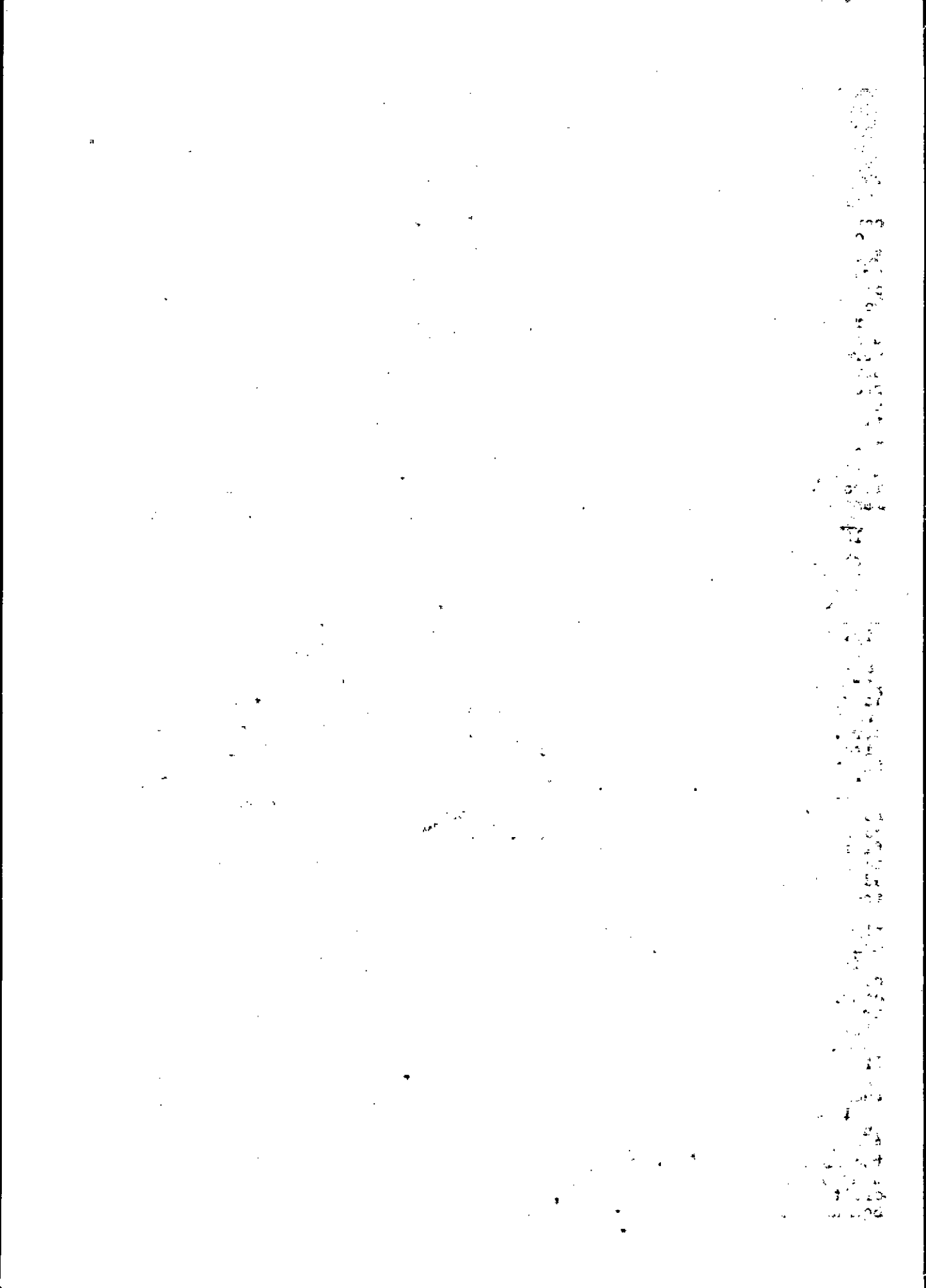
MAJ. R. L. COPSEY
C.O. 119TH OBS. SQD.
NEW JERSEY N.G.



MAJ. F. R. ANDERSON
C.O. 107TH OBS. SQD.
MICHIGAN N.G.



MAJ. E. A. PETERMAN
C.O. 115TH OBS. SQD.
CALIFORNIA N.G.



27TH DIVISION AVIATION, NEW YORK NATIONAL GUARD
(102nd Observation Squadron)
Miller Field, New Dorp, Staten Island, New York



In the beginning of 1921, a little group of World War veteran flyers, including five "Aces," met in New York and dedicated themselves anew to the further service of their country's aviation.

On March 22, 1921, an Observation Squadron, consisting of 19 veteran flyers as flying personnel, was formally organized, pursuant to General Orders No. 4, Adjutant General's Office, New York, same date. The enlisted personnel of Company "K," 14th Infantry, NYNG, were transferred to the Observation Squadron. Other enlisted personnel were recruited, resulting in the forming of a Photo Section, Air Intelligence Section and a Medical Department Detachment.

On November 17, 1921, the War Department, Militia Bureau, granted Federal recognition and designated the above mentioned units, as follows:

27th Division Air Service, N.Y.N.G.

102nd Observation Squadron,
102nd Photo Section,
102nd Branch Intelligence Office,
Medical Department Detachment.

Major Kenneth P. Littauer was assigned as Commanding Officer of the entire Division Air Service.

The Armory of Company "K," 14th Infantry, NYNG, located at 132 Prospect Street, Hempstead, Long Island, New York, was assigned as a place of ground instruction, Unit Armory and Headquarters. The flying personnel reported at Mitchel Field, L.I., New York, for flying training and observation instructions.

For a year the officers of the Squadron continued to meet in New York for a course of study in Aviation Observation, flying training at Mitchel Field, and to supervise the training of the enlisted personnel at Hempstead Armory. In the meantime, Captain George L. Usher, A.S., U.S.A., another veteran overseas flyer, was assigned by the War Department as Regular Army Instructor.

It being evident that the organization could not function in such a split up condition, it was determined to concentrate the whole Air Service at Miller Field, New Dorp, Staten Island, N.Y., which was not being used as a flying field. Accordingly, the enlisted men and ground officers were transferred back to the 14th Infantry on September 3, 1922, and the flying personnel put on an extensive recruiting campaign on Staten Island and in New York. In the two months' time, eighty skilled men, many of them overseas veterans, were recruited, and on November 4, 1922, the Squadron began to function at Miller

Field. Federal recognition was granted to the reorganized unit on the same date.

Shortly afterward, eight JN4-H type airplanes were assigned to the Squadron. These airplanes were assembled in the hangars by the enlisted men of the 27th Division Aviation.

During the winter months, the organization's enlisted personnel are trained in the assembling, maintenance and repair of aircraft, engine, radio communication, aerial photographic developing, aircraft armament and maintenance, and all other work of an Observation Squadron at the regular Thursday evening weekly drills. The commissioned officers, in addition to their duties as Instructors and Department heads of their respective departments, are also engaged in classroom instructions in Aviation Observation and other related subjects.

On the first Saturday of each month, the drill is held in the afternoon, and the entire organization is engaged in flying training, tactical missions and other field duties which cannot be accomplished during the weekly evening drills.

The organization has been commanded by the following distinguished officers:

Major Kenneth P. Littauer, DSC, Croix de Guerre, Order of Leopold, commanded the organization from November 17, 1921, to October 20, 1923.

Major George A. Vaughn, DSC, DFC, distinguished World War flyer and America's second living "Ace," commanded the organization from October 22, 1923, to November 10, 1930, when he was promoted to the rank of Lieut.-Colonel and assigned to the 27th Division Staff as Division Air Officer.

Major Lawrence G. Brower, a distinguished World War flyer and veteran, assumed command of the organization with promotion to Major from Captain on November 11, 1930, vice Major Vaughn, promoted. Major Brower is the only chartered member of the organization left and has been one of the most active officers in the unit. Many of the past and contemplated improvements are to be credited to his continuous untiring efforts.

The organization has participated in field training every year at Pine Camp, Great Bend, New York. During the field training period of the New York National Guard, it furnished to the various training camps details for towing target, aerial observation and other aerial cooperative missions with other branches of the National Guard.

The 27th Division Aviation has been called by the Governor on the following dates and events:

November 6-16, inclusive, 1927. Flood relief operation in the State of Vermont.
December 11-12, inclusive, 1930. Aid-

ing the civil authorities in jail break of the State Prison, Auburn, New York.

July 11-13, inclusive, 1935. Flood relief operation in the State of New York.

It is hoped within a few months that all of the O-38 type airplanes will be withdrawn from the organization and replaced with the recently purchased Douglas Observation airplanes of the O-46 type. It can be readily noted that the organization has grown in the same manner as any infant, from baby crawling with the old JN airplanes to the manly step of modern service type aircraft.

Miller Field, a United States Army reservation owned by the Federal Government, is situated between the upper and lower bay of New York City. The 27th Division Aviation since its existence has been a guest of the United States Army, although its maintenance problem is under the direction of the City of New York. The Federal authorities have extended every courteous assistance in making our residence at this post as comfortable as can be expected. The organization is quartered in several buildings, as follows:

The airplane hangar, located at the southeast corner of the field, is used for storage, care and maintenance of assigned aircraft. An Administration Building is being used as a Squadron Headquarters, Photographic laboratory, communication and radio station, armament room, operations office and a suitable quarters for the Medical Department detachment. A building, situated opposite the airplane hangar, is used by this unit for an armory drill hall and enlisted men's dressing room.

Although these facilities are inadequate and spread apart, thereby making the operations of the squadron rather difficult, it is hoped in the near future that some means of improvement will be obtained under a contemplated Works Progress Administration Project at this post.

The Works Progress Administration improvement project will consolidate the entire unit under one roof, thereby eliminating occupancy of many buildings scattered all over the post. This improvement will be effected by the building of several Lean-To's to the present airplane hangar which will house all of the organization's departments and sections. In addition to this improvement, it is also contemplated to erect one or two buildings suitable for club and recreational purposes, both for the commissioned and enlisted personnel. The contemplated project will include the complete lighting of the flying field for night flying and operations and the elimination of a number of buildings and roads situated on the flying field, whereby, after proper filling in, grading and resurfacing, this unit will have an excellent flying field for all types of operations and

suitable for all types of service aircraft.

Through the assistance of various local and Federal agents, it is hoped that these improvements will be provided in the very near future. With this contemplated plan completed, it is believed that the training and operation of this unit will be increased 100% in efficiency

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29th Div. Aviation, Md. National Guard (Continued from page 4.)

which are checked and coordinated by the P. & T.O., and when complete are approved or amended by the C.O., thereby assuring that the training developed by the section leader will be in accord with his ideas and, quite naturally, will be more readily pushed to a conclusion by him.

At the end of the winter period, written exams are held to determine the enlisted man's fitness to hold his rank or lose it and, thereby, give those who apply themselves a break, as they know that effort and ability count and not longevity of service.

Average enlisted attendance for the years 1932, 1933, 1934 and 1935 was 92.6%.

Retrospection

It cannot escape notice that a great diversity of opinion exists among the 19 Squadrons as to training methods, etc. and I cannot help but express with regret the thought that with these fifteen years behind us that the National Guard has not long ago obtained a comprehensive report from all Squadrons on training methods, and from such reports prepared a directive suitable for the peculiar and particular needs of National Guard Air Units as a whole with the objective of uniformity in training, for all, thereby better preparing the units for service in the event they are required for an emergency. Squadrons are now equipped with service type planes, latest type radios and cameras, splendid esprit de corps. But, without a definite training directive the training, as developed by the Squadron Commander, may not be sufficiently broad to obtain the essentials necessary for tactical work with associated units in the field. A definite training directive would undoubtedly bring better results.

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A delegation of three Swedish Air officers, consisting of Majors Henry Kjellson, Gustaf Q. Strom and Nils Soderburg, recently visited Barksdale Field, La. They were tendered official and unofficial luncheons and appeared to be impressed with the establishments of the field. "It is seldom our privilege to meet foreign officers so thoroughly charming and such fine 'mixers'!" says the News Letter Correspondent.

V-7009, A.C.

35TH DIVISION AVIATION, MISSOURI NATIONAL GUARD
(110th Observation Squadron)

Lambert-St. Louis Municipal Airport, Robertson, Mo.

The Commanding Officer of the 35th Division Aviation, Missouri National Guard, is Major Philip R. Love, who is a graduate of the Air Corps Advanced Flying School, Class of 1924. In his class were a few other outstanding figures in aviation, such as Colonel Charles A. Lindbergh and Jimmie Collins.

This organization came into being on June 23, 1923. Its first commanding officer was Major William B. Robertson. Some of the original members are still with it. At present it has 18 officers and 100 enlisted men. The Squadron is quartered in a fine hangar at Lambert - St. Louis Municipal Airport.

Like most of the others, the Squadron started without airplanes. Then came a few Jennys. At the present time it is equipped with O-38E's and O-38B's.

The organization is one of the few in the country having two regularly scheduled periods of training each week. The regular armory drill is held each Friday night at the hangar, and Sunday is devoted to tactical flight training.

The training schedule has been intensive. Much time has been devoted to the training of pilots for observer ratings. At present, most of the pilots have dual ratings. The remainder will have them before the next encampment, the Operations Officer says, "ortelse!" Special radio classes are held prior to the scheduled drill period and an attempt is being made to make 20-words-a-minute operators of all the officers. Much cooperative work is done with the other arms, and special training is carried on in tactical problems.

Pilot training has included many hours of instrument work. Virtually every pilot has qualified for a "blind" flying certificate after examination by the Regular Army Instructor, Captain Arthur Thomas, Air Corps. Pilots have also been trained to take full advantage of the navigational facilities offered, such as radio, Department of Commerce beams, etc.

A tabulation of the tactical flying training performed by members of this organization during the period from July 1, 1935, to February 29, 1936, inclusive, presents an interesting picture of the work being done.

During this period of time, pilots in the Squadron have put in 850 hours at navigation problems; made a total of twenty-eight 500-mile two-stop flights and a total of fifty 200-mile airway flights.

In instrument time, pilots have flown 131 hours under the hood and 28 hours of other instrument time. Very little night flying was accomplished during the winter months, but since July 31st, 115 hours were flown in night navigation and 37 hours in other night flying. Pilots have averaged 10 hours and 20 minutes each in reconnaissance work during the period.

Through the personal efforts of Major Love, funds were raised last year for the addition of a garage to the hangar, this affording space for the storage of motor equipment and spare parts and providing also additional office space.

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32ND DIVISION AVIATION, MICHIGAN NATIONAL GUARD
(107th Observation Squadron)

Wayne County Airport, Romulus, Michigan

The 107th Observation Squadron, Michigan National Guard, was organized in the Spring of 1926, and was Federally recognized on May 7th of that year. The personnel of the Squadron on that date consisted of eight officers and fifty enlisted men.

On May 7, 1927, the first airplanes were delivered to the organization, and the development of the Squadron began in earnest. It was not long before the 107th was taking its place among the best Observation Squadrons of the National Guard.

The Squadron is now busy qualifying all pilots in instrument flying, the organization being thoroughly trained in all other phases of Observation work.

Major Frederick R. Anderson, A.C.,

Michigan National Guard, is the Commanding Officer of the 107th Observation Squadron.

Major Anderson commanded the 306th Squadron in the National Guard Wing of the 1st Provisional Air Division during the Army Air Corps Maneuvers of 1931.

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On Army Day, a two-flight Attack formation from Barksdale Field, La., flew over the City of Shreveport for an extended period, dropping parachute flares well away from danger areas but visible from anywhere in the city. Two civilian radio broadcasters were passengers in airplanes in the formation, and carried on a continuous broadcast over two of Shreveport's radio stations.

GREETINGS FROM THE CHIEF OF THE AIR CORPS

It is with the greatest pleasure that we dedicate this issue of the Air Corps News Letter to the interests of National Guard Aviation. We welcome the contributions you have made to YOUR issue and hope you will continue to send us items on your aviation activities.

Through my frequent contacts with the administration of the National Guard Observation squadrons, I have learned of your splendid efficiency. The continuity of personnel you have been able to maintain has been very effective in securing a well-trained personnel possessing high morale.

I voice the unanimous sentiments of the officers of the Army Air Corps in expressing appreciation for the excellent airplane servicing we have received at all flying fields of the National Guard. I desire to take this occasion to thank the squadron officers, crew chiefs, airplane and engine mechanics and operations office personnel of the Guard for their courteous consideration and care for us. We hope that we shall always be able to take equally good care of you when you visit our fields.

My best wishes are yours for many happy landings.



O. WESTOVER,
Major General, U.S. Army,
Chief of the Air Corps.



45TH DIVISION AVIATION, COLORADO NATIONAL GUARD (120th Observation Squadron) Lowry Field, Denver, Colorado

The 120th Observation Squadron, 45th Division Aviation, Colorado National Guard, with headquarters at Lowry Field, Denver, Colo., was organized and sworn into the service in 1923 and received its first airplanes in 1924. Flight "A" was located at Denver, and later Flight "B" was sworn in at Pueblo, Colo. In 1927, Flight "B" was moved to Denver and became an integral part of the complete Squadron operating from Lowry Field.

The 120th Medical Department Detachment and the 120th Photo Section also are located at Lowry Field and, together with the 120th Observation Squadron, make up the 45th Division Aviation.

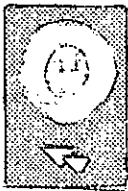
The War Department, in 1924, turned over to the National Guard of Colorado two surplus war-time hangars, and these have been used to house the airplanes and shops up to the present time. These buildings have long been considered obsolete and inadequate for the storage and maintenance of Federal property. While there are several smaller buildings on the field, consisting of the headquarters building, photographic building, mess hall and bath house for enlisted men, and an officers' club, the facilities are not large enough nor are they properly arranged for efficient

training of officers and enlisted men.

Early in 1934, an effort was made to obtain a new hangar of modern construction under the Civil Works Administration. This was approved by the Washington office of C.W.A., but the Colorado State Administrator did not consider such construction fitted into the general plan, and the building was never started. Further efforts were made to construct facilities for this organization under the Federal Emergency Relief Administration, but this also met with little success and nothing has been accomplished toward actual construction.

Profiting by the experience gained in the other two attempts, and with a State Works Progress Administration considerably more "Air-Minded" than other organizations, a third attempt was made which met with success. The new building is to be of concrete and steel construction, 148 x 184 feet overall dimensions, two 2-story wings, with hangar space in the center. The floor area of the hangar proper is approximately 16,800 square feet. The wings provide room for offices, shops, class rooms, club rooms and the necessary quarters for the various sections. The Denver city administration under the leadership of Mayor Benjamin (Continued on page 17).

36TH DIVISION AVIATION, TEXAS NATIONAL GUARD
(11th Observation Squadron)
Houston Airport, Texas



ORGANIZED in the Spring of 1923, the 36th Division Aviation, Texas National Guard, including the 11th Observation Squadron, the 11th Photo Section, 171st Air Intelligence Section and the Medical Department Detachment, was extended Federal recognition on June 29, 1923. The organization has continued with the same units save the 171st Air Intelligence Section, which was mustered out of the service on June 20, 1925. At the time of organization the unit headquarters were located in downtown Houston with flying activities conducted at Ellington Field.

Major Bernard A. Law, a war-time flier, was appointed commanding officer, and continued in that capacity until December 1926, when he resigned to engage in commercial aviation.

Captain Edward V. Harbeck (then 1st Lieut.), A.C., was detailed to duty with the organization in September, 1923, as Instructor and remained in that capacity until June 1926, being relieved by Major (then 1st Lieut.) Walter H. Reid, A.C.

Upon the resignation of Major Law, Lieut. Reid was commissioned a Major in the Texas National Guard and assigned to duty as organization commander in addition to his duties as Instructor.

After several months of untiring effort, Major Reid, representing the State of Texas, entered into an agreement with the Houston Airport Corporation whereby that Corporation would erect on the Houston Airport and lease to the State of Texas for use of the 36th Division Aviation two hangars, each 60' x 120', one administration building and five sets of quarters for caretakers. In December, 1927, the buildings were declared ready for occupancy and the transfer of all property from Ellington Field to the Houston Airport was made.

In the Spring of 1931, Major Reid secured three additional buildings, a completely equipped photo laboratory, radio building and garage.

Major Reid was relieved from duty as Instructor in August, 1931, after having served a little over five years with the organization. He was succeeded as Instructor and Commanding Officer by Captain Thomas W. Blackburn, A.C., who was, in turn, succeeded by Captain Harry Weddington, A.C., in July 1935.

The present authorized strength of the three units of the 36th Division Aviation is as follows:

Observation Squadron 31 officers, 70 enlisted men; Photo Section 1 officer,

20 enlisted men; Med. Dept. Det. 1 officer, 5 enlisted men.

The Squadron started out with the old JN-4's as training planes, drawing its pilot personnel from the ranks of war-time fliers. Later the squadron obtained TW-3's, PT-3's, O2-H's, O-38's and it is now equipped with eight O-43A's, all training ships being discontinued and service types substituted.

The Houston Airport, home airdrome of the unit, is located 10 miles southeast of the downtown district of Houston, the Squadron occupying the southeast corner.

During the summer training period, the organization moves to Camp Hulen, Palacios, Texas, 120 miles southwest of Houston. The camp is on a 13,000-acre military reservation on Tres Palacios Bay in Matagorda County. At the northeast corner of the Camp is a large landing field and camp facilities. The landing field is safe for all types of aircraft (heavier-than-air) during normal weather.

Since hard-surfaced runways have not yet been made, it is not advisable to try and use the field in exceedingly wet weather. Personnel from Brooks Field, San Antonio, Texas, use the Camp Hulen landing field and camp facilities during their gunnery practice. The 67th Service Squadron, from Randolph Field, has established a recreation camp there.

During the field training period, the squadron cooperates with the ground troops in artillery problems and as infantry contact planes. A high degree of efficiency has been developed in the squadron's spotting of artillery fire, the artillerymen hailing the aid of the Air Corps as of great value in both time and accuracy.

Here, too, during the annual training period, the squadron practiced bombing assiduously until provided with the O-43A. And during the annual encampment the pilots and observers are put through a course of aerial machine gunnery, both on ground and tow targets. The 1936 annual field training will not include aerial gunnery. The squadron has established a target range near the Houston airdrome where the pilots and observers will get their gunnery practice weekly while at home, leaving the entire time while at summer camp to employment in cooperation with the ground troops of the division.

While on the home airdrome the squadron has been of inestimable benefit to flood sufferers and hunters lost or marooned out in the vast marshes of the Texas gulf coastal plains. During floods, the squadron has aided the civil authorities in contacting communities where all wire communication was down and ascertaining

43RD DIVISION AVIATION, CONNECTICUT NATIONAL GUARD
(118th Observation Squadron)
Brainard Field, Hartford, Conn.

SPECIAL Order #98, dated July 27, 1923, in the Adjutant General's files, commissions Talbot O. Freeman a major and appoints him the first commanding officer of the 118th Observation Squadron, which was Federally recognized on November 1, 1923, with two officers and 51 enlisted men. Fourteen days later, 13 additional officers were included under Federal recognition.

After more than seven months of patient and impatient waiting, hopeful and doubtful watching of the skies, the great day arrived, Friday, June 13, 1924, when four brand new "Jennies" were delivered to the Squadron from the Fairfield Air Depot. Flying became a serious business with the checking and rechecking of pilots, most of whom had not flown since their discharge from the Army in 1919.

Governor Trumbull took a keen interest in all Connecticut National Guard organizations, but especially did he foresee what an important part the Air Service would play in any emergency. Thru his personal and official influence, a beautiful brick administration building was constructed; also, a brick Photo building, brick machine shop, brick radio building, brick garage, two corrugated iron hangars containing living quarters for the permanent detail, and a brick heating plant with oil burners, at an initial cost of \$114,500. Each building was equipped with the finest respective appointments. We were the envy of every National Guard Squadron, as well as Mitchel Field.

The year 1925 was marked by several incidents of peculiar interest. Three air meets were conducted in the State, in each of which the Squadron took a very active part. The Squadron received the first ship other than a Jenny, namely, a TW-3. The Squadron made its first formation cross-country flight. This was to Lakehurst, N.J. During the year, the Militia Bureau loaned, for shorter or longer periods, a DH with Liberty motor, an SE-5 and a Sperry Messenger. On the last day of the year, the Squadron had its first real blow; we lost, thru resignation, our first commander, Major Freeman, who, by his persistency, tactfulness, persuasiveness and executive ability, had built far greater than even he had dreamed.

The year 1926 opened with the appointment of Captain William F. Ladd as commander, with the rank of Major. He is now Adjutant General of the State. This tells the story of the kind of man who succeeded Major Freeman. This year saw our last drill in the State Armory, where we had been meeting since our or-

ganization, and our first drill in our new quarters at Brainard Field, where later there was an official "hangarwarming." It was during this year that the officers instituted the practice of meeting each drill night in the "dining room" in Hangar #2 for dinner, a practice which has never been interrupted. Personalities of note visited us from time to time, including General O'Ryan, Governor Trumbull, Senator Bingham, General Coke and Colonel Foulis, now retired Major General, and Lieut. Leslie Arnold of "Around-the-World" fame.

Connecticut set the pace for all other States in 1927, by appointing the first State Aviation Commissioner. He was none other than one of the Squadron's officers, namely, Captain Clarence M. Knox, who immediately drew up complete aviation rules which were enacted into law by the Legislature. These laws have served as a model for Legislatures of other States. Colonel Lindbergh visited Hartford on July 20, 1927. After a parade, during which he was received with wild enthusiasm by the populace, the Squadron united with the Aero Club, City, and State Commissions in tendering the Colonel a dinner at the Hartford Club.

In May, a powerful beacon and border lights were established at the field, the formal dedication thereof being featured by a most elaborate program. Before the year closed, the last of the "Jennies" had gone forever. New ships, both training and service, had been received, and with a beautiful field and new buildings, everything was set for steady and thorough development. But, alas, in November, the Connecticut River rose to a height never before known, overflowed its banks, swamped the field and inundated every one of the buildings with great loss of equipment.

In January, 1928, the city started preparations to build a 35-foot dike around the field to prevent forever another flood catastrophe. After dark, on May 11, 1928, the Squadron gave an interesting demonstration of an air raid on Hartford, which was defended by the Rhode Island Anti-Aircraft unit. Governor Trumbull and his official associates, the Mayor and city officials, and thousands of other citizens witnessed the event. During July, the Squadron had its two weeks' intensive training at its own field at Groton. This field was most appropriately named Trumbull Field, in honor of the man who had persuaded the State to purchase several hundred acres of the Plant estate upon which were many most substantial concrete buildings, very suitable for all the varied work of the Squadron.

From 1928, the history of the Squadron is a constant and steady development upon

a well-laid foundation of its first five years. Under the watchful eyes and efficient minds of Lieut. "Bob" Webster, Regular Army, who had been detailed as instructor in 1928, and Major Ladd, nothing was left undone which would contribute to the standard set by the Militia Bureau. And when, on January 1, 1930, Major Ladd resigned to be appointed Adjutant General of the State, Major Hubert E. Johnson succeeded him and has most capably carried on the work.

Night flying has been done by individuals since the early days of the Squadron. Actual training along this line, including night formation flying, was not begun until 1930. During the Air Corps Maneuvers of 1931, when over 650 ships visited Hartford and vicinity, five ships of the Squadron participated in the activities. In 1934, the State Legislature appropriated money to engage the Fairchild Aerial Photo Company to make a complete picture of the State. In this work, one of our planes with our own personnel played an important part. The Photo Section laid the entire mosaic.

During a serious strike in a nearby city in 1934, the Squadron performed a most unusual service. By radio, observers kept the militia and police informed as to the activities of the strikers, thus minimizing surprise disturbances.

In 1935, the Squadron participated in the Pine Camp Maneuvers in New York State, and were assigned a location about eight miles from Watertown. Within two days, the Squadron was functioning completely in every detail as an observation unit. Just prior to going to Pine Camp, the Radio Section received a new SCR-185. Though there was no time for instruction, in less than 48 hours after reaching Watertown, it was being used for all messages, and functioned perfectly with First Corps Headquarters. After the Maneuvers, the Division C.O. complimented the Squadron on its communications work.

On Wednesday, March 18, 1936, the Connecticut River had arisen beyond any previous known heights. Thursday morning it was near the top of the 35-foot dike which, after the 1927 flood, had been built at a cost of over one million dollars and which was considered at least six feet higher than the water would ever rise. Before noon, the planes were ferried to Rentschler Field and all transportation, except a five-ton caterpillar tractor, and all valuable equipment, including cameras, radio sets, machine guns, etc., were moved to the State Armory. Sometime Thursday night, the water came over the top of the dike; then part of the dike broke, and in a raging torrent the water rushed over the field which was soon under 15 feet of water. Trees, logs, iron

barrels, houses and barns were hurled against the Squadron buildings. And now, April 6, 1936, when the water is gone, the worst is realized. The five-ton tractor, which was in the garage, was carried 150 feet out on the flying field; every building is so seriously damaged and undermined that economically it would seem less expensive to tear down what remains of the buildings and rebuild completely rather than try to repair the damage. So, after thirteen years of hard and difficult work, the Squadron, at least as far as material is concerned, must begin again at scratch.

- Capt. Daniel R. Kennedy, Chaplain.

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45th Div. Aviation, Colo. National Guard (Continued from page 14).

F. Stapleton, has turned over the northwest corner of the Municipal Airport, consisting of 19.61 acres, for the construction of buildings for the 45th Division Aviation. Grading of the site is now under way, and concrete for the footings of the buildings was scheduled to be poured the latter part of April. It will probably be late in the year before the building will be ready to be occupied.

Another project submitted by the city provides for three hard-surfaced runways on the mile square airport. By 1937, the 45th Division Aviation should be equipped with a lay-out equal to that of any of the 19 National Guard Squadrons.

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LIEUT. OLMSTED KILLED IN AIRPLANE CRASH

Second Lieut. Lawrence R. Olmsted, Jr., Air Reserve, was killed, and Capt. Walter E. Todd, Air Corps, was slightly injured when the new PB-2B airplane which Captain Todd was piloting crashed during a test flight at San Diego, Calif., April 21st. Both officers took to their parachutes when the engine of the plane failed. Captain Todd landed safely and suffered only minor injuries. Lieut. Olmsted apparently jumped from a low altitude, as his parachute opened too late.

Lieut. Olmsted was 26 years of age. He had been stationed at Selfridge Field for the past 13 months. He was a graduate of Brownsville College in Texas and from the Air Corps Training Center. His home was in Brownsville, Texas, and he was the son of Dr. and Mrs. Lawrence H. Olmsted, Sr.

The Air Corps extends deepest sympathy to his bereaved family.

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Five officers from other branches of the Regular Army, who completed two weeks' study of Air Corps tactics, departed from Scott Field, Ill., on April 30th, namely, Captain Wayne C. Smith, 2nd Lieuts. Lawrence K. White and John Neiger, of the 6th Infantry, Jefferson Barracks, Mo.; and Captains Vincent L. Conrad and George H. Passmore, of the 2nd Infantry, Fort Sheridan, Illinois.

40TH DIVISION AVIATION, CALIFORNIA NATIONAL GUARD
(115th Observation Squadron)
Griffith Park, Los Angeles, California.

THIRTY thousand flying hours without a fatality or serious injury to personnel is the record of the 115th Observation Squadron, 40th Division Aviation, California National Guard. Organized in the spring of 1924, the 115th received Federal recognition on June 16, 1924.

Instrumental in the organization of the Air Corps unit here was Major C.C. Moseley, then a First Lieutenant in the Regular Army. Major Moseley served as the Commanding Officer of the squadron until 1928. Returning to civil life he entered commercial aviation and is now managing Grand Central Air Terminal, Glendale, California.

Of the original officers who formed the squadron, but one is still connected with the California National Guard, Lt. Col. John N. Jeffers, who served as Squadron Commanding Officer from 1928 to 1931. While he is now on the Staff of the Commanding General, 40th Division, as Division Air Officer, he still meets and flies with the organization. Three of the original enlisted personnel of the squadron are still with the outfit. They are Capts. Frank Miller, Jack Sewell, and Sgt. Adam Windberg. (The latter is now at Chanute Field taking the Mechanics Course.)

When first formed, the squadron met at Clover Field, Santa Monica, and used Reserve equipment, JN4D's (Hisso-Jennies) for flying. After leaving Clover Field, the squadron met at the National Guard Armory and at the University of Southern California for several months before coming to the present Griffith Park field in 1925. During these years the flying equipment evolved from the borrowed JN4D's, through DH's, a side-by-side TW3 (early Consolidated PT), O-2C's, PT's, O-2H's, O-2K's and Liberty-powered BT's, to the present equipment of three C-38E's and four O-38's.

During this time motor failures have caused only ten forced landings, none of which have been in the past three years. Two disabled planes were responsible for four members of the squadron joining the Caterpillar Club. In 1926 Major E.A. Peterman and Capt. Harold J. Cooper, Medical Detachment, left a Jenny when a wing came off. During 1933 Summer Training Camp, Lt. Charles Haas and Sgt. Roger Hebner "bailed out" of an O-17 under similar circumstances, all landing safely.

Similar to the advance in flying equipment was the advance in radio equipment, in which the squadron has al-

ways been able to keep ahead of the ground troops with which it works. At present, four SCR-185 sets are in use in the planes and an SCR-180 set is used by the ground station.

The Medical Detachment, organized in 1926, is now commanded by Capt. R.O. Bullis. He commanded the original detachment upon its formation, although his service has not been continuous. In 1927 he went to Europe for advanced medical study, returning to the Medical Detachment in 1930.

The 115th Photo Section, also organized in 1926, comprises 23 men, commanded by Lt. Charles P. Roberts. A five-room photo building houses its activities, and the equipment consists of one K-10 camera, two K-3 B's, a Graflex, View Camera, two gun cameras, enlarging machine and the necessary developing and printing accessories.

In connection with the Photo Section, it is fitting at this time to pay tribute to its first Commanding Officer, Capt. George Sherwood. His loss to the squadron last year was deeply felt; he was a fine officer, pilot and gentleman. Capt. Sherwood died in the crash of an airplane transport of which he was pilot.

Capt. Minton W. Kaye, Air Corps, is a former C.O. of the 115th Photo Section. Capt. Kaye, who went into the Regular Army through the National Guard, was recently transferred to Bolling Field from March Field, where he was in command of the March Field Photo Section.

Another former member of the 115th Observation Squadron is Capt. Harry Claiborne, from whom the squadron receives regular and very interesting letters. He is now in Canton, China, as instructor for the Cantonese Air Force. Several officers believe that his letters, put in book form when he returns, might become a "best seller" among aviation literature.

Five Air Corps officers have been assigned as Unit Instructors to the organization since its formation. The first was Major Moseley, already mentioned. He was followed by First Lieut. Leslie Arnold. The third was First Lieut. James B. Carroll (now Major) at Chanute Field, and the fourth, Capt. (now Major) Eugene B. Bayley, A.C. Tactical School, Maxwell Field. The present instructor is Major Benjamin F. Giles, whose personality, experience and training are great assets to the organization.

The National Guard Airport is located in the Los Angeles city-owned Griffith Park, handy to Los Angeles, Glendale and Burbank. It is less than a quarter of a mile southeast of Grand Central Air Ter-

minal, Glendale. The present two hangars are war-time sheet iron construction. The field is two-way, with two thousand feet of runway paved in the past six months and one thousand feet more of paving approved under a government work relief project. Plans for a future armory were drawn, but no definite action has been taken towards actual construction.

Capt. G.W. Coombes (Nat'l Guard Ordnance Dept.) is civilian field superintendent, serving in this capacity since 1925. In July of this year, an addition was made to the full-time employees, when Lt. L.C. Holton, Squadron Engineering Officer, took charge of airplane maintenance. Lt. Holton is now at Chanute Field taking the engineering maintenance course.

Ninety-two men comprise the enlisted strength of the squadron at the present time, including medical and photo sections. Many boosts on the way to the Air Corps Training Center at Randolph Field were received through enlistment in the squadron. A constant waiting list for enlistment aids in maintaining a high calibre personnel. A perpetual trophy cup carries the names of the best enlisted men picked at the yearly camps at San Luis Obispo. It was donated in 1926 by a local newspaper.

Holding a place on the mantle is another trophy which has become well inscribed with names through the years. This is the Pilots' Dumbbell Trophy, now entering upon the second column of those so honored.

Seventeen pilots and four observers comprise the commissioned strength of the 115th. In command is Major E. A. Peterman. A graduate of the Air Corps School in 1926, Major Peterman in civilian life is Aeronautical Engineer-in-Charge, West Coast Branch of the Department of Commerce.

Other Squadron officers are Captains W.C. Bullis, Medical Officer; Allen A. Barrie, Plans and Training Officer; Earl H. Robinson, Operations Officer; F.M. S. Miller, Jack W. Sewall and R.C.A. Larsen, Flight Leaders; First Lieuts. C.A. Burrows, Armament Officer; C. R. Gard, Communications Officer; H.E. Gilmore, Adjutant; L.E. Thomas, J.V. Wallen, C.W. Haas, Paul Whittier; Second Lieuts. O.D. McKenzie, Charles P. Roberts, L.C. Holton, A.S. Hurren, J.S. Southard and C.A. Shoop.

36th Div. Aviation, Texas National Guard
 (Continued from page 15)

what relief was necessary. Probably one of the outstanding services of the Squadron was its aid in analysis of the cosmic ray. The Houston

Squadron planes piloted aloft for the first time scientists who sought to measure the cosmic ray at varying altitudes and free from the mass attraction of the earth. These flights were conducted in 1932, coincident with the unfortunate Alaskan cosmic ray expedition, which cost thousands of dollars, consumed months and resulted in loss of human life through falls into mountain crevices. The measurements of the cosmic ray were made by Dr. L.M. Mott-Smith, Instructor of Physics at Rice University, Houston, Dr. L.G. Howell, of the Bureau of Geographical Research of the Humble Oil & Refining Co., Houston, assisting. The first flight, taking measurements at varying altitudes from 5,000 feet on up to 20,000 feet, was made on June 17, 1932, 1st Lieut. Alex G. Greig piloting Dr. Mott-Smith.

On June 20th, 1st Lieut. Earle T. Shwalter piloted Dr. Howell; on June 21st, Capt. J.F. Aldrich piloted Dr. Mott-Smith; on June 23rd, 2d Lieut. John H. Eagle piloted Dr. Howell; on June 29th, 2nd Lieut. Ben F. Thompson piloted Dr. Howell; and on June 30th, Capt. Aldrich again piloted Dr. Mott-Smith. Following these flights, Dr. Mott-Smith journeyed to Dayton where, at the Air Corps engineering field, he conducted further flights and measurements.

Thus, from this simple beginning in aerial flights to measuring the cosmic ray, that means of making these experiments have completely superseded the arduous mountain climbing expeditions and its dangers and, according to scientists, with much better results.

The Squadron personnel has been and continues to be thoroughly instructed in flight problems - interception, radius-of-action, blind or instrument flying, beam, formation, radio - Morse and mike, the camera gun, aerial gunnery by machine gun, and photographic missions, including pin point, obliques, verticals, mosaics, etc. The mosaics for the Camp Hulen problems, covering 13,000 acres, were made by the Squadron's photo section.

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PLENTY OF RADIO AT SCOTT FIELD

Scott Field, Belleville, Ill., has six radio stations, of which four are official and two are of the amateur type. The stations are:

WYF	200	kc.	Post Radio Station (Hours 6:00 a.m. - 6:00 p.m.)
ZT7	253	kc.	21st Airship Group, 24-hour "Air Alert Watch."
KQ8	396	kc.	9th Airship Squadron. Routine tests. Active in the field.
MK1	515	kc.	15th Obs. Squadron. Used for training officers. It is active in the field.
W9CJH	3951	kc.	Private Frank W. Brashears, 14240 kc. Station Complement. Amateur.
W9WGK	1867.5	kc.	Pvt. 1st Cl. O.O. McIntire, 9th Airship Squadron. Amateur.

28TH DIVISION AVIATION, PENNSYLVANIA NATIONAL GUARD
(103rd Observation Squadron)
Philadelphia Airport, Philadelphia, Pa.

FROM organization in December, 1923, to the present is a long story. In the making of that story, the efforts of many men have been recorded. After Federal Recognition, June 27, 1924, the organization worked to obtain proper airport facilities. The "Jennies" arrived in May, 1926. Their stay was brief, for in a little over a year they were heaped upon a pyre. From their ashes arose a single P1; then came the O-17's in 1928.

With the impetus given to aviation in general, came the new O-11's, which thereafter were usually seen at airport dedications and air meets throughout this part of the country. The Air Corps Maneuvers in 1931 saw the National Guard Air Corps units participating with the Regulars.

The Douglas O-38's with which we are now equipped, have put on a good show but are fast reaching the age of retirement. January, 1935, witnessed the National Guard Aviation participating in the Air Corps maneuvers in Florida. Nearly all the units were represented, and such opportunities are welcomed for the additional training they make possible.

Throughout the summer months, the 103d Observation Squadron is on call for cooperative missions with the other branches of the 28th Division. The 103d and 104th Cavalry work calls for the airplanes to fulfill their mission. Night tracking for the 213th Anti-aircraft Regiment turns sweltering nights below into chilly breezes upstairs.

The summer encampments are usually held at Middletown Air Depot, from which the squadron operates in its work with the 28th Division. As a rule, the first week of the encampment is spent in squadron training and the second week in day and night missions with the other units of the division.

During the year, training progresses regularly, with each scheduled drill realizing the completion of another portion of the program. The manner in which the enlisted men take to this training is to be commended. Their regret is that there is not enough time available for the work each section has to do. The radio section seems to be the greatest offender in not hearing recall. Armament is busy with the camera guns. The Photo Section is working on the pictures the camera guns have taken. Recruits come and go, and more physical examinations are required; also, semi-annually, the 64's for each officer. In winter, the flights spend most of their time in the classroom, but now that summer is coming they will be out on the

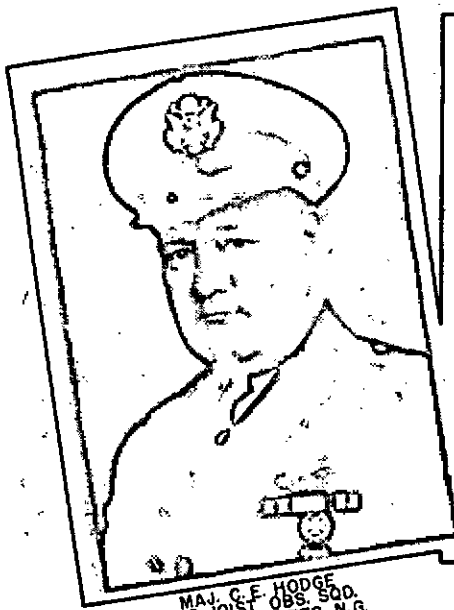
line and in the shop, practicing what they have learned, finding out how the gadgets work, and increasing their practical application.

The Works Progress Administration moved in on our airport several months ago, with the result that flying activities have been moved to Pitcairn Field, 17 miles north of town. The Philadelphia Airport looks a bit wierd, to say the least, with seven railroad tracks across its face and great rows of dirt piled high along both sides of each track. A bulldozer is knocking down these piles and, by the end of summer, the facial should be completed. Heretofore, following every rain, small lakes were as natural to the airport as the hangars themselves. The fact that the level was six feet below city datum no doubt accounts for the lakes. The WPA expects to eliminate these lakes.

During the Fiscal Year 1935, the six O-38's assigned to this organization flew 1726 hours. For the eleven pilots and nine observers, that amount of flying time means much valuable training. Of the total, 720 hours were devoted to various types of cooperative missions with other branches of the service, from Infantry Cooperation and Liaison to towing targets for the Anti-Aircraft; from Mapping areas to ferrying personnel of other branches.

The balance of 1006 hours are non-cooperative missions devoted to navigation, formation, local flights and night flying. For a group of part time soldiers, dependent upon commerce and industry for a living, this record seems worthy of mention.

The 103d Observation Squadron has been commanded by Major John V. Dallin for the past five years. Major Dallin was in the British Royal Air Force during the World War, and is well known throughout this country in connection with aerial photographic work. Captain DeCoursey received his JAP rating January, 1926, and passed the tests for AP in May, 1932. Captain Logan received his JAP in March, 1924, and AP in July, 1933. Captain Scattergood is a graduate of the Air Corps Training Center, October 1930, having served his active duty at Dodd Field before joining the 28th Division Aviation. Lt. Carlisle is also a graduate of the Air Corps Training Center, June 1930, having served his active duty at Selfridge Field. Lt. Humphreys graduated from the Air Corps Training Center in June, 1930, and served active duty at Selfridge Field. Lt. Pennock received his AP in May, 1931. Lt. Vickers was rated JAP in March, 1930 and AP in August,



MAJ. C. E. HODGE
C.O. 101ST OBS. SQD.
MASSACHUSETTS N.G.



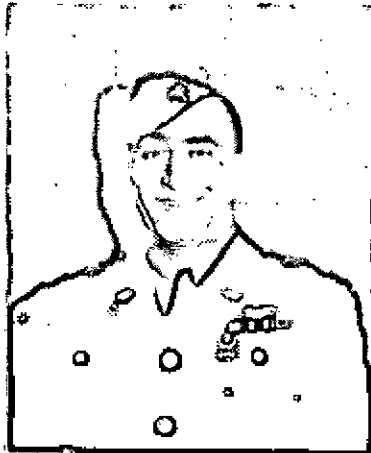
MAJ. H. E. JOHNSON
C.O. 118TH OBS. SQD.
CONNECTICUT N.G.



MAJ. C. A. MCELVAIN
C.O. 108TH OBS. SQD.
ILLINOIS N.G.



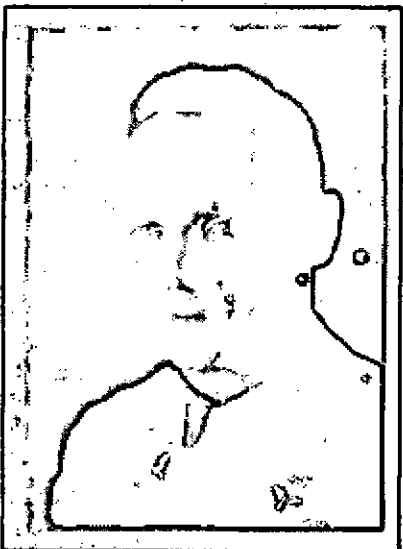
CAPT. HARRY WEDDINGTON
C.O. 111TH OBS. SQD.
TEXAS N.G.



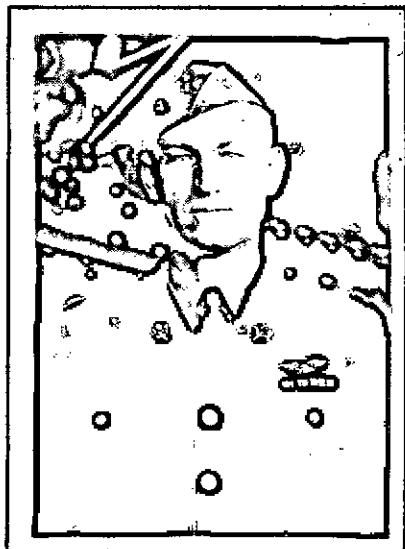
MAJ. L. G. BROWER
C.O. 102ND OBS. SQD.
NEW YORK N.G.



MAJ. ADRIAN WILLIAMSON
C.O. 154TH OBS. SQD.
ARKANSAS N.G.



MAJ. PHIL. LOVE
C.O. 110TH OBS. SQD.
MISSOURI N.G.



MAJ. V. D. STONE
C.O. 120TH OBS. SQD.
COLORADO N.G.



MAJ. W. M. WILLIAMS
C.O. 105TH OBS. SQD.
TENNESSEE N.G.

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1931. Lt. Barringer, noted glider pilot and author of aviation articles, received his AP in May, 1934. Lt. Benn graduated from the Air Corps Training Center in February, 1932, and served two years at France Field, Panama Canal Zone, before joining the 28th Division Aviation. Lt. Panning graduated from the Air Corps Training Center in February, 1932, and served active duty at Mitchel Field. Lts. Brenner, Craven, Hawkins, Jablonski, Merrill, Miller, Quinn and D'Ettore make up the observers, having come up as enlisted men or passed the pilot rating.

Early Wednesday morning, March 18, 1936, Major Dallin received a phone call from the Commanding General in Harrisburg, that many portions of Pennsylvania were in danger from flood water. He proceeded immediately to Harrisburg to await further instructions. About noon, March 19, Major Dallin called from Harrisburg to mobilize seven officers and thirteen enlisted men, and the necessary preparations were made for movement to Lancaster Airport during that day. The mobilized detail arrived at the Lancaster Airport in the morning of the 20th. Four airplanes, equipped with bomb racks for dropping relief bags, patrolled the areas designated by higher authority. Photographs taken of the stricken areas aided materially in directing relief units from the ground. Radio communication was maintained from the airplanes, transmitting on 3105 kilocycles, to the Airways Radio Station WWHP at Harrisburg, Pa. The main body of the detachment broke camp Sunday afternoon, March 22d, and departed for home, arriving there the same day. A small unit remained on duty until April 2d, when it was also demobilized.

This incident is the most recent in the service of this unit and depicts, in general, its status of training and preparedness. The following is a list of units with which this organization has had cooperative missions during the Field Training Period and at other times during the year:

The 55th Infantry Brigade; the 56th Infantry Brigade; the 53d Field Artillery Brigade (75 mm. & 155 mm.); the 176th Field Artillery Brigade (155 mm. Howitzer); the 103d Regiment Engineers (Combat); the 52d Cavalry Brigade; the 213th Coast Artillery (AA).

---oCo---

The 9th Airship Squadron, Scott Field, Ill., has renovated and rearranged the equipment in its mess hall and kitchen in order that the handling of food at mess time will be more expeditious. The cafeteria style, which has been used for a number of years, has been found to be the best possible method of serving food.

A NOTEWORTHY PHOTOGRAPHIC MISSION

The News Letter Correspondent from Mitchel Field, L.I., New York, believes that a record was established by Master Sergeant Joe M. Cates, 8th Photo Section, Mitchel Field, when he secured 530 vertical aerial photographs in one hour, 28 minutes, during a cooperative photographic mission for the Beach Erosion Board, along the New Jersey coastline. These photographs were made under difficult circumstances, inasmuch as the requirements specified that there be no tilt and that each photograph overlap 60 percent. The elapsed time was one hour and 28 minutes, and does not include time required for magazine changes nor while circling for position. The interval between exposures was slightly less than seven seconds, and it required five of these for the electric motor to rewind the film and shutter, leaving less than two for Sergeant Cates to level his camera.

The pilot, Captain P.T. Cullen, of the 97th Observation Squadron, was having his troubles because, in order to have even this interval, it was necessary to fly the Fairchild at the rate of 80 miles per hour, which is not a comfortable flying speed. Also, there was the problem of keeping over the low water mark. The altitude of 3000 feet permitted little deviation.

These photographs are made monthly (weather permitting) at low tide for the Beach Erosion Board, and is part of a four-year study, recently initiated, of the erosion of the New Jersey coast, particularly in the vicinity of Atlantic City.

Similar studies are being made on Long Island and at Hampton Beach, N.H.

---oCo---

A NEW GAS STOVE FOR FIELD USE

The 15th Observation Squadron, with the cooperation and engineering experience of Lieut.-Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Ill., has designed and manufactured a propane (bottled) gas stove for field use. The stove is made of angle iron with all joints welded, and is covered with asbestos-lined sheet metal. It has three boiling containers in the bottom half and a baking oven and a warming oven in the top half. It was designed to be mounted in a 2½-ton cargo truck. The stove has a feeding capacity for 225 men and operates at a cost of less than one-third cent for each individual mess prepared.

This stove was used in the 15th Obs. Squadron kitchen for one week and was found to be satisfactory. At present it is being tested by the 61st Coast Artillery Corps, Fort Sheridan, Ill., on extensive field maneuvers.

41ST DIVISION AVIATION, WASHINGTON NATIONAL GUARD

(116th Observation Squadron)

Felts Field, Spokane, Washington.

WASHINGTON has been offered one of the 19 National Guard Observation Squadrons authorized by the Militia Bureau. I've offered it to Seattle and Tacoma, but Spokane has an equal opportunity of getting it. Which ever city raises \$10,000 first for the erection of hangars is going to get the Squadron."

Adjutant General Maurice Thompson of Camp Murray, American Lake, Washington, concluded these remarks in Spokane in the spring of 1924, and boarded a train immediately for Washington, D.C. The train had hardly reached the city limits before a group of Spokane business men telegraphed the Adjutant General that "the \$10,000 has been raised and we want the Squadron."

That's how Spokane became the most northerly military air base in the United States. "Lazy husbands," who preferred the county jail to the duty of caring for their families, were hauled daily to the old municipal golf course that was to be rapidly converted into a station for the 41st Division Aviation, Washington National Guard. The golf course was not a pleasant site to gaze upon, because between the golfers' hazards and large boulders it seemed like an endless task to build a landing field there, where years before cattle had grazed and one of the early Indian wars had taken place.

But even in those dark days of aviation, Spokane had one man who knew something about landing fields, and that man was soon to become the Major in command of the 116th Observation Squadron.

"The old golf course has one thing strongly in its favor, and that is perfect drainage," said Major John T. Fancher, who a few months before had returned as a 1st Lieutenant, Air Service, from the World War. Major Fancher, a native of Spokane, was overseas.

There were exciting days between March and July 24, 1924, when orders came to form the 116th Observation Squadron. Major Fancher had not been loafing on the job. He had searched out the few Air Corps officers and enlisted men who had been in the World War, and around these he started to build his organization. Each day brought new thrills. Next in importance was the arrival of two metal hangars. Then came the expenditure of the \$10,000 for erection of the hangars. Concrete floors were poured for the hangars, which were bolted together and made ready for the arrival of the flying armada.

Beside the two army hangars stood a deserted barn, the remaining relic of days when cowboys stabled their ponies after herding cattle in the neighboring

valleys and rolling hills. The barn was to have a new use. It was to become headquarters for the transportation section, which up to that time had no rolling equipment. The 116th Medical Detachment also needed headquarters. This problem was solved by the construction of a lean-to on the north side of the barn. There the late Captain E. E. Langley, Flight Surgeon, opened up for business.

It was definite that Spokane was to have the 116th Observation Squadron and the 116th Medical Detachment. This meant the assignment of a Regular Army Air Corps officer as instructor.

In July, 1924, Captain Arthur E. Easterbrook, an "Ace" in the World War, was detailed as instructor. With him came Staff Sergeant John Simpson, also an overseas veteran, as Sergeant-Instructor. Captain Easterbrook is now a Major, on duty in the Office of the Chief of the Air Corps, Washington, and Sergeant Simpson is still a guiding force in the 41st Division Aviation.

On August 6, 1924, Federal recognition was extended to the organization, with Major Fancher in command. Spokane threw its enthusiastic support behind the new military organization, which grew in popularity and attracted scores of recruits and war-time officers, few of whom survived the Flight Surgeon or could produce the necessary credentials.

First drills of the troops were held in the armory of the 161st Infantry Regiment, Washington National Guard, but this proved unsatisfactory to an Air Corps organization. Drills were then held at the field, which is a 15-minute drive from the city.

It was April, 1925, that brought the thrill of thrills to the 116th Observation Squadron. The flying armada, three newly overhauled "Jennies," rumbled into Spokane in one box car. The "Jennies" arrived completely disassembled, some a bogey to a crew that knew little, if anything more than the fact that the motor and tail skid went on opposite ends of the airplane. Long days followed in which parts were tried here and there to determine where they fit best. Finally, the "Jennies" were moved to the line for test flights by Captain Easterbrook. They really flew, and Spokane was certain it had an Air Force! Other "Jennies" followed, and soon the 116th Observation Squadron welded itself into a smooth running organization.

It was a sorry day when orders came grounding all airplanes unless the personnel wore parachutes. Parachutes had never been issued, and couldn't have been used even if they had been issued. Next came orders requiring that the upper

wings of the "Jennies" be redesigned so as to permit the pilots to "bail out," and then came the parachutes.

The 116th Observation Squadron had its first two annual encampments in 1925 and 1926 at its home station. Two such camps clearly indicated to the high command that neither their Air Corps nor ground troops would benefit from divided training. The rest of the Washington National Guard held its camp at Camp Murray, American Lake, near Fort Lewis, Washington.

In the spring of 1927, Lieut. Caleb Vance Haynes arrived to succeed Captain Easterbrook as Instructor. Orders were received calling the Squadron to Fort Lewis for the 1927 camp. Fort Lewis has no landing field, but landings had been made on the parade ground by Regular Army Air Corps pilots. Hearing that the 116th Observation Squadron was to camp at Fort Lewis, orders came from the Commanding General that his parade ground would not be used for an airport. But the 116th Observation Squadron was a "pioneer" in the building of landing fields by this time. The personnel had watched its own landing field constructed. Furthermore, the personnel had flown "Jennies" and knew just how long a landing strip had to be to satisfy a "Jennie." Therefore, it was quick work to remove a few towering sentinels of the forest in order to clear the approaches to the narrow strip of "reasonably" level ground.

In 1927, the 116th Observation Squadron took a place of national prominence in the aeronautical world, because Maj. Fancher, Lieut. Haynes and Spokane business men planned the successful 1927 National Air Races and Derbies. The National Air Derby Association was organized to sponsor this \$125,000 event. Major Fancher was managing director. He made several trips to New York, and succeeded in securing the participation of the Army, Navy and Marine Corps air forces. Air derby racing was originated by the National Air Derby Association with derbies from New York and San Francisco to Spokane. A non-stop flight from New York to Spokane, for \$25,000, came near being a success, but failed when Eddie Stinson got lost within 50 miles of Spokane.

Major H.B. Clagett, now Brigadier-General and commander of the First Wing, GHQ Air Force, commanded Army airplanes participating in the National Air Races. This event was of tremendous benefit to the officers and personnel of the 41st Division Aviation.

In March, 1928, two 3-ship formations flew from Spokane to Wenatchee, Wash., to participate in the annual Apple Blossom Festival. It was then that a serious blow was handed the 41st Division Aviation, which still was a young, but thriving, National Guard Observation

Squadron. Major Fancher led his command in formation maneuvers, which greatly pleased the merry-makers in Wenatchee. Night came, and Wenatchee asked that aerial bombs be dropped. Major Fancher accepted the detail and completed it satisfactorily. On landing, he discovered three bombs remaining in his airplane. Rather than leave the bombs for some small boys possibly to be injured with, he stood on the ground and tossed the time-fuse bombs to explode in the landing field. The third and last bomb exploded while still in the hand of Major Fancher, causing his death.

Lieut. Haynes succeeded Major Fancher as Commanding Officer and, completing a successful tour of duty, was succeeded by Captain Robert G. Breene. It was during that officer's tour as Instructor and Commanding Officer of the Squadron that the 41st Division Aviation secured its new \$125,000 PWA hangar. Regular Army Air Corps specialists have declared the hangar to be outstanding in every respect.

It looked like the job was about done when Captain Robin A. Day became the commanding-instructor. But there were problems in the air to be solved. Pilots of the organization had never been permitted, without cross-country authority from the Adjutant General, to land away from Felts Field. Somehow, that was changed. Cross country flights as distant as Boeing Field, Seattle, are made on authority from Captain Day. Extended cross country flights to all parts of the United States are as common as peanuts at a circus. The gasoline problem is no more.

And Captain Day is making it his business to "keep the boys under the hood." He believes in instrument flying. Last year his command ranked first among the National Guard Observation squadrons in the number of hours flown. This year it is seeking to better its record of more than 3,000 hours accumulated last year.

Captain Robert Owen and Lieut. Hillford R. Wallace are the only two remaining original officers of the 41st Division Aviation, the former being the ranking captain and the latter the commanding officer of the 116th Photo Section. Lieut. Wallace attended the Photographic School, and was on active duty for two years at Crissy Field, Calif.

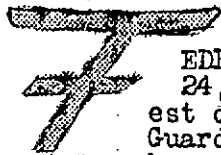
Seven of the original enlisted men are still in the Squadron, viz: Master Sgts. John Dean, Paul Sager, Aloysius Hylent, Staff Sergeants Durwood J. Anderson, O.B. Fay, Paul Perry and Stanford B. Whitely.

Felts Field gained its name from a native son, Lieut. Buell Felts, who was killed in a crash near the airport.

The organization is proud of many accomplishments, chief among which was the 1935 year of daily service to the United States Weather Bureau in taking the upper air readings at 18,000 feet altitude, assistance in securing the Northern Trans-

(Continued on page 24)

154TH OBSERVATION SQUADRON, ARKANSAS NATIONAL GUARD
Little Rock Airport, Little Rock, Arkansas



EDERALLY recognized on Oct. 24, 1925, we are not the oldest of the youngest National Guard aviation outfit, but we have plenty to be proud of. In April, 1926, we received our first airplanes. One year later, the Mississippi, Arkansas, White and St. Francis Rivers went on a rampage and flooded nearly all of the eastern half of Arkansas. As a result, the Squadron was ordered to active duty for 27 days, bringing manna from the heavens to the stricken and isolated populace in the form of beans and sow belly. There was water everywhere, but the boys flew those old Jennies through it all without batting an eyelash. There were times when the parachute packs came back with a few button holes cut in them! It was a fortunate thing for the Squadron to be able to demonstrate our value to the State and the country in this disaster. The Squadron also benefitted by the experience, because we literally flew the wings off those Jennies and, as a result, we received replacements in the form of three PT-1's and one DH-4.

During the Air Corps Maneuvers in May, 1931, we started out as the next to the last flight and ended by being designated as the Headquarters Flight for the National Guard Wing, led by Major Ralph Royce. And when that little get-together was over, could those boys fly formation! They could even make biscuits with those O-2's. They were good to start with, but when it was over they were perfect.

In March, 1935, the Squadron was authorized to increase its officer personnel by eight observer "Shavetails." A cadet class of twelve men was organized to train in competition for the eight vacancies. These men were selected from a large number of candidates. In the selection of each candidate, particular attention was directed toward his adaptability, his enthusiasm for the Squadron, his potential ability as an officer, and his standing in the community. A rigid course of training was set up for them to follow. They were required to complete all of the 10 series and most of the 20 series correspondence courses; 25 hours in the air performing tactical missions; a course of training in theory of radio and machine gunnery; and last, but not least, they were required to be able to take code at a lively clip. During the summer encampment they were dubbed the "Peepers," and they immediately accepted the name with a great deal of pride, adopting as their cry "Peep, Peep." (Said cry being given in the manner of a baby chick lost from its mother). None were given their commission until after the summer

encampment, and by October, 1935, all eight vacancies were filled with rated JAO's. We are proud of our new officers and expect great things of them.

An ambitious controlled flying schedule to be completed by July 1, 1936, has been set up, and there is considerable rivalry between "A" and "B" Flights as to which will do the best job during this period. Pilot-observer teams have been formed, and every week-end our ships are in the air every available minute performing tactical missions. Within the next few weeks, we shall limber up the old machine guns on the range at Camp McRae in hopes of qualifying all our officers as aerial gunners. Particular attention is also being given to blind flying training and all pilots are striving to get a certificate of proficiency in blind flying from our instructor, Lieut. Claire Stroh. We expect to end this fiscal year with a job well done and many hours of constructive flight behind us.

Our hangar and administration quarters have been a sore spot with us for a long while but now, at last, our fond dreams are being realized. Our new \$75,000 hangar and administration building will be completed about July 1, 1936, and will be one of the largest and best of any National Guard Squadron in the country. Are we happy! Each section will have ample quarters, including the Officers' Club, which will be complete even down to the last detail.

This year's summer encampment will be held the latter half of August at Camp Hulen, Texas, in conjunction with the 206th Coast Artillery. After sipping the elixir of the Kansas sun flowers around Fort Riley for a number of years, we ought to be in good shape to rope or, possibly, throw some Texas bulls.

We are proud of our near perfect attendance record of both the officer and enlisted personnel. This record is due to the fine esprit de corps existing in the organization.

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41st Division Aviation, Washington National Guard
(Continued From page 23)

continental Airway, inauguration of the Public Works Administration airport program in Washington, and assistance to all other arms of the service.

Officers of the organization include Major Robin A. Day, commander; Captains Robert Owen, L. C. Sherman, Claude Owen and William G. Foster; 1st Lieuts. Laurie Heral, Byron Cooper, Dale Swartz, Ellsworth C. French, Clare Bartnett, Stanley Wagner and H. R. Wallace (commander, photo section); 2nd Lieuts. E. Malstrom, Harold Hansen, Jack Rose, Emmett Corrigan, Dean Eshelman and Carl Shirmer. Captain John Walter, pilot-flight surgeon, died late in March. No successor has been appointed.

37TH DIVISION AVIATION, OHIO NATIONAL GUARD
(112th Observation Squadron)
Cleveland Airport, Cleveland, Ohio.

At the time it was decided that aviation should play a part in the National Guard, a squadron of Observation Aviation was assigned to the 37th Division, to be located at either Columbus, Cleveland or Cincinnati. Naturally, each of these three cities wanted to have the squadron located near or within its boundaries. It was finally decided that Cleveland should be the location.

The Cleveland Chamber of Commerce was active and helpful in locating the squadron at Cleveland, which at that time was in the process of developing the present excellent airport. Sufficient ground on the airport was deeded to the State of Ohio for the use of the squadron. After several weeks of intensive work in recruiting the enlisted personnel, the squadron was mustered in on June 20, 1927, by Major Emil Marx, who is now the Adjutant General of the State of Ohio.

Work was started upon the hangar as soon as the ground was available, and in due time the building was completed. On the first anniversary, June 20, 1928, the hangar was dedicated with appropriate ceremonies, numerous dignitaries attending.

The original officers were as follows: Major Thomas J. Herbert, Captains Errol Zistel, Fred L. Smith, Paul F. Collins, 1st Lieuts. Willard E. Leisy, Byron E. Cook, Ernest W. Lofquist, Clyde Young, 2nd Lieuts. Nevin C. Barnes, Wm. K. Ebel, John K. Gill, Clifford McMillin, Richard V. Nelson, Mack E. North and Harvey J. Stoneburner; 1st Lieut. Herbert B. Wright, Flight Surgeon, and 1st Lieut. Clyde H. Butler, Photographic Officer.

Changes have taken place in this organization as in affairs generally. Major Thomas J. Herbert was commissioned a Lieut.-Colonel and named Air Officer for the 37th Division. He was later retired due to injuries suffered in the World War. Captain Zistel was replaced in command of the Squadron upon the promotion of Col. Herbert, and continued in that capacity until he was named Air Officer of the 37th Division and advanced to the rank of Lieut.-Colonel, which he now holds. Captain Smith was advanced to the rank of Major upon the promotion of Col. Zistel, and is at present in command of the Squadron. Captain Collins moved to the east and was associated with Amelia Earhart in an air line. Lieut. Cook resigned to accept a Captaincy in the Air Reserve. Lieut. Ebel moved to Baltimore, became associated with the Glenn L. Martin Co., and at present is a Captain in the Maryland Squadron. Lieut. Stoneburner left for California to join the engin-

eer staff of the Douglas Aircraft Co. Lieut. Young was advanced to Captain, served as such for a number of years, resigned last summer due to ill health, and died shortly after the first of the year.

The present officers of the Squadron are Major Fred L. Smith, Captains Samuel J. Price, Clarence D. Barnhill, John K. Gill, Willard E. Leisy, Ernest W. Lofquist, 1st Lieuts. Martin F. McQuilkin, Richard V. Nelson, Erle S. Ross, Mack E. North, Raymond C. Russ, James C. Barr, Karl E. Bushong, Wm. M. Robertson, 2nd Lieuts. Rudolph W. Dean, Raymond C. Kissack, Kenneth A. Cool, Donald W. Patrick; Capt. Herbert B. Wright, Flight Surgeon and 2d Lieut. Henry A. Crawford, Photographic Officer. Recent resignations in the Squadron were by 1st Lieuts. Clyde H. Butler and Nevin C. Barnes, both being due to the press of business.

On September 15, 1927, the Squadron received 4 PT-1's, and proceeded to use them to the fullest extent under the capable guidance of 1st Lieut. (now Captain) "Shorty" Cummings, who was assigned to the Squadron as its first instructor. One of the old air mail hangars at the Cleveland Airport was used by the Squadron until its own hangar was available.

The schedule of drills was first worked out as follows: Friday night for class work and study, and Sunday morning for actual flight operations, which system is still in use by the organization.

In time the organization received three O-11's, and worked out with them, taking them to its first field training period during July, 1928. Later, O-2H's replaced the O-11's, and still later O-38's and O-38B's replaced the O-2H's. The organization at present is equipped with O-38's and O-38B's.

The Squadron has been using Camp Perry for its field training up to the present time. Lieut.-Colonel Harry Kerr, the commander of Camp Perry, has from the beginning been very helpful to our organization. In tiling the rifle range to make it suitable as an airdrome, and later in supervising the construction of a new field adjacent to Erie Proving Grounds on the west, Col. Kerr during the past year commenced construction of permanent buildings for the use of the Squadron at the new field, and the work is proceeding at a satisfactory rate.

It is understood that the organization will participate this year in the maneuvers of the Second Army, to be held during the first two weeks of August at Fort Knox, Ky. The officers and men of the Squadron are looking forward to an entirely different type of training period from that experienced in the past.

The Squadron participated in the Air Corps Maneuvers of 1931, and was placed among the three leading units for its

performance and efficiency. During 1932, the organization had the first taste of strike duty in the coal mine area of Ohio, and carried out its assignments with promptness and dispatch. During the Electric Auto Lite strike at Toledo, the Squadron furnished ships to transport gas bombs from Pittsburgh to Toledo. It has also dropped food to vessels stuck in Lake Erie ice, worked on search parties, scattered ashes, acted as escort to visitors and otherwise justified its existence.

At the expiration of Capt. Cummings' tour of duty with the Squadron, 1st Lt. Charles Backes (later Captain) was assigned as our Instructor. Both of these gentlemen have done a very good job while they have been with our organization, and just as we were very sorry to see "Shorty" leave, so shall we also be very sorry to bid good-bye to Captain Backes.

The 112th Observation Squadron has participated in the National Air Races from 1929 to the present time, and if any of the readers of this column have

neglected to take advantage of the hospitality of our organization, it is the writer's observation that the fault lies with the reader.

The Airport at Cleveland at the present time consists of 640 acres, which is rapidly being increased in size to 1040 acres, due to the good offices of the WPA. It is planned to install an asphalt landing mat, 2,000 feet square, on the east center of the field and to extend the west part of the field to provide for a blind landing area and the National Air Races. The longest approach on that side will be 8,800 feet, the present temporary grandstand to be moved to the bank of Rocky River and made a permanent installation.

The enlisted personnel of the Squadron is to be congratulated upon the loyalty and ambition shown since the formation of the organization. Some of the original members are still connected with the Squadron and are our most valued veterans. A chain is as strong as its weakest link, so we consider ourselves fortunate to have such reliable personnel.

NEW ATTACK PLANE ARRIVES AT BARKSDALE FIELD

After considerable delay and speculation, the first of the new A-17's finally arrived at Barksdale Field, La., having been flown from the Northrup factory by Lieut. Gavin, Engineering Officer of the 13th Squadron. A large unofficial welcoming committee expressed immediate approval of the plane's design and appearance.

Subsequent flights by pilots of the Third Attack Group brought further approval of the plane's flying qualities. It handles nicely in the air, maneuvers smoothly and with a minimum of "squashing." Slow landing speed and rapid take-off are further points of superiority. Cruising speed, as to be expected, is much faster than that of the previous model attack plane, and this is true also of its top speed. The greatest advance is in the cruising radius.

As in most of the newer planes, there are more cockpit gadgets too, such as propeller gear shift and cowl flaps, to occupy the pilot's mind, but he trades mental activity for increased physical comfort. Thirteenth Squadron pilots who flew the new plane rubbed their weather-beaten faces and wished in retrospect that they might have flown in the comfortable enclosed cockpits during the recently completed New England Maneuvers.

Less maintenance has been necessary than on the previous model, and the crew chief's opinion of the new plane is also favorable. Cleanliness of design results in a minimum of external attention and adjustments. Experimentation and study by Lieut.-Colonel Naiden and

the Group Engineering Staff have resulted in recommendations for minor changes which will improve serviceability and assist in maintenance.

Staff Sergeant Krovontka, the first A-17 crew chief, reports a "smooth running engine, with all parts, except a few plugs, easily accessible for inspection and adjustment. Engine performance has been quite satisfactory. It starts easily and the only difficulty experienced so far has been in connection with it stopping. However, with the assistance of Mr. Klingan, Pratt & Whitney representative, the safest and most effective methods for starting and stopping have been worked out.


Group authorities were gratified to relieve the strain on their aesthetic judgment when they finally adopted the simple and appropriate design for painting submitted by Cadet Macklin.

The new streamlined wing lights and "spread" beam have proven quite satisfactory for night landings.

The principal problem concerning the new planes is not one of quality, but of quantity. Since the Attack Group is all ready trading in its well used old models, delivery of the new ones can hardly be too rapid.

Special effort has been made in the Bombardment Squadron, Langley Field, during the last month to qualify all officers, flying cadets and enlisted men as Expert Aerial Gunners before the bombing season, starting about May 15th. So far, over 95% of those firing qualified as exper-

33RD DIVISION AVIATION, ILLINOIS NATIONAL GUARD
(108th Observation Squadron)
Municipal Airport, Chicago, Illinois.

 CELEBRATING its ninth anniversary on July 1st of this year, the 108th Observation Squadron of the 33rd Division, Illinois National Guard, was formed on

July 1, 1927, under the direction of Major-General Roy D. Keehn and Major Merrill D. Mann, Jr. Planes and pilots of the Squadron have piled up nearly 14,000 hours in the air, and many of the original officers and several of the men, who were in the Squadron when it was formed, are still active members of this unit. During all the activities of the 108th Observation Squadron, there have been no fatal accidents.

In August, 1927, a month after the Squadron was formed, the Division Aviation went to Camp Grant at Rockford, Illinois, for the first time. It was not until the day or so after the actual 15-day training period began that the Squadron was equipped with planes. These were four PT-1 Consolidated, and were flown up to Camp Grant by Regular Army officers from Texas.

Since it was the first time that other units of the Division had had the opportunity of working with an Air Service unit, the planes were popular. One of the first activities of the unit was to carry as many of the officers of the unit as was possible on short flights over the camp area. A section of the parade ground was used.

In the nine camp periods during which the Squadron has functioned with other units of the 33rd Division, great progress has been made. An airport has been leveled out in one section of the camp ground area, and in the August, 1935, camp, ten airplanes of the latest type were available for training purposes.

Following the training period, the organization received one O-31 Gull wing Douglas. When Major Merrill D. Mann, Jr., reverted to his Regular Army rank of Captain and transferred to the Tactical School at Maxwell Field, Ala., last year, Captain C.A. McElvain, who up to that time had been the Squadron's Operations Officer, was named commanding officer. Captain Velie L. McElvain succeeded him as Operations Officer.

Operating from the Chicago Municipal Airport, one of the busiest in the United States, the Squadron has carried out a definite program, increased from year to year as the type of equipment and number of planes increased. Formation flying, mosaic photography, oblique photography, radio communications, dropping and picking up messages, instrument flying, individual night and day navigation flights, and the performance of various other missions have been carried out.

During 1935, using the range at Camp

Logan, Ill., and operating out of the Kenosha Airport, 18 officers of the Squadron qualified for various aerial marksmanship ratings. Those qualifying for expert ratings were: Capts. Wilson Newhall, Herbert F. Fenwick (Flight Surgeon) Lts. Russell Daniels and Roscoe Burley. Those qualifying for sharp shooter ratings were Major C.A. McElvain, Capt. Clyde Wilcox, Lieuts. Monroe MacCloskey, John A. Casey, J.K. Fogel, Lester Marriner and Walter Baryl. Those qualifying for marksmen ratings were Capt. V.L. McElvain, Lieuts. J.C. Keogh and William Westlake.

In addition to the pilot's course, the Observer's course was also flown. Capts. R.C. Kuhn and S.J.V. Bovey qualified as experts. Lieuts. Frank Allen and Verner Wide qualified as marksmen.

Major Mann, while acting as commanding officer, was the Regular Army instructor of the unit. When he left the organization, Captain Charles Douglas, U.S. Army Air Corps, became the Regular Army instructor. Under the tutelage of Captain Douglas, weekly lectures are being held in the officers' lecture room on various phases of Air Corps and other units' activities.

This year 18 cadets were chosen, with a view to providing additional officer observer material. The course, in which Capt. Douglas and Lieut. J.C. Keogh were the instructors, started on January 1st.

Already covered in this course has been military map reading, organization of the Army, employment of the Air Corps, work of the Ordnance Department, use of weapons. The course has also included practical bench work on machine guns. Of the original 18 trainees, 12 remain. Some of the latter are attending radio school three nights a week and several of them can now receive and take about 25 words a minute.

In the belief that the hangar, provided by the State of Illinois nearly nine years ago, will be obsolete in housing new and larger equipment, Major McElvain and members of his staff worked out a plan for a new large hangar which, it is hoped, may be constructed with Works Progress Administration funds. Plans for this new hangar were developed after careful study of all the National Guard hangars in the United States. The proposed building is to be 220 feet by 60 feet, with a 98-foot opening. It has been estimated that such a building will cost in the neighborhood of \$295,000.

This modern hangar is to include class rooms, adequate space for communications, photographic, shop, supply and engineering departments, and will be used to house approximately \$500,000 worth of government equipment. Cooperating in developing plans for this new building are members of

(Continued on page 9)

44TH DIVISION AVIATION, NEW JERSEY NATIONAL GUARD
(119th Observation Squadron)
Newark Airport, Newark, New Jersey

THE last and, therefore, the "Recruit Squadron" of National Guard Aviation, officially designated as the 44th Division Aviation, was organized and Federally recognized on January 30, 1930.

In September, 1928, 1st Lieut. Kellogg Sloan and Sgt. Robert E. Maloney was designated by the War Department as the Instructor-Inspector and Sergeant-Instructor, respectively, to assist in the organization of this new unit. Their task was one requiring a start at scratch - the procurement of personnel, equipment and necessary State housing. Through their efforts, in cooperation with the various State departments, a two-story Administration Building and a large hangar were built at Newark Airport. Lieut. Sloan is deserving of much credit for the planning and designing of the buildings which have served so well in the adequate housing of this organization to date.

Major Arnold H. Krogstad, Air Corps, (now Lieut.-Colonel) officiated at the original muster, the result of which was Federal recognition as the 119th Observation Squadron, 119th Photo Section and the Medical Department Detachment, 44th Division Aviation.

The Squadron's first year was spent at Newark Airport in Armory Training and Field Training, testing its wings, some of which had been in storage many years. Early in its second year, Lieut. Sloan was retired as a Captain for physical disability. The loss of his stewardship was somewhat mitigated by the fact that he established residence in Cranford, N.J., and it is felt that he is still with us. Major Robert L. Copesey assumed command in January, 1931, and is still serving in that capacity. Major Copesey was trained in 1917 at Kelly Field. He remained in military and civil aviation and received his Majority in the Air Reserve in 1928. He relinquished this commission to join the National Guard. The late Lieut. John Kase served a short period of time as Instructor and was particularly valuable to the organization during the 1931 Air Corps Maneuvers, in which this Squadron participated with considerable success. Lt. Kase was succeeded by Capt. William J. McKiernan, Jr., who is still filling that assignment very effectively.

This organization now has two large hangars and a two-story Administration Building, located to the southeast of the "World's Busiest Airport", where it has been our pleasure to be host to over fifteen hundred visitors annually. Our friends in the Air Corps and other governmental services are believed to visit

us because we take good care of them and not entirely because of our proximity to New York City. There are over one hundred scheduled arrivals and departures daily at Newark Airport. This has created a special operating situation which we believe is not experienced by other Air Corps units. It has required us to adopt Airline procedure in clearing, receiving, and in flight discipline here in the airdrome area. We realize how nice it will be to have an airdrome of our own to use, and to some degree restrict other air traffic. Yet, we feel that, from a training standpoint, our location here at Newark has proven a very valuable one, since we can observe the operations of the Airlines at such close range.

Each year, we have been called upon for our full quota of cooperative missions with the Artillery, Anti-aircraft, and other arms. This has proven to be very valuable training, reaching its climax last year in our participation in the Maneuvers at Pine Camp, New York, during which time we were assigned as Army, as Corps, and as Division Aviation. The organization experienced no difficulties in carrying out successfully every type of mission assigned to it. It proved to be a healthy experience to operate in the field as a unit, living and working with five other complete squadron units under actual conditions of Army Field Operations.

Our Summer Training this year will be at Camp Dix, from July 5 to 19, at which time we would enjoy very much to be hosts to any visiting officers who might look in on us.

Our flight directive is made particularly flexible as it would pertain to navigation, employment of radio, computation and interception practice. It has been found that interest in flying military missions is greatly enhanced by the diversification. It was our good fortune to render valuable service in emergencies at sea and on land. The search for a lost airliner in sub-zero weather in upper New York last December was a difficult and most unpleasant assignment and yet three officers voluntarily gave their time and abilities to that emergency. During the disaster at sea of the S.S. "Morro Castle", pilots and observers of this organization saved many lives by directing rescue boats to those persons floating beyond the vision of surface searchers. Commendations are still being received as a result of this work.

Death has come to some who once flew with us and in every instance it occurred in line of duty. Each and every one of them gave a valuable contribution to the esprit-de-corps of the outfit.

NATIONAL GUARD AIR CORPS

By Major Ralph P. Cousins, Air Corps (National Guard Bureau).

HERE are 19 Observation squadrons, each with a photographic and attached medical section, in the National Guard of the various States. Eighteen of these are assigned to National Guard Divisions; one, the Arkansas unit, with no division assignment, is designated for corps use. New as Guard units after the war, they were organized and given Federal recognition during the years 1921 to 1930.

They are made up of 411 officers and 1,908 enlisted men. Of the officers, 318 are rated as pilots and 68 as observers without pilot ratings.

Initially, the units were equipped with five training type airplanes, furnished as a free issue from wartime stock by the Regular Army. These have been replaced successively by newer training types, and then by service types, so that now each unit is authorized eight service type Observation planes. Despite critical shortage of funds in recent years, the Bureau has met the increasing costs of this equipment, and today the units are practically up to authorized strength.

In their operation, the States furnish the airdrome and hangar facilities. The Federal Government furnishes the planes and allied technical equipment and provides pay for the Federal caretaker mechanics and all personnel in the units.

Pilots have received their training in various ways. Approximately 50 per cent are war-time pilots. Of the remainder, about one-half are graduates of the Air Corps Training Center, and the other half have been trained in commercial schools or locally in the units. Practically none of the observers are war-time officers. Most of them have received their training within the organization. Ordinarily they enlist for this training and, upon completion thereof, are examined for rating and are given a commission at the time the rating is issued. A policy now established provides an average of ten observers per unit.

All training is directed toward the development of a well rounded observation unit. Flying is done on prearranged schedules, in accordance with training programs established for the units by the War Department and Corps Area Commanders. Missions such as would be performed in war in artillery observation, infantry contact and liaison, and aerial photography, using radio and other means of communication, are performed under conditions approaching as nearly as possible those to be encountered in actual service. This is done at prescribed drill periods or at other

times. Planes are always available for the use of pilots for either day or night missions, and pilots are encouraged and required to fly regularly and frequently. Initially this flying was confined largely to day-time missions in good weather. In the formative years, pilots averaged approximately four hours per month. With the development of planes, engines and flying instruments, however, this training has progressed until in the last two years all pilots in the Guard have averaged over 100 hours per year on day and night missions, in both good weather and bad.

During the summer training camps, every effort is made to train units in cooperative missions with ground forces. Particular stress in this work is made on performance of air-ground communication and liaison, using radio, visual signals and a system of pick-up and drop messages. Many hours are spent in flying missions for the training of anti-aircraft artillery in tracking and sound location, and in towing targets for anti-aircraft and light artillery fire. These cooperative missions ordinarily are limited by the amount of time the ground forces can devote to them, bearing their other ground training missions in mind.

In the development of Regular Army aviation, and based on the increasing performance of planes and the elimination of bad weather and darkness as limiting factors to continuous flight, the Army Air Corps has developed an Air Force, made up of Bombardment, Pursuit and Attack. In this way they have largely departed from the war-time conception of limited operation and direct support of ground troops. As this development has continued they have grown away from Observation aviation, which has been left more and more the responsibility of the National Guard. Thus it happens that these units will be called on in war to carry almost wholly the responsibility of all ground force observation up to that for the Army.

Since Observation squadrons and planes in the squadrons will operate in war mostly as individual airplanes, or small formations, and will not be called on for mass formation fighting, no particular effort is made to group the planes of several squadrons in mass formation. When, on special occasions, it has been done, the results have been gratifying. A notable instance was the Guard participation in the 1931 Air Corps Demonstration Maneuver, for which each Guard unit was called on to furnish five planes. These were grouped into a wing, made up of three groups, with a total of 95 planes. This wing participated as a unit in all the difficult flying of the entire maneuver without a single casualty to any of the participating personnel or planes. Lesser

concentrations have also occurred at National Guard conventions and the National Air Races. At the National Guard convention in Nashville last fall, there were 60 National Guard planes, and at the National Air Races in Miami in January, 1935, practically every serviceable National Guard plane was present.

The ground facilities and general ground organization are of great importance in the peace-time development of aviation. During the period when the Army was called on to carry the air mail, the National Guard placed all its facilities at the disposal of the Air Corps. These were utilized in the most gratifying way. National Guard air-drome facilities and the mechanic per-

sonnel formed the background for the Army network on all lines. In addition, the Guard turned over to the Air Corps during this effort, 53 of its best and newest planes. It would have been impossible for the Air Corps to have operated as efficiently as it did without the assistance of the National Guard.

Thus these units have grown to their present important place in our scheme of national aerial defense. Each year their value becomes more apparent to the ground command of the National Guard and the Army. Their relations with their ground commands and with the Army Air Corps are cordial. They are developing well and will answer "Present" when the roll is called in our next National Emergency.

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MILITARY RECORD OF MAJOR-GENERAL ALBERT HAZEN BLANDING
Chief of the National Guard Bureau

BORN in Lyons, Iowa, November 9, 1876. Moved to Florida with his parents in December, 1878. Graduated from the East Florida Seminary (State Military Academy) No. one in class of 1894, with rank of cadet first lieutenant and battalion adjutant.

Enlisting in Gainesville Guards, F. S. T., in 1895, General Blanding served as an enlisted man in that organization until its disbandment prior to the Spanish-American War. On September 23, 1899, he was commissioned a Captain in the National Guard of Florida and assigned as Regimental Adjutant, 2nd Infantry. He was commissioned Major in 1906, Lieut.-Colonel in 1908, Colonel in 1909, and commanded the 2nd Florida Infantry in Mexican Border service from June, 1916, to March, 1917.

Mustered into Federal service for the World War, August 5, 1917, he was appointed Brigadier-General by the President, August 30, 1917, and assigned to command the 56th Depot Brigade, 31st Division. Upon the breaking up of this brigade in October, 1917, he was attached to command the 56th Artillery Brigade of the same division. In December, 1917, he was assigned to command the 185th Infantry Brigade, 93rd Provisional Division, going overseas with his organization in April, 1918.

Sent to the front three days after arrival in France, General Blanding was attached to the 16th (French) Infantry Division for observation and instruction and served with them for about ten days. Late in April he was attached to the 2nd American Division, and served with it until June 15, 1918. He was then attached to the 63rd Brigade of the 32nd American Division and served with it in defensive operations in the Rouge Mont Sector in Alsace until about July 10, 1918, when he was ordered to the Fifth

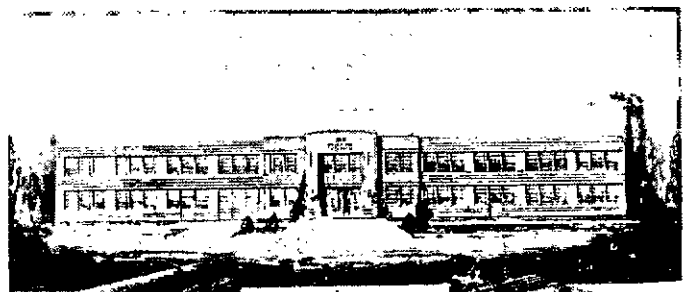
American Division in the St. Die Sector in Lorraine where he commanded the north sub-sector of the line held by that division and manned by the 60th U.S. Infantry, the 137th French Infantry and one battalion of the 1st Alpine Chasseurs.

On the withdrawal of the 5th Division from the line of that sector, he was ordered to the 27th American Division to command the 53rd Brigade, taking over on the night of August 30th with the brigade in the line in Deckaboush Lake Sector between Ypres and Mt. Kemmel, Belgium. He commanded the troops of this Division which were used in the taking of Vierstraate Ridge and in the assault on Wycheate Ridge, August 31st to September 2nd. From there he proceeded with the 27th Division to the Somme Area and commanded the troops used in the preliminary attack on the Hindenburg line, September 27, 1918, and the 53rd Brigade in the main attack on September 29, 1918. On the afternoon of that day he was placed in command of all the Infantry of the Division. He commanded his brigade in the advance after the breaking of the Hindenburg Line to the vicinity of Le Cateau, including the Battle of the Selle River, October 17-22, 1918.

On the final withdrawal of the 27th Division from the line, General Blanding was ordered to command the 184th Brigade of the 92nd Division, and joined it on November 2, 1918, near Pont a Mousson, opposite Metz, being in the line there at the declaration of the Armistice. He relinquished command of this Brigade in Brest, France, in February, 1919, and returned to the United States as troop commander on the U.S.S. PRESIDENT GRANT, with part of the 41st Division and casualties. He was discharged March 1, 1919.

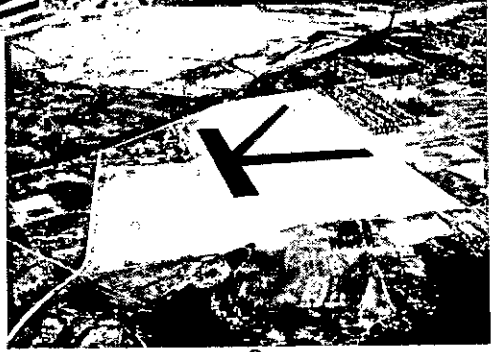
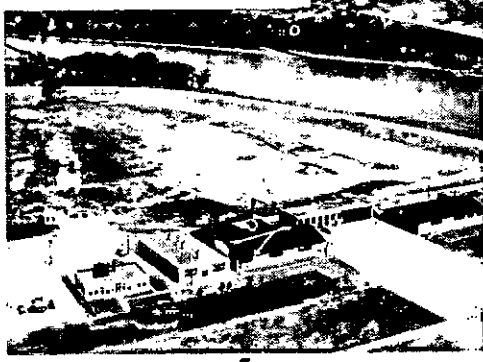
Awarded the D. S. M., one divisional citation from Hq. 27th Div., and one citation from G. H. Q., A. E. F. Appointed Major General of the Line, and assigned to command

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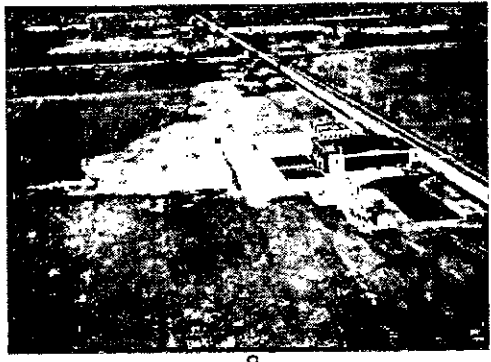
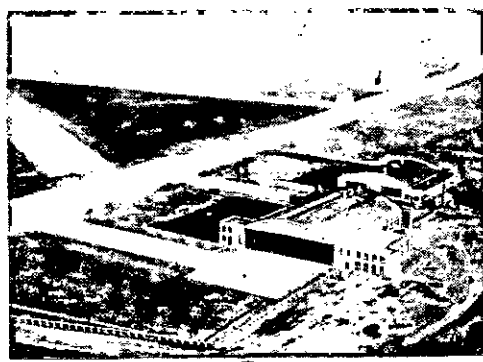
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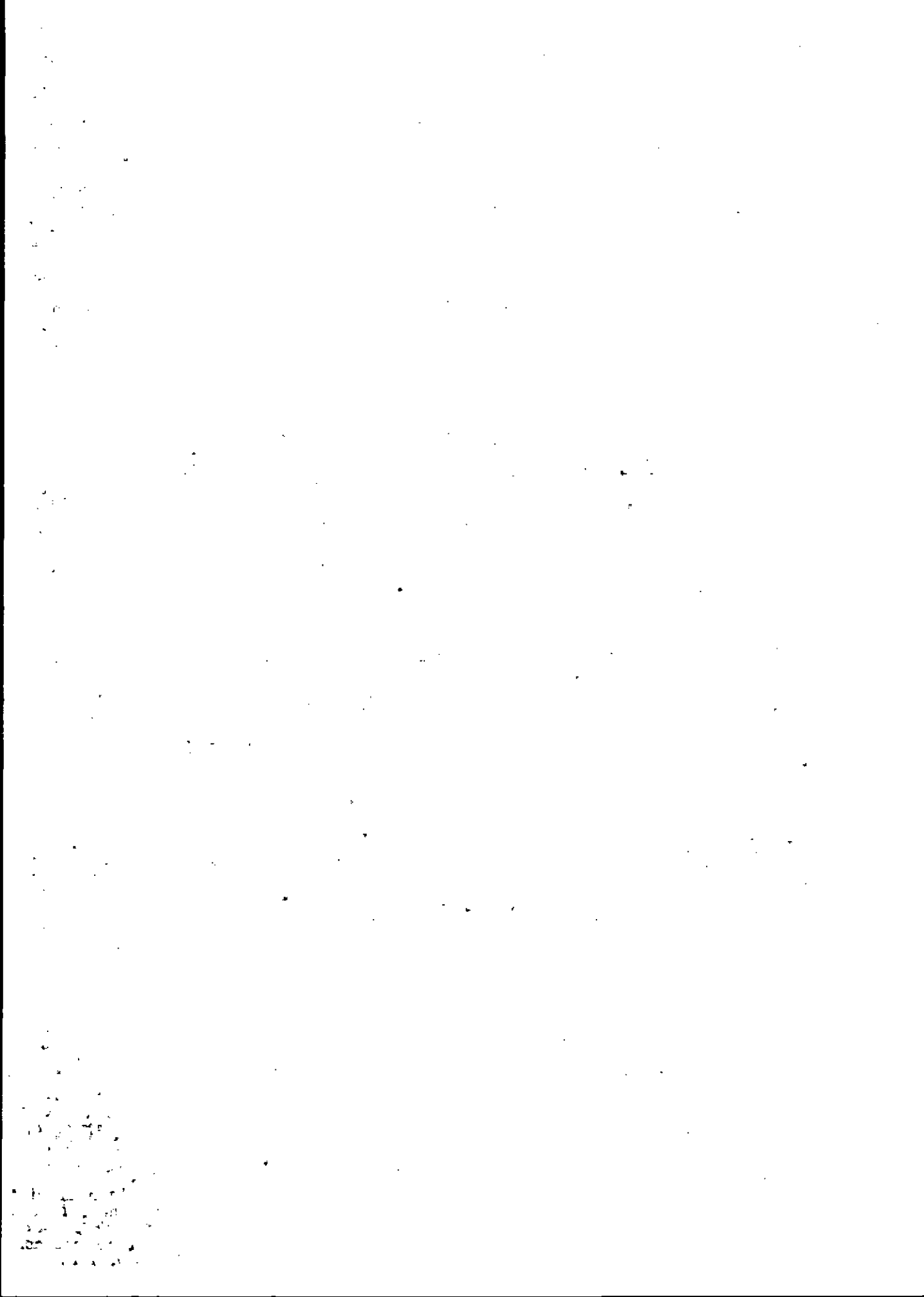
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the 31st Division on October 15, 1924.

General Blanding was awarded the Active State Service Medal on April 8, 1929, and the Florida Cross on July 21, 1932. On January 31, 1936, he was appointed Chief of the National Guard Bureau.

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POLAR EXPLORATION PLANE GOES TO MUSEUM

The veteran Northrop Gamma "Polar Star," in which Lincoln Ellsworth and his pilot, Lieut. Herbert Hollick-Kenyon successfully spanned the Antarctic continent between November 22nd and December 5th, last, arrived at Bolling Field, D.C., on April 30th, where it was accepted by officials of the Smithsonian Institute. The plane arrived at Bolling Field from Floyd Bennett Airport, Brooklyn, N.Y., at about 1:30 p.m., being flown by Lieut. Hollick-Kenyon.

Mr. Ellsworth had been in the city two weeks previously, when he was awarded the Hubbard Gold Medal, highest award of the National Geographic Society, by President Roosevelt for "Heroic and extraordinary achievement in Arctic and Antarctic exploration, 1925-1936." On the same evening, April 15th, Mr. Ellsworth spoke at Constitution Hall in Washington to a large group of dignitaries, and outlined new geographic knowledge resulting from his flight and described the experience of himself and Hollick-Kenyon. Among those present at the lecture were Major-General Oscar Westover and Brigadier-General and Mrs. Henry H. Arnold.

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AIR MANEUVER IN SAN ANTONIO CELEBRATION

At 4:00 p.m. on Friday, April 24th, nine Pursuit airplanes, led by Captain C.K. Rich, and nine Bombardment airplanes, led by Capt. W. E. Whitson, took off from Kelly Field, Texas, on a training maneuver involving the interception of Bombardment airplanes by the Pursuit formation. At the same hour, a 4-mile long "Battle of Flowers" parade in commemoration of the 100th anniversary of the Battle of San Jacinto, began to weave through the streets of San Antonio. Hundreds of beautiful floats attracted thousands of people. This throng was surprised and fascinated by the two formations of airplanes which approached the parade route close enough to enable pedestrians to follow their movements.

Captain H.R. Yeager, in a BT airplane, was circling above these formations with a member of the Reserve Corps as his passenger to act in the capacity of radio announcer. The signals from this BT plane and from the Pursuit plane flown by Captain Rich were picked up by one of the local broadcast stations and re-broadcast over the Southwest chain

of stations. Captain Yeager gave a very good description of the maneuvers being performed by the airplanes, an outline of the problem and the tactics involved. His passenger followed this by an interesting description of the parade as it appeared from his position high in the air over San Antonio. One of the regular announcers of the broadcasting station followed this with a description of the individual floats as they passed just beneath his improvised reviewing stand on the balcony of a local hotel. The broadcasting station reports that many favorable comments were received from residents all over the State and added that they considered the broadcast not only very successful and interesting but educational as well.

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KEY TO NATIONAL GUARD AIRPORTS

The composite illustration opposite this page, showing airports of various National Guard Division Aviation units, are identified below, as follows:

1. Proposed new hangar for the 108th Observation Squadron at Chicago Municipal Airport.
2. Cleveland Airport, 112th Observation Squadron, Ohio National Guard.
3. Griffith Park, Los Angeles, Calif., 115th Observation Squadron, California National Guard.
4. Newark Airport, 119th Observation Squadron, New Jersey National Guard.
5. Brainard Field, Hartford, Conn., (before the flood), 118th Observation Squadron, Connecticut National Guard.
6. Logan Field, Baltimore, Md., 104th Observation Squadron, Maryland National Guard.
7. Lambert-St. Louis Municipal Airport, Robertson, Mo., 110th Observation Squadron, Missouri National Guard.
8. Stout Field, Indianapolis, Ind., 113th Observation Squadron, Indiana National Guard.

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TOWING TARGETS FOR MECHANIZED CAVALRY

One officer and seven enlisted men of the 15th Observation Squadron departed from Scott Field, Belleville, Ill., for Fort Knox, Ky., to tow aerial targets for the 1st Cavalry (Mechanized) during the period May 1st to June 1st. They are: 2nd Lieut. Jack S. Bond, Air Reserve, Privates D.K. Phillips and C.C. Mitchell, pilots; Sergeants B. Maxam and J.R. Whitson, tow target operators; Staff Sergeants G.H. Sparling and G.E. Brown, crew chiefs; and Sergeant A.T. Henderson, chauffeur.

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At the end of the working day on May 1st, 2,000 sq. yards of reinforced concrete had been laid on the new airplane apron at Scott Field, Ill., representing about one-sixth of the total concrete to be laid.

V-7009, A.C.

THE AIR CORPS TRAINING CENTER

The mission of the Air Corps Training Center is to turn out young military pilots competent to undertake the duties of second lieutenant in an Air Corps tactical squadron. The organization of the combat squadrons requires a high ratio of young pilots to be officers of the higher grades. This ratio is maintained by sending each year from 200 to 250 pilots, trained at the Air Corps Training Center, to tactical squadrons of the Regular Army. These young pilots are continued on active duty as Flying Cadets during one year, and if their service shows them to be competent, they are then commissioned as second lieutenants, Air Reserve, and given a further year of active duty.

There is legislation now pending designed to authorize the calling to active duty of 1350 Reserve officers for periods of five years each. This would enable the selection each year of approximately 270 graduates of the Training Center for duty with tactical squadrons. The proposed law provides for the payment, upon discharge after a minimum of three years' active duty, of a bonus of \$500.

The Training Center is organized to receive new classes at the Primary Flying School at Randolph Field, Texas, every four months. Each class has four months in the Primary Stage and four months in the Basic Stage. They then move over to Kelly Field for their last four months at the Advanced Flying School where they are graduated as pilots. "Primary Training Airplanes" or PT's are flown by trainees during the Primary Stage. In the Basic Stage training is conducted in BT airplanes, which are larger, speedier and more maneuverable, and which provide an intermediate step in piloting between the PT's and the service type planes, such as Pursuit, Bombardment, Attack and Observation, which are used in the flying training at the Advanced Flying School.

Since a knowledge of the equipment he is flying is essential to the student, and a continuous diet of flying would make a student "stale," it is convenient and advantageous to combine with the flight training, ground instruction in airplane engines, theory of flight, radio, ground gunnery, air navigation, meteorology, flight maps, airplane maintenance and other subjects. This ground instruction is continued until graduation. At the Advanced Flying School it emphasizes the tactics of each class of aviation - Bombardment, Attack, Observation and Pursuit.

The Flying Cadets, with the exception of a few ex-enlisted men from the Army, are drawn entirely from civil life. They are selected from candidates between the ages of 21 and 27 years who have successfully completed at least two years in a college or university and who are in excellent physical condition. College graduates, however, receive priority in the selection of students.

In the period of one year at the Training Center the young student receives a total of 323 hours' flying instruction. As a result of this intensive instruction carried on al-

most continually throughout the year, the students put in a tremendous number of flying hours per year.

About 45% of the students entering the Primary Flying School successfully complete the course and graduate from the Training Center. Most of the failures are due to unsatisfactory progress in flying. Therefore, the fact that a candidate has passed the rigid physical and educational requirements does not insure his graduation. This indicates that there are other factors that made up the potential military airplane pilot that are not being given consideration in the selection of students. The Training Center, and especially the School of Aviation Medicine, are studying this problem and with very promising and positive results. Success in being able to determine readily those possessing sufficient aptitude or other essential qualities for rapid progress in military flying would be of the greatest value in a national emergency.

Candidates for flying training who lack the required educational credentials must demonstrate their proficiency by successfully passing examinations in United States History, English, General History, Geography, Higher Algebra, Geometry, Trigonometry, and Physics. Practically all who finish at the Primary Flying School graduate four months later from the Advanced Flying School. The graduate who completes his year of active duty, under his status as a Flying Cadet, with a tactical squadron, and his additional year or more of active duty with a tactical squadron, under his status as an Air Reserve officer, and who then reverts to his former civilian status, may and can maintain active contact with the Service through membership in the National Guard or Organized Reserves. Furthermore, as a civilian with this wealth of flying experience behind him, he is in a favorable position to seek employment with a commercial aviation company. Then, too, there is the recent possibility of securing a permanent commission in the Air Corps.

A Day at the Training Center

During the afternoon most men devote themselves to some form of voluntary athletics. This takes the form of a bitterly contested kitten-ball game, a set or two on the tennis courts, a battle of strikes and spares on the local bowling alleys, a red hot ping pong series, or even a rubber of raucous bridge barring no "holts." The surroundings are ideal. Randolph Field is the most beautiful and well appointed military post in the Army. The Air Corps has a justified reputation of free-and-easy hospitality. San Antonio is a delightfully friendly city, combining the charm of the old South with the dash of dusky Mexico and the modernism of the West.

Routine flying is conducted in the morning, each student being in the air from 25 minutes to two hours, depending upon the progress he has made in the flying course. Ground school work is also conducted in the morning, and some of it in the afternoon, which is also devoted to drill with the rifle. However, there is plenty of time left for athletics and rest. Later on in the flying course, two nights a week are devoted to night flying training.

N.



G.

LT. COL. J. N. JEFFERS
CALIFORNIA N.G.



LT. COL. G. A. VAUGHN
NEW YORK N.G.



MAJ. ERROL ZISTEL
OHIO N.G.

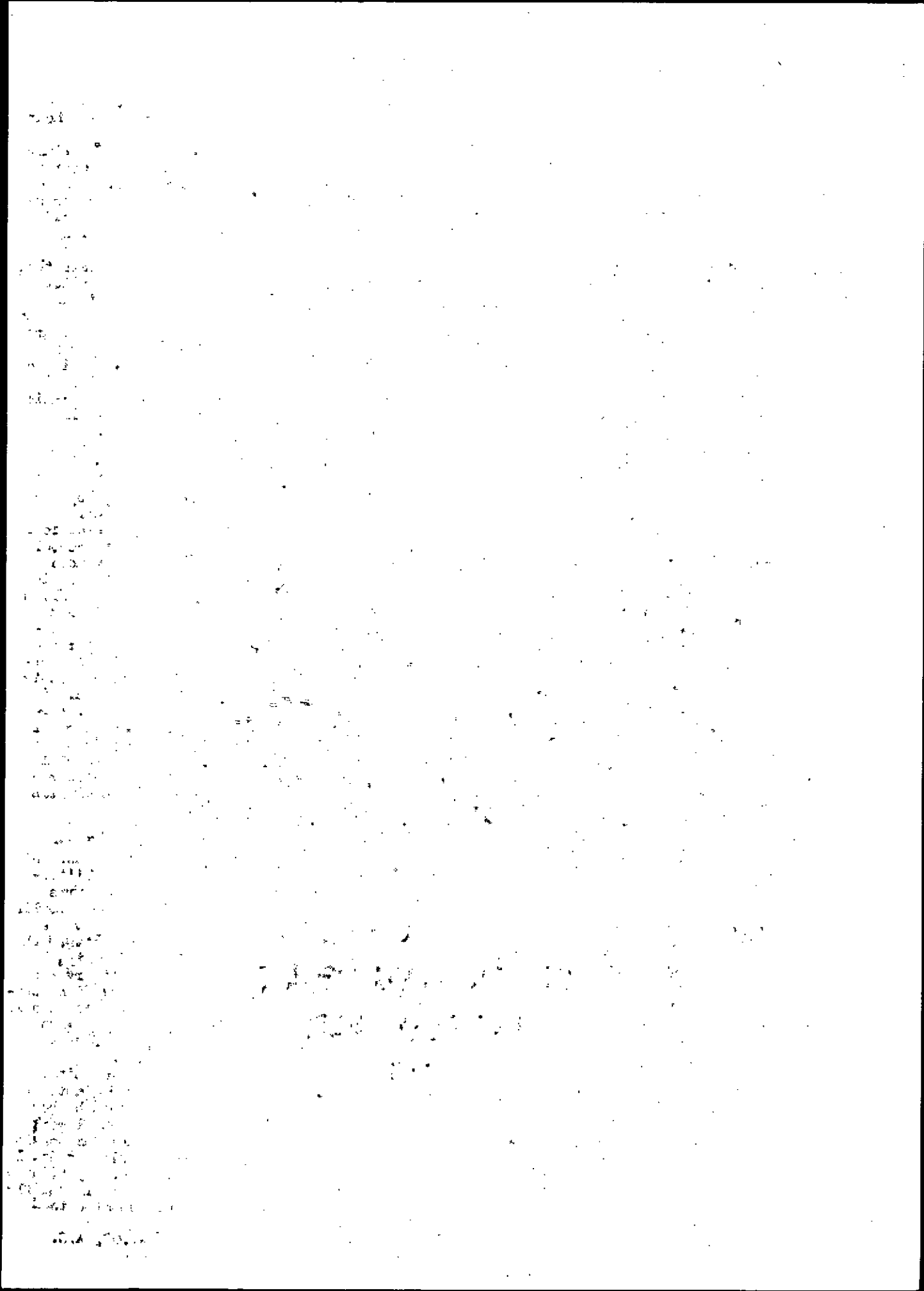
OFFICERS
OF DISTINGUISHED
WORLD WAR
SERVICE



LT. COL. H. W. COOK
INDIANA N.G.



MAJ. WM. TIPTON
MARYLAND N.G.



NATIONAL GUARD AVIATION OFFICERS OF DISTINGUISHED WORLD WAR SERVICE

LIEUT.-COLONEL JOHN N. JEFFERS

Born in Los Angeles, Calif., December 9, 1895. Graduate of Polytechnic High School of Los Angeles, Calif., and of Stanford University, Calif., (A.B. degree).

Enlisting in the Aviation Section, Signal Corps, August 15, 1917, he received his advanced flying instruction at the French aviation schools at Tours and Issoudun. Following his appointment as a 1st Lieutenant, he took a course of instruction at the aerial gunnery school at Cazeaux. In April, 1918, he was attached to the 94th Pursuit Squadron at the front, and participated in intensive patrol and combat operations with this unit. He is credited with the destruction of two enemy aircraft in aerial combat.

Decorations: Croix de Guerre (France); Distinguished Service Cross (U.S.).

Col. Jeffers is now Air Officer of the 40th Division Aviation, California National Guard.

LIEUT.-COLONEL GEORGE A. VAUGHN

Born in Brooklyn, N.Y., May 20, 1897. Graduated from Adelphia Academy, Brooklyn, N.Y., in 1915, and from Princeton University with the degree of B.S. in 1920.

Enlisting in the Aviation Section, Signal Corps, June 29, 1917, Col. Vaughan performed most of his active service overseas. He was commissioned a 2nd Lieutenant on February 7, 1918, and 1st Lieutenant on March 8, 1918.

Col. Vaughn received his ground school training at the School of Military Aeronautics, Princeton University, and his flying training in England, following the completion of which he was assigned to the 84th Squadron, R.A.F. He served with this organization until August 28, 1918, when he was assigned to the 17th U.S. Aero Squadron.

Rated as the second living "Ace" of the U.S. Air Service, Col. Vaughn is officially credited with 13 victories over enemy aircraft. He was awarded the British Distinguished Flying Cross and the U.S. Distinguished Service Cross, the latter decoration for extraordinary heroism in action near Cambrai, France, Sept. 22, 1918. While leading an offensive flight patrol, he sighted 18 enemy Fokkers about to attack a group of five Allied planes flying at a low level. Although outnumbered nearly 5 to 1, he attacked the enemy group, personally shot down two enemy planes, the remaining three planes of his group shooting down two more. His courage and daring enabled the group of Allied planes to escape. Again, on Sept. 28, 1918, he alone attacked an enemy advance plane which was supported by 7 Fokkers, and shot it down in flames.

Col. Vaughn was honorably discharged from the service, February 7, 1919, and is now Air Officer of the 27th Division Aviation, New York National Guard.

Lieut.-Colonel Errol Zistel

Born in Sandusky, Ohio, July 16, 1895. Graduated in 1915 from St. Johns Military Academy, Delafield, Wis. Enlisting in the Aviation

Section, Signal Corps, April 17, 1917, he was assigned to duty as student at the Curtiss Aviation School at Newport News, Va., from which he graduated July 28, 1917. Shortly thereafter he was assigned as student at the School of Military Aeronautics, Ohio State University, and, following his graduation therefrom, was ordered to duty overseas, receiving additional flying training, also instruction in aerial gunnery, in various British aviation schools. Upon the completion of his training, he was assigned to the 43rd Squadron, Royal Air Force, for duty in France. On July 2, 1918, he was transferred to the 148th U.S. Aero Squadron, and he was on duty therewith until he was wounded in action on Sept. 24, 1918. Col. Zistel was honorably discharged from the service on December 26, 1918.

Col. Zistel is credited with the destruction in aerial combat of three enemy aircraft. He is now Air Officer of the 37th Division Aviation, Ohio National Guard.

LIEUT.-COLONEL H. WEIR COOK

Born in Wilkinson, Indiana, June 30, 1892. Arriving in France about one month prior to America's entry into the war, he enlisted in the French Army, served therewith for six months and then obtained his release to join the U.S. Air Service in France. He served at the front as a member of the 94th Aero Squadron and participated in much of the aggressive combat and pursuit work of this Squadron. He is officially credited with the destruction of 7 enemy aircraft (3 airplanes and 4 balloons), thus bearing the unofficial designation of "Ace." For six months following the signing of the Armistice, he was stationed at Coblenz, Germany, with the Army of Occupation. He was promoted to Captain, March 18, 1919.

Decorations: Distinguished Service Cross (U.S.); Medaille Commemorative (France).

LIEUT.-COLONEL WILLIAM D. TIPTON

Born in Jarrettsville, Md., Dec. 11, 1892. Graduated from Western Maryland College, A.B. deg. in 1910; B.S. deg. Johns Hopkins University, 1921.

Enlisting in the Aviation Section, Signal Corps, in May, 1917, he graduated from the School of Military Aeronautics, Ohio State University, in August, 1917, and in that month was ordered to duty overseas. He was a student at the aviation ground school, Oxford University, England, graduating in Oct. 1917, and received his flying training in the Royal Air Force. Commissioned a 1st Lieutenant, U.S. Air Service, in Feb. 1918, he saw active service with Squadron No. 3, Royal Air Force, March to July, 1918. In July and August, 1918, he was flight commander with the 17th U.S. Aero Squadron. On August 28th he was taken a prisoner of war and released in December, 1918. During his active flying service at the front, he participated in both the Somme and Lys defenses, and is officially credited with the destruction of two enemy airplanes and one balloon. He was honorably discharged from the service, February, 1919, and later commissioned a Captain in the Air Reserve.

In 1921, Col. Tipton became a member of the Maryland National Guard Aviation. He is now the Air Officer of the 29th Division Aviation.

BUYING MILITARY AIRPLANES

By Major-General Oscar Westover, Air Corps,
Chief of the Air Corps

The numbers of each class of airplane which should be bought is a subject that has been uppermost in the deliberations on aviation programs and organization for several years. This question looms large in considerations not only in our own country but in all the leading air powers of the world. It constituted one of the most important items of study by the War Department Special Committee on the Army Air Corps, which was headed by the Hon. Newton D. Baker, and which held its sessions in Washington during the middle of 1934.

The determination of the proper ratio of Pursuit aviation to Bombardment aviation in the make-up of the fighting air force of the country, and the number of observation airplanes needed to serve the ground armies have long been taxing the authorities. The Baker Board arrived at a ratio of 52% of Pursuit airplanes to 48% Bombardment airplanes. This ratio constituted a considerable increase in the proportion of Bombardment over what had been adopted under the Air Corps Five-Year Program, formulated in accordance with the Air Corps Act of 1926. Under this program the ratio was 79% Pursuit to 21% Bombardment.

A study submitted for the consideration of the Baker Board showed that in 1934 in the air forces of the leading air powers the average proportion of Pursuit to Bombardment was 58% to 42%. This higher proportion of Bombardment in the foreign air forces to that obtaining in our own service no doubt influenced to a considerable degree the final recommendation upon this point which was submitted by the Baker Board. It will be recalled that this recommendation called for 52% Pursuit to 48% Bombardment, as compared with an average in leading foreign powers of 58% to 42%. This increase in Bombardment, recommended by the Baker Board, was in accordance with the clearly indicated trend in this direction as revealed by a study of the foreign air forces over a period of years.

This tendency to increase the proportion of Bombardment has continued since 1934. Data for foreign air forces considered fairly accurate shows the following ratios of Pursuit to Bombardment:

Germany	29% Pursuit to 71% Bombardment
Great Britain	35% Pursuit to 65% Bombardment
Italy	52% Pursuit to 48% Bombardment

It will be noted that the percentage in Italy is exactly the same as that recommended by the Baker Board. France has 61% Pursuit to 39% Bombardment, and Japan has 66% Pursuit to 34% Bombardment. It is believed that both France and Japan have programs calling for an increase in their Bombardment airplanes.

The average ratio for these five foreign powers is now 44% Pursuit to 56% Bombardment, an increase of 14 percent in Bombardment in two years. Compare this with the Army Air Corps program which shows a predicted status for June 30, 1937, of 45% Pursuit to 55% Bombardment. The foregoing data appear to indicate that airplane programs in our own case, as well as in those of the other leading air powers, are greatly influenced by "what the other fellow is doing." For lack of a better guide, this is probably a common sense procedure.

Of course, it is fairly certain that the proper proportion of the various classes of combat aviation which should be included in an effective air force should be predicated upon more basic considerations than simply a comparison with what the other nations are doing. Studies are constantly being developed with this objective in view. The Air Corps Tactical School at Maxwell Field, Ala., carries on from year to year, an intensive study of this matter from the theoretical standpoint. Now that we have a General Headquarters Air Force, this organization is carrying on this study from a practical standpoint. It must be readily apparent that these practical studies are essential to reaching adequate conclusions upon the subject of the proper proportion of Pursuit aviation to Bombardment aviation in an efficiently organized air force.

This decided trend toward an increased number of the larger sized airplanes has complicated the procurement programs of all the important air powers. Larger airplanes cost more! Procuring officers have found it impossible to buy the number of airplanes carried in the budget. Coupled with the increase in size of the airplanes themselves is an increase in the number and cost of the "gadgets" required to equip them. These two principal items furnish the answer to the question frequently asked: "Why hasn't the Air Corps got more airplanes?"

Applying this answer specifically, let us consider the first program prepared after the passage of the Air Corps Act of 1926, that for the Fiscal Year 1927, we find that 139 Pursuit airplanes were included and only 65 Bombardment. However, by the Fiscal Year 1937, just ten years later, only 78 Pursuit are included in the procurement program and 184 Bombardment are to be bought. The following are only a few of the items of equipment to be found in the 1937 Bombardment airplanes which were not available for use in 1927:

Automatic Pilot	Radio Direction Finder
Flaps	Gyro Turn Indicator
Radio Compass	Electric Bomb Release
Automatic Controllable Propellers	
Instrument Landing Equipment	

Retractable Landing Gear
Electric Remote Control for Wing Guns
Automatic Propeller Synchronizers

In addition to the above list, it is to be noted that many of the instruments and articles of equipment used in the 1927 Bomber have been so greatly improved that their cost in 1937 is considerably in excess of what it was in 1927.

We find that in the Fiscal Year 1927 estimates to the Appropriation Committee of the House of Representatives the unit cost of Pursuit airplanes was placed at \$33,500, and of Bombardment at \$64,000. In the Fiscal Year 1937 estimates, the unit cost of Pursuit was placed at \$30,000, and the average unit cost of three types of Bombardment at \$115,000.

Now if we apply these 1937 unit costs to the ratio of the two classes which existed in 1927, we find that, instead of having a program for 1937 of 78 Pursuit and 184 Bombardment, we would have a plan to buy 179 Pursuit and only 83 Bombers. And these planes would cost only \$14,915,000 instead of the \$23,540,000 actually allotted to the 1937 procurement.

In other words, if we still retained the 1927 policy as to the proportion of Pursuit to Bombardment airplanes, in 1937 our 262 airplanes of these two classes would cost us \$8,425,000 less

than under our present policy covering the ratio of these two classes. For this saving, and employing the same ratio, we could buy 147 more airplanes, or a total of Pursuit and Bombardment for 1937 of 409 instead of 262.

In view of this important increase in the number of combat airplanes, we should be able to procure by reverting to the policy of ten years ago, it is essential that we should be sure we are correct in our present policy. To reassure us on this point, we have, first, the fact that two leading air powers, Great Britain and Germany, are buying an even greater proportion of Bombardment airplanes than we are, while a third, Italy, is buying the same proportion. Secondly, the maneuvers of the GHQ Air Force show that this increased number of Bombers meets the requirements of air force operations while a smaller number does not.

It is believed that the people of the United States can derive considerable satisfaction from the thought that the military airplanes they are buying are as good as those of any other country, and that the proportion of the various classes is maintained in such a way as to insure, as far as is humanly possible, a well balanced combat force designed to afford the maximum air defense for the money expended.

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HOW TO SECURE A FLYING CADET APPOINTMENT

Young men interested in adopting flying as a career, and anxious to take advantage of the opportunity afforded them to obtain flying training free of cost at the Army Air Corps Training Center, often ask the question - "What must I do to secure a Flying Cadet appointment?"

The answer is very simple. Write a letter or post card to The Adjutant General of the Army, War Department, Washington, D.C.; or to the Chief of the Air Corps, War Department, Washington, D.C., or to the Secretary of the Air Corps Training Center, Randolph Field, Texas, and simply say: "Please send me information and application blanks relative to securing an appointment as a Flying Cadet in the Army Air Corps." Such a request will receive immediate attention.

If you will turn to page 32 of this issue of the News Letter, you will note the eligibility requirements incident to Flying Cadet appointments. It may be stated here that young men who, this year, fulfill the entrance requirements may expect to receive an appointment, as there are a number of extra vacancies.

Here are some of the alluring prospects ahead of the Flying Cadet:

An intensive one-year course of flying and ground instruction under a system generally conceded to be superior

to any in the world.

A salary of \$75.00 a month while undergoing training; also a ration allowance of \$1.00 per day.

Uniforms and equipment free of cost.

Appointment as 2nd Lieutenant, Air Reserve, upon completion of the year's flying course and graduation from the Advanced Flying School, and assignment to active duty with an Air Corps tactical squadron for a period of from three to five years.

Promotion to 1st Lieutenant upon completion of three years of such active duty, followed by active duty as a 1st Lieutenant for remaining two years.

Pay, allowances and flying pay the same as Air Corps officers of similar rank in the Regular Army, while on such active duty.

A bonus of \$500 upon discharge from the service after a minimum of three years of active duty.

An opportunity to secure a permanent commission in Air Corps, Regular Army.

A splendid opportunity to secure a remunerative position in commercial aviation, where graduates of the Air Corps Training Center are in demand, particularly so after they have gained more experience through serving several years of active duty with Air Corps tactical organizations.

An opportunity later to maintain affiliation with military aviation by joining the National Guard.

Notes from Air Corps Fields

Selfridge Field, Mich., May 2nd.

1st Sergeant Ralph Baumgardner, 27th Pursuit Squadron, was placed on the retired list April 30th, by order of the Secretary of War. Sergeant Baumgardner enlisted in the Army on June 28, 1905, and had served practically without interruption since that date.

Major Dana W. Morey, Finance Dept., was welcomed to the post April 27th as Finance Officer. He was formerly stationed at Fort Hayes, Ohio, and relieved Capt. Joseph F. Routhier, Finance Dept., who has been on temporary duty at this station for the past several months.

Scott Field, Belleville, Ill., May 4th.

Hon. Harry H. Woodring, Assistant Secretary of War, visited this field while enroute from Bolling Field to Neodesha, Kansas, by plane. On his return to Bolling Field, in company with Congressman Houston on April 29th, he stopped again at this field.

General Frank Parker, Commanding General of the 8th Corps Area, stopped at Scott Field on April 20th, while enroute to Chicago, and on April 23rd when he was returning to Texas.

Lieut.-Colonel Earle G. Harper, Assistant Commandant of the Air Corps Technical School, Chanute Field, Ill., visited the field on April 22nd.

Lieut.-Colonel Benj. A. Brackenberry, C.W.S. 6th Corps Area gas inspector, inspected the 15th Observation Squadron, Station Complement and the 21st Photo Section on April 28th for proficiency in chemical warfare defense. The results of the inspection disclosed a casualty of 2% for the three organizations. Casualties by organizations were: 15th Obs. Squadron, none; Station Complement, 2; 21st Photo Section, 1.

First Lieut. Kurt M. Landon, pilot, and Master Sergeant N.G. Loupos, photographer, both of the 21st Photo Section, and Sgt. Joseph McCullough, mechanic, of the 15th Observation Squadron, departed from Scott Field on May 2d to make aerial photographs of 100 square miles of territory in the vicinity of Rock Island, Ill., for the U.S. Army Engineers.

Post Field, Fort Sill, Okla., April 27th.

Post Field reports various marked changes of importance to all personnel here. Dust storms, synonymous with the Oklahoma spring, have been succeeded by most gratefully received rains. The station was washed clean of its choking dust cloak and has assumed the green glowing aspect of Spring and is altogether pleasant and livable again.

Personnel changes cause us to say with regret good-bye to Captain D.G. Stitt, who is to leave July 1st for station at Chanute Field. His post will be assumed by Captain F.D. Lynch, now commanding the 62nd Service Squadron at Brooks Field, Texas, who will be welcomed at this station on July 1st. We lose a valuable man in Staff Sgt. E.N. Dugay, who leaves for France Field, Panama, C.Z., in August.

Family ties are bound up further by enlist-

ment in the same organization. A check up of the roster of the 1st Balloon Squadron reveals six pairs of brothers, one pair of cousins and an uncle and nephew. This is unusual and along with the tenor of conduct and living leads us to believe there is a possibility that an organization may be "Just one big happy family."

Mitchel Field, N.Y., May 4th.

Master Sergeant Fred Carducci retired from active duty April 30, 1936, after more than 30 years' service. At the time of his retirement he was assigned to the 14th Photo Section, Air Corps, at Mitchel Field, N.Y., which had been his assignment for the past five years.

On the evening of April 29th, Master Sergeant Carducci was the guest of honor at a dinner given by the 8th and 14th Photo Sections under the guidance of Captains R.W. Gibson and P.T. Cullen at Valley Stream, N.Y., at which time he was presented with a gold watch. Other guests included Capt. Evers Abbey, Commanding Officer of the 14th Photo Section in 1922 and 1923; Capt. Russell Scott, long identified with the Photographic Department of the Air Corps Technical School, and Capt. James F. Olive, who was Commanding Officer of the 14th Photo Section during 1931 and 1934, inclusive. Lieut.-Col. W.H. Frank, Commanding Officer, Mitchel Field, expressed regret at his inability to attend, as did Major G.C. McDonald. Master Sgt. Carducci served under Major McDonald and Captain Abbey in Panama. He followed his profession, that of military photographer, with the Corps of Engineers and the Air Corps, from Cuba to the Philippines, serving also in the Canal Zone, Mexico and various stations in the United States. He plans to reside in the Republic of Panama for the next year or two. The best wishes of their friends at Mitchel Field go with Master Sergeant and Mrs. Carducci.

The Station Complement, Mitchel Field, greatly regretted the loss of Master Sgt. Patrick J. Hayes on March 27th. He had been Acting First Sergeant of the organization for only seven months, but he was thoroughly liked. He was transferred to the 40th Attack Squadron, Kelly Field, where he expects to remain until his retirement in 1938.

Capt. Shiras A. Blair (temp. Lieut.-Colonel) was appointed to the permanent rank of Major on April 1st. The officers and enlisted men of the Station Complement take this opportunity of heartily congratulating him.

April 20th was the red letter day in the history of the 1st Bombardment Squadron, HQ Air Force. On that day we moved from a half hangar to a full hangar and, as though that were not enough, our first Martin B-10 was delivered ready to fly. Interest is now divided between shining up our new home and hopping and investigating all the gadgets on our new airplane.

The delivery of the B-10 marks approximately the twenty-fifth type of airplane with which this Squadron has been equipped since its organization in 1913.

27th Division Aviation, N.Y. National Guard.

New York's National Guard Air Squadron welcomes this opportunity to exchange greetings and swap experiences with other Guard Squadrons throughout the nation. So here goes for a little barracks-room flying on our part.

You'll find us tucked away down at Miller Field, Staten Island, N.Y.C. The flying field is all ours, and that makes for plenty of uninterrupted application to our duties and pleasures as military flyers. Lots of room and opportunity for 6-ship formation landings and take-offs, for puff-target work, for panel and message pick-up; for simulated machine-gunning and bombing; for parachute-listing; for photographic experimentation; and for radio communication practice. We work pretty hard at all of these jobs, and many more, such as under-the-hood, radio-beam navigation; cross-countries; occasional emergency rescue missions; taking proper part in intra and inter-mural parties; and, lastly, pegging away at that tough old guy, moral, or team-play, or whatever it is that the Personnel Adjutant keeps mumbling about.

We all like the outfit quite a lot, and when a lad pulls out, for one reason or another, there's something out there at Miller Field that draws him back, again and again. Yes, already there is a sort of tradition attached to the outfit, though it's but 16 years of age. And to be truthful, it's going to be much harder to give expression to this tradition that is throwing its little ivy leaves around us than to simply state that it exists. But, here goes: First off, heading us up presently is a lad who helped organize the Squadron back in March, 1921 - Major Lawrence G. Brower. And that means that he's seen them all come and go down the years; seen and felt all our growing pains; also witnessed our coming to the age of puberty, when our voices grew stronger, and we climbed out of those beloved old Kiddy-cars, the Jennies, and into Falcons, and then O-38's. Yes, Larry Brower, we're sure, is a definite part of our tradition.

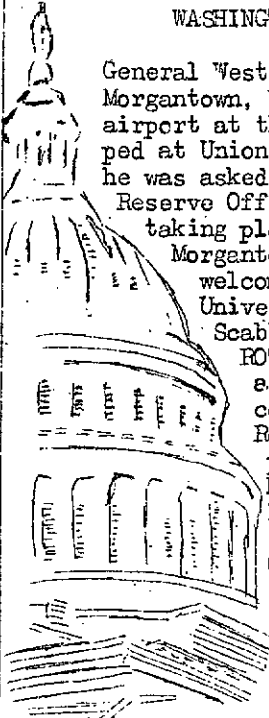
And then there's Colonel George A. Vaughn - America's second highest living War "Ace" - the second C.O. in our Squadron's history and now on the Division Staff. He's certainly woven in and out of our history like a bright scarlet thread.

Both of these men, along with Major Kenneth P. Littauer, our first C.O., are very much front and center in this matter of our tradition. And then, like the good clean snow, that fastens itself onto the moving snow-ball, we have all those fine lads who have flown with us and given something to the Squadron. You know, the usual sprinkling of captains and first lieutenants and a swarm of shave-tails, God bless them! Some of them moving in and out quickly, some holding fast for years, others already snugly bound into the snow-ball. The average length of service for officers has been six years, and five years for the enlisted men.

Now, there's very little in the way of the particular that we could recount for you about these lads that have flown and broken

(Continued on next column)

WASHINGTON OFFICE NOTES.



General Westover left on May 2nd for Morgantown, West Va., to inspect the airport at that place. En route he stopped at Uniontown, Pa., and while there he was asked to say a few words to the Reserve Officers' Association Convention taking place there at the time. At Morgantown, General Westover was welcomed by Dean Shortridge of the University of West Virginia, the Scabboard and Blade Chapter of the ROTC of that institution acting as guard of honor. Later, in company with Mayor Zabey, Col. Robinson, and several other prominent citizens of Morgantown, he visited the local airport and inspected the progress thereon. The General was very much impressed with the work being done and believes that the airport will prove a very suitable one for Morgantown.

At the University of West Virginia, General Westover met Colonel Devore, Major Baldwin and other Regular Army officers stationed there, and attended a banquet of the West Virginia Reserve Officers' Association, during the course of which he made an address on "Aviation and the National Defense."

Major Robert Kauch reported on May 1st for duty in the OCAC, and was assigned to the Training and War Plans Division, relieving Captain F.W. Holden.

On May 9th and 10th, respectively, Captains Lowell H. Smith and Alfred W. Marriner left for temporary duty at Wright Field, Ohio.

Major Robert L. Walsh left on April 30th for temporary duty at Randolph Field and other Air Corps stations.

Colonel Chalmers G. Hall left on May 5th for Lakehurst, N.J., to be present upon the arrival of the German airship HINDENBURG.

Recent visitors to the OCAC were Colonel J.W. Jones from Chanute Field and Major Charles H. Howard, from Langley Field, to attend a radio conference; Captain Elmer T. Rundquist, from Marshall Field, Ft. Riley, Kansas, during the course of an extended navigation flight, and Captain Clarence Wheeler, from Langley Field, Va.

Capt. Alvan C. Kincaid returned May 3rd from a navigation flight to Mitchel Field.

Major Carl W. Connell flew to Wright Field on May 8th.

Captain D.F. Stace, on duty in the Supply Division, is now on leave of absence.

bread together so long. And perhaps that's as it should be - just a few flashes of memory that light the recesses of the mind - the memory of P.T. Smith, who couldn't be driven into any ship, but that old PT-1....or the five lads we lost in crashes....and a certain unnamed hero who, to make clear to us the necessity of carrying out orders, said - "If they tell you to hang baskets of oranges on the propeller, do it!"....or the enlisted man who was given a chance to make a

parachute jump, who pulled the rip cord first and then forgot to jump. It's only snatches like these that our memory dishes up about this or that individual. And, as mentioned, they don't count an awful lot. What really does count, though, and what has given tone and color and lustre to our Squadron is the effort and work and sacrifice and experience that we've shared together - each member, whether present or past, leaving the imprint and quality of his personality and skill on the rest of us. And all of this has helped to make our tradition and given us something to cherish for the rest of our days.

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KEEPING FIT

Luke Field, T.H.

Winding up the season with the loss of only one game, the 4th Observation Squadron emerged the winner of the Klemp Trophy for the Luke Field Inter-Squadron Baseball League. Competition was keen and the enthusiasm evinced by both players and fans was very strong. Somewhat of a record was established by Private W.M. Woolwine, 4th Squadron, who pitched every game for his team.

Langley Field, Va.

Baseball has enjoyed a prominent place in sports at Langley Field. Inter-Squadron competition produces an excellent post team each season. The Langley Inter-Squadron Baseball League opened

its series on April 16th, with the 58th Service Squadron and the Station Complement providing the afternoon's action. The 58th held the honors at the end of the affray - 11 to 7.

SOFTBALL: a baby sport at Langley Field, is gaining in popularity among both the officers and the enlisted men. Almost any afternoon, groups may be found "battin' 'em around" all over the post. Reports have it that the spirit runs high around the Officers' Club, where it seems that the losers pay for the refreshments. An enlisted men's softball league is being organized, and the opening game will be played in the near future. A number of teams on the post are competing with nearby civilian teams.

Scott Field, Belleville, Ill.

On May 1st, the 15th Obs. Squadron won over the Station Complement in the opening game of the Inter-Squadron series. The 9th Airship Squadron won the post baseball titles and the loving cups in both volleyball and softball.

Kelly Field, Texas.

For the third time the 40th Attack Squadron has won the bowling championship of Kelly Field. During the league season, which lasted

for 28 weeks, this team never dropped below third place, but had keen competition for the championship, since the ACAFS Detachment had the Attackers one game down at the beginning of the last week of the season. The Attackers came through, however, in their usual style to win the championship. This team was composed of Wallace, Kelly, Timme, Thompson, McKinney, Crews and Kosicki.



Langley Field, Va.

The bowling alleys were closed for the summer on April 27th, thus putting a finish to a very successful season by the various independent teams on the post, and the Post Bowling team, which incidentally won the inter-post tournament held with Fort Monroe. The winner of this tourney was judged by the total pin-fall for five games, Langley toppling over 13,315 pins against 13,105 for Fort Monroe.

CHANGES OF STATION OF AIR CORPS OFFICERS

To Washington, D.C.: Colonel Roy C. Kirtland, Air Officer, 9th Corps Area, Presidio of San Francisco, Calif., to duty in Office of the Inspector General, War Department.

To Long Beach, Calif.: Captain Pardoe Martin for duty with Organized Reserves, 9th Corps Area, upon completion of course of instruction at Army Industrial College, Washington, D.C.

To Panama Canal Department: Major Vernon L. Burge from Mitchel Field, N.Y., about Sept. 1.

To Moffett Field, Calif.: Capt. Elmer J. Bowling, from Hawaii, for duty with 19th Airship Squadron.

To Mitchel Field, N.Y.: Major Homer B. Chandler, (Captain) commander, 7th Observation Squadron, Panama Canal Zone.

To March Field, Calif.: Major Lucas V. Beau, (Captain), commander, 50th Obs. Sqdn., Hawaii. - Capt. Frederick F. Christine, from Panama, to duty with Station Complement.

To Randolph Field, Texas, for duty at Air Corps Training Center: Major Arthur G. Liggett (Captain), commander, 23d Bomb. Sqdn., Hawaii. - Captain Harvey F. Dyer (1st Lt.), from Hawaiian Air Depot.

To Kelly Field, Texas: Major John C. Crosthwaite (1st Lt.) 6th Pursuit Squadron, Hawaii.

To Hamilton Field, Calif.: Captain Joseph J. Ladd (1st Lt.) Flight Comdr. 23d Bomb. Sqdn., Hawaii. - Captain Aubrey L. Moore (1st Lt.), Engineer Officer, 76th Service Sqdn., Hawaii.

To Scott Field, Ill.: 1st Lt. Mark E. Bradley, Jr., from Hawaii, for duty with 15th Obs. Sqdn.

To Fort Leavenworth, Kans.: 1st Lt. L.O. Ryan, from Hawaii, for duty with Air Corps Detachment.

To Chanute Field, Ill.: 1st Lt. Richard J. O'Keefe, From Panama Canal Department.

Note: Officers holding temporary increased rank are relieved therefrom effective upon date of departure for new station.



air
corps

NEWS
LETTER



Sgt. LINDQUIST, A.C., Conn.M.G.

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON.

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Information Division
Air Corps

June 1, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE POWER PLANT BRANCH AT WRIGHT FIELD

By a Test Engineer

On days when there are two or three engines running in the dynamometer laboratory and a like number giving their all at the torque stand, the Power Plant Branch can make the propeller test outfits sound like a silent movie.

The fifteen to twenty civilian engineers are augmented by such celebrities as Major Page, Captains Minty, Gillespie, Lieuts. Irvine, Johnson, Klein and Smith. Major Page has just started his second tour as skipper of the Plant. Lieut. Irvine is Service Liaison Officer and has his troubles. Captain Gillespie, the representative-at-large, is on the road most of the time spreading the gospel. Captain Minty and Lt. Johnson are "king bees" over the Engine Installation Unit and Accessory Test Laboratory.

The business end of the Power Plant begins with the necessary shops for the repair and inspection of engines. A most unique method of engine disassembly by acetylene torches and sledge hammers has been developed here. On a few occasions when engines on test have had a connecting rod failure, the usual method of disassembly has failed and more persuasive means had to be used.

The remainder of the building is occupied by the accessory and dynamometer laboratories. The accessory laboratory is equipped to calibrate and test fuel systems, oil pumps, hydraulic pumps, vacuum pumps, tubes and fittings.

There are two types of dynamometer stands, one for air-cooled engines and the other for liquid-cooled engines. They are essentially the same, in that the power generated by the engine is absorbed through a water brake and electric dynamometer, both of which are mounted in a pivoted cradle attached to a scale for measuring the torque load in order to determine the horsepower.

Two large fans on either end of the tunnel in the basement furnish an air blast equivalent to 150 miles an hour air speed as a cooling medium for air-cooled engines. Equipment is also at hand for running air-cooled engines with intake and exhaust conditions equivalent to any altitude up to 30,000 feet. One

stand is installed in a cold room, in which the room temperature can be lowered to -60°F. This room is primarily used for engine starting tests and research problems under extreme temperature conditions. The remainder of the dynamometer laboratory is occupied by an assortment of liquid-cooled and air-cooled single cylinder stands used for cylinder, spark plug, fuel and research tests.

The building with the five white towers on the southeast corner of the field houses the torque stands and forms a part of the Power Plant establishment. As stated in previous articles, the engines are calibrated on the dynamometer laboratory and are removed to the torque stands for endurance testing. Certain phases of propeller testing are also conducted at these stands. There are seven stands in all, two for liquid-cooled and five for air-cooled engines. All stands are equipped for fuel, oil, and temperature regulation measurement.

The fuel test laboratory, a building all by itself, is ruled over by Lieut. Frank Klein. In the summer when the temperature in the offices is above 100°F, Lieut. Klein's laboratory, with its air-conditioning system, becomes very popular for conferences. Four variable compression, single-cylinder engines and one Diesel single-cylinder engine form the nucleus of the equipment to determine how many knocks are in anti-knock gasoline. Lieut. Klein and his personnel are continually endeavoring to better the quality of the gasoline used by the Air Corps.

It is impossible to describe in a few words one of the busiest and most extensive activities at Wright Field. The officer personnel of the Power Plant Branch will be very glad to run a Cook's Tour at any time for all visiting firemen. Come and visit us.

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A flight, consisting of Lieut.-Colonel Ralph Royce, Major Alfred E. Kessler and Capt. Robert C. Oliver, in three new PB2-A airplanes, arrived at Selfridge Field on May 15th in 13 hours and 10 minutes of actual flying time from the Consolidated Aircraft plant at San Diego, Calif. The distance traveled is over 2100 miles.

AIR NAVIGATION BY INSTRUMENTS
By Colonel Junius W. Jones, Air Corps

SINCE the advent of airplane instruments and radios for navigation without outside visual reference, I have had many occasions to use this means to extricate myself from dangerous or uncomfortable situations. It was found that the information furnished on maps and the pilots' cross-country envelope was insufficient to enable one to select a new destination once he was in trouble.

As a result of these experiences and the ever increasing complications of the Department of Commerce radio facilities and airway traffic regulations, it was determined advisable to compile all available information of this nature into some accessible form that could be easily referred to in the cockpit. At first, only or principally the information furnished by the Department of Commerce was included in what I termed a "Radio Guide." As requirements demanded, other information, such as traffic regulations, beacon charts, barometric tables, etc., were included, which has completed a Guide that embodies sufficient data for instrument navigation in any part of the United States.

To determine the value and use of the Radio Guide, a questionnaire embodying ten items was submitted to 33 members of the flying personnel at Chanute Field, Ill., and the answers and comments obtained are to be used as a guide in revising and improving the present form. It is obvious, however, that many of those answering the questions did so without any practical experience in bad weather or night flying. The average amount of instrument flying, other than under a hood, per pilot, for the past year is approximately three hours. The average total pilot time is approximately 1,800 hours.

The ten questions above referred to are given below, as follows:

1. Does the Radio Guide contain sufficient information for instrument navigation in any section of the United States with radio aid?
2. Do you include a copy of the Radio Guide with your maps when making a navigation flight with a radio equipped plane?
3. Have you used the Guide in selecting a new course when unable to continue on to your destination on account of dangerous weather or when flying through zero weather?
4. Is the information contained in the guide found to be the latest and most accurate available?
5. Are you able to fly by instruments and refer to any desired information in the guide with comparative ease? a. Day; b. Night.
6. Is the Guide properly arranged and

sufficiently simple for the average pilot to use with but very little instruction?

7. Is there any other source of information in the form of maps, circulars, navigation cases, etc., now available in the service that could be substituted for the Guide?

8. Do you prepare the work sheet in advance?

9. Have you used the information contained in the Radio Guide to extricate yourself from a difficult or dangerous situation? If so, how many times?

10. Do you believe that the Radio Guide should be made standard for the Air Corps?

Answers received as a result of the questionnaire are tabulated below:

Question	1	Reporting		Not Reporting
		Yes	No.	
Question 1	1	27	0	6
" 2	2	24	7	2
" 3	3	4	27	2
" 4	4	27	4	2
" 5	5	10	19	4
" 6	6	26	3	4
" 7	7	4	18	11
" 8	8	24	3	6
" 9	9	4	27	2
" 10	10	24	0	9

Consensus of opinion on Question 10 was that such a Guide was essential in the Air Corps, but should be simplified to facilitate ease of handling and, if possible, reduced in size by including more information on smaller pages. Some few stated that they believed it should be adopted as standard, but should not be carried in the cockpit. Instead, it should be included in the map files of operations offices. Another states: "Yes, if revisions could be furnished from a central point. Believe the Radio Guide should be divided into appropriate sections for geographical areas and made standard for the Air Corps. Recommend that the Guide be so arranged that necessary information for any particular route could be extracted and used more conveniently in the cockpit. One officer states that the Radio Guide has its maximum value as a reference guide."

Statistics indicate that only a small percentage of those reporting have ever encountered a dangerous situation where the Radio Guide would have been of material help to them. And even though our records show that the average instrument time per pilot in other than a hooded cockpit to be three hours, it is believed the average over zero or very low ceilings would not be more than thirty minutes.

Based upon the results of the examination on the Radio Guide it was decided to include in the training program an instrument navigation problem with radio aid,

which problem is given hereinafter. Of the officers who have flown one of these problems to date, the results have been astoundingly unsatisfactory. The present plan is to continue this type of training with the ultimate aim being to bring the proficiency of each pilot up to the point that, when found in a dangerous situation, he will be able to extricate himself with comparative ease, or at least fly the airplane safely and intelligently select the proper alternative. This procedure will eliminate the danger of flying under very low ceilings or attempting landings in unsuitable fields which often result in disaster.

It is considered advisable to disregard the answers and comments of those pilots with but little experience and give more weight to those who have pioneered in this work. Even the answers to these questions, including the remarks, indicate that the average pilot is sadly lacking in the knowledge required for successful instrument navigation. It is estimated that at least fifty percent of the pilots at this station (Chanute Field) would prefer flying under dangerously low ceilings to flying by instruments at a higher altitude, which in my opinion is much safer. The examples that are quoted are to include emergencies only. It is not contemplated assigning or encouraging missions through weather over zero ceilings, but it is believed imperative for each pilot to have sufficient knowledge of this type of flying to recover from danger of this nature which he did not anticipate.

PROBLEMS IN INSTRUMENT NAVIGATION WITH RADIO AIDS

1. The following listed information is for the pilot taking the test. He will be assigned a problem in sufficient time prior to the take-off to enable him to study the course to be flown and make the proper preparation for the flight.
 - a. Radio and instrument equipment will be checked personally by the pilot taking the test prior to the take-off.
 - b. Barometric pressure will be obtained from the Post Operations Office by radio. The correction for this pressure will be applied to the altimeter and the setting of the index with the barometric pressure will be recorded on a small pad which will be found in the cockpit for that purpose.
 - c. Department of Commerce regulations pertaining to altitudes, distances from established airways, methods of reporting location, etc., will be strictly complied with.
- In order successfully to pass this test, the pilot must proceed to his destination.

with the least practical delay, complying with all existing air regulations enroute. Excessive wandering from the course, variation in altitude, or undue delay in orientation will be considered disqualifying.

e. A sufficient number of weather broadcasts will be picked up enroute to insure the proper corrections for changes in barometric pressure for compliance with air regulations governing altitudes.

f. The problems are so designed to afford the pilot an opportunity for exercising considerable judgment in selecting a new course and destination in the event of dangerous or questionable weather becoming prevalent at the original destination or enroute after the take-off.

The following problem is for the information of check pilot only; and will be transmitted by interphone to the pilot undergoing test at the proper time:

Chanute Field to Cleveland via Lafayette, Indiana.

After passing over Lafayette and having arrived at a point approximately five miles beyond, the pilot will be instructed by the check pilot that weather conditions at various stations are as follows: Cleveland - ceiling dropped from 1000 feet to 500 feet during the last hour, wind NE 25, visibility one-half mile, temperature 28, dew point 26, barometer 29.52 dropping. With similar conditions prevailing at Chicago and Indianapolis. Chanute Field - visibility zero, blowing snow. Terre Haute - ceiling 1000, wind NE 15, temperature 36, dew point 30, barometer 29.65. St. Louis - ceiling unlimited, clear, visibility ten miles.

The pilot will be expected to change his course to Terre Haute and in the event that he shouldn't will be so instructed by the check pilot. Shortly before arriving over Terre Haute he will be given the approximate existing barometric pressure and told that the ceiling is 500 feet. After dropping down to 500 feet over Terre Haute, he will then be instructed to return to Chanute Field.

When within five miles of Chanute Field, the radio will be turned to the interphone and pilot instructed that a weather broadcast will be transmitted from that station for a period of two minutes, after which time receiver will be again switched to radio. The pilot will be instructed to proceed to Chanute Field, dropping through an overcast to an altitude of approximately 500 feet over the field.

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Major Ernest Clark, Captain Earle E. Partridge and 1st Lieut. Charles H. Anderson departed May 18th for San Diego, Calif., to secure three PB2's from the Consolidated Aircraft factory and ferry them to their home station, Selfridge Field.

THE 8th Attack Squadron, Barksdale Field, La., was recently ordered to Fort Crockett, Texas, for a period of two weeks for the purpose of conducting aerial gunnery for rear seat gunners with a view to developing combat teams.

The personnel consisted of 16 pilots and 63 enlisted men. Part of the enlisted men were attached from the 60th Service Squadron, 3rd Group Headquarters and 3rd Wing Headquarters. As soon as the nine Group and Wing men had finished firing the course, they were replaced by nine other enlisted men and two officers. A week later, one officer and nine enlisted men from the 8th Squadron reported in. All personnel were quartered and messed on the field. "They must be able to take it, too," comments the News Letter Correspondent, "for in spite of the fact that the sea gulls could tell no difference between the airdrome and the Gulf of Mexico, no one was afflicted except for a few head colds and a lot of mosquitoes."

The mess was well handled and run without profit or loss. The customary growling was lacking, and there was always a rush in the direction of the mess tent around meal time.

Operations were considerably hampered by bad weather and a wet field. Fortunately, the Fort Crockett airdrome has a hard sand base, so that airplanes sink no further than the water level. It was necessary to remove the "pants" to facilitate landings and take-offs. All available time was used to good advantage. Once a ship was caught out and unable to return because of fog until the next morning, the night being spent at Houston.

Two 8-mile courses were used, both lying along the beach, and it required 4 gunnery planes and 4 towing planes to keep both courses in continuous operation. To complete the training, a total of 283:40 hours was flown, averaging 5:33 hours per gunner.

The results were gratifying. Of the 51 men who fired the course, 26 (51%) made "Expert," and 34 (67%) qualified. The total number of rounds fired was 60,244. It takes a lot of firing to wear out 8 gun barrels. The two greatest troubles experienced were caused by the breaking of sears and the breaking or binding of the front sights. Of the 44 malfunctions of armament which necessitated landings, 25 were caused by the sears breaking.

A lot of laughs were had at the story one man told about trying to get into position to shoot the different phases of the course. The man, who was 6'4" tall, gave up after his second run. In asking to be excused, he explained that there was too much of him and too little

of the cockpit.

A favorite form of diversion among the pilots was trap shooting from a hand trap. Someone had thoughtfully included a hand trap, several cases of clay pigeons, three cases of ammunition and four shot guns. The sea gulls, however, didn't enjoy it and soon learned to respect that part of the field.

The officers and ladies of Fort Crockett were most thoughtful and kind, inviting the pilots to a club function. Major and Mrs. Fields gave them a delightful dinner. Their hospitality made the stay of the 8th Squadron a very pleasant one.

All in all, it was a very good campaign

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MONTHLY CONFERENCE AT SAN ANTONIO DEPOT

The monthly Control Area Supply and Engineering Conference and Luncheon at the San Antonio Air Depot was held on May 5th and was attended by 14 officers of various Air Corps stations in that area and the officers of the Depot. Lieuts. (JG) R.D. Hogle and C.C. Howerton, USN, of the Naval Air Stations at Norfolk, Va., and Pensacola, Fla., respectively, then visiting the Depot on an extended air tour, also attended.

Major C.T. McAleer, Signal Corps, in charge of the Signal Corps Radio Section (aircraft radio) at the San Antonio Depot gave a talk at the conference on "The Analysis of Sound Reproduction in Voice Transmission," with special reference to radio, illustrating with charts and giving demonstrations with an Army radio receiving set, a cathode-ray oscilloscope, and various types of microphones.

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PROGRESS OF CONSTRUCTION AT BOLLING FIELD

With perfect weather conditions prevailing, and aided by the fact that rainfall during the month of April was below normal, the WPA project at the New Bolling Field, under the able direction of Mr. George G. Davies, Superintendent of Construction, has a new high during that month in the amount of actual work accomplished. At the present time, the project is 33% complete with 10% of the total work completed during April. Other figures for the past month are as follows: Total cubic yards of dirt moved, 70,000; pipe lines for storm drainage laid, 6,600 feet. To date, 187,000 cubic yards of dirt were moved and 23,000 feet of pipe lines laid. Concrete aprons are approximately 90% completed, and roads are 78% completed. The relief payroll for April was \$37,000. A 175,000-gallon reservoir for fire control is being rapidly completed.

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NEW BOMBERS FOR PANAMA

Recently from out of the setting sun came nine new Martin B-10B Bombers, and it was a thrilling and inspiring sight, their landing at France Field, marking the completion of one of the longest ferry flights in the history of the Air Corps. The flight from Langley Field to the Canal Zone was made via Brownsville, Texas; Mexico, and the Central American countries, and proved very successful, favorable flying weather being encountered almost all the way, and there was no serious motor trouble to cause any delays. The flight was slowed up slightly, however, because of the lack of rapid refueling facilities enroute from Brownsville. Many people from the Army, Navy and the Canal Zone were gathered at France Field to welcome the new equipment to Panama. Such a sight of modern Air Corps equipment has not been witnessed there for many years.

The flight of new planes was led by Col. Oldfield and his pilots from Langley Field. The visiting pilots were honored with a dinner and dance at France Field. They returned to their home station aboard the Army Transport "Chateau Thierry" after an apparently pleasant week's stay at France Field.

"These airplanes are very new," says the News Letter Correspondent, "having been flown direct from the Martin factory to Langley Field to be prepared for the trip to Panama. This type of aircraft has never been flown south of the United States, so it will be interesting to note how they will withstand the atmospheric conditions of the tropics, which are so different from those in the States."

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FORD TRANSPORT FLOWN TO COLOMBIA

One of the four tri-motored Ford Transports belonging to the Colombian Army recently arrived at Bolling Field, D.C., being piloted by Col. Benjamin Mendez, of the Colombian Air Corps. Col. Mendez, who was given flight training at the Primary Flying School at Brooks Field by Major Jack C. Hodgson, Air Corps, now Post Operations Officer at Bolling Field, flew the big ship in for the purpose of meeting the Minister of Colombia, Senor Don Miguel Lopez, and Senora de Lopez, and flying them to their home in Bogota, Colombia, for the summer. The party departed the following day on the first leg of the long trip, which will take them through Guatemala, San Salvador, Panama, Mexico and Central America. No definite schedule was arranged for the trip.

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STEAM GENERATOR FOR ENGINE STARTING

Results of tests at Wright Field, Dayton, O., of a model of a portable steam generator and steam-driven external energizer for engine starting have proved quite satisfactory, and the method seems entirely feasible. Procurement has been instituted for additional units for further test during the coming winter.

The weight of the steam generator will be in the neighborhood of 65 pounds. It will be of the "flash" type, capable of generating steam to the pressure required for starting (from a "cold" start) in less than one minute. Thereafter steam can be generated instantly as required for each start.

The water capacity is sufficient for approximately 20 starts without refilling. Automatic control of the gasoline furnace used as a source of heat is provided. The pressure required for operation of the energizer is approximately 80 pounds.

Two types of energizers are under test, one a 4-cylinder reciprocating type and the other a rotary vane type. The weight of the energizer will not exceed 28 pounds.

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ENGINEERING STUDENTS ON INSPECTION TRIP

Ten officers, students at the Air Corps Engineering School at Wright Field, Dayton, Ohio, left at eight o'clock on Monday morning, May 18th, for their annual factory inspection trip. The purpose of this inspection visit is to acquaint the officers of the School with the latest methods of production, and inspection of airplanes, aircraft engines and aircraft accessories.

According to the itinerary mapped out, the engineering students were to proceed first to the plant of the Curtiss Company at Buffalo, N.Y.; then to the Bausch & Lomb Company and the Eastman Kodak Company at Rochester, N.Y.; to the Wright Aeronautical Corporation at Paterson, N.J.; to the plant of the Glenn L. Martin Company, Baltimore, Md.; to Langley Field, Va., to attend the Annual Conference of the National Advisory Committee for Aeronautics; then to Bolling Field, Washington, D.C., returning to Wright Field on May 23rd.

Major F.M. Hopkins, Jr., Assistant Commandant of the Engineering School, accompanied the student officers on this flight and was in full charge.

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The 18th Composite Wing bugle band, now undergoing intensive training at Luke Field, T.H., under the direction of 2nd Lieut. Clarence W. Gilkes, 23rd Bombardment Squadron, is developing into a first class musical outfit.

THE year at Wright Field, Dayton, Ohio, has been marked by unusual activity in the development and procurement of training airplanes. Three new models, two of the basic type and one of the primary type, have been delivered and are undergoing acceptance tests. Quantity procurement on all three models is in effect.

Thirty BT-8's (basic trainers) are on order from the Seversky Company. This is a two-place, low-wing, all-metal monoplane, incorporating split flaps and fixed type landing gear. Of these, five have been delivered, two to the Materiel Division, Wright Field, and three to the Training Center at Randolph Field, Texas.

The first of 82 BT-9's (basic trainers) ordered from the North American

Aircraft Company was delivered at Wright Field on May 4th. This is a two-place, low-wing monoplane with metal wing, steel-tube fuselage, fabric-covered split type flaps, and fixed landing gear. Approximately half of this order is destined for the training of Air Corps Flying Cadets, the other half for Organized Reserve officers.

The first of 26 Primary training airplanes on order with the Stearman Company was delivered at Wright Field on April 25th. This Primary training model is a two-place biplane with steel tube fuselage, fabric-covered, hydraulic brakes, and fixed type landing gear.

Both basic trainers are equipped for instrument landing. The greater number of airplanes in these orders will eventually go to the Air Corps Training Center at Randolph Field.

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IMPROVEMENTS AT POPE FIELD

Improvements continue at Pope Field, Fort Bragg, N.C. Last spring was a busy one in this respect, but it is being eclipsed this year. Most of the old unsightly wooden buildings around the hangars have been removed, and these areas are being landscaped to the best of the abilities of regular enlisted personnel and officers. Approximately one thousand shrubs have been set out, 3,600 cuttings were set in a small nursery plot, and the areas immediately adjacent to the hangars were heavily seeded with bermuda grass. In addition, approximately fifty acres on the two flying fields are being disced, leveled, seeded with bermuda grass, and rolled. Also, the 84 pecan trees and 50 peach trees planted last year are being cultivated, fertilized, and maintained in the best of condition.

Both the officers and noncommissioned officers are taking great interest in gardens and grounds around their quarters. Many excellent gardeners are developing among them, and it has become commonplace for the Air Corps at Fort Bragg to receive compliments from the other branches and from civilians on the appearance of the Air Corps area.

All of the above has been accomplished, in addition to the regular aerial and ground training; cooperative work with the Field Artillery; servicing of approximately 210 transient airplanes per month; sending two airplanes to Fort Oglethorpe, Ga., for one week in March for tactical exercises; furnishing one airplane to Fort Barrancas, Fla., for two weeks in May; one month's field duty for Flight "C," 16th Observation Squadron at Fort Benning, Ga.; and passing creditable tactical and

technical inspections with the Field Artillery. Furthermore, the above accomplishments have been achieved entirely by the personnel of the Air Corps without the aid of civilian labor, the Quartermaster Corps, prisoners, or the Civilian Conservation Corps.

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CRISSY FIELD PERSONNEL IN PHOTO MISSIONS

Crissy Field, Presidio of San Francisco, Calif., was recently assigned two interesting photographic missions which will keep its Photographic Section occupied until the early part of the summer. Both are in the Puget Sound area in the State of Washington, and operations will be based at Fort Lewis, Wash.

One of these missions is cooperative with the 29th Engineers - a large mapping project in the northwest, covering ten 15-minute quadrangles and tying together several projects which have been completed in the past. This work will be done with a 5-lens T-3A camera, flown in the standard C-8 Photographic airplane at an altitude of 20,000 feet. It is contemplated that this will require approximately ten photographic days which, with the weather usually encountered in that area, may extend over a month or more. The laboratory work should entail about two months.

The other project embraces the laying out of a tactical map, 1:30,000, over an area adjacent to Fort Lewis, to an extent of 36,000 square miles. This will be taken with the same equipment, but flown at an altitude of 15,000 feet.

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The 20th Bomb. Sqn., Langley Field, Va., is making preparations for the training during two weeks in July of Reserve officers to be assigned to this organization.

ACTIVITIES OF THE MIDDLETOWN AIR DEPOT

For a little statistical data on the activities of the Middletown, Pa., Air Depot, the News Letter Correspondent says, in substance, "Let's look at the record." He goes on to say that during the month of April, with the help of three enlisted pilots, Private, AM 1st Cl. E.R. Camp, Privates AM 2d Cl. E.A. Joyce and V.V. Poupitch, with one each C-27, Bellanca airplane and B-6A Bomber, the Depot with its entourage of officers, civilians, enlisted personnel and what not, has succeeded in hauling a total of 85,503 lbs. of freight over a total distance of 11,260 air miles. Of this total weight, 52,770 lbs. of freight were delivered to Air Corps fields in this district and 32,733 lbs. were returned from these fields.

To quote a few more figures, he says, the Engineering Department came thru with a total of 14 major overhauls, which included two Bombers, eleven Observation and one Pursuit airplanes. Minor repairs were accomplished on 15 airplanes. The Engine Repair Section of this Department made, in addition to numerous minor repairs, a total of 40 major overhauls. The Radio Repair Section says they have two men and enough work for six, so to be sociable they compromised and did the work of four.

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M.A.D. EMERGES FROM HAVOC WROUGHT BY FLOOD WATERS

The Operations Department of the Middletown, Pa., Air Depot recently moved into what was formerly the Disassembly Hangar. After laying linoleum, painting, varnishing and polishing, they stood back to admire their work, when, lo and behold! a flood walked in the door! So the laying of linoleum, painting, varnishing and what not has progressed beyond fond expectations. However, evidence of the damage caused by the recent flood is rapidly disappearing, due to the efforts of a special group of men hired for the purpose. As everybody knows, when a flood goes a visiting, it has no favorites, so the new machinery recently installed in the future Air Corps Shop became a victim, and, says the News Letter Correspondent, "we hereby go on record as stating that this machinery, together with the various equipment, have been dismantled, cleaned, oiled and put back in its original condition, and more equipment is arriving at frequent intervals to be installed as rapidly as possible. The old Operations Hangar is being converted into a temporary Dope Shop, and it is hoped that in the near future the Engineering Section can move into their fine new building. The Dismantling Section is already in operation in its

new location, as well as the Test Flight Section. When the entire Engineering Unit gets oriented in their new quarters, watch the production."

The sport of fishing, boating and bathing on the flying field has drawn to a close, and the work of removing houses, horses, cows, stumps, etc., has also ceased. The airplanes, graders and tractors have full control of the field once again. The night lighting equipment went hay wire, but it is back in normal operation again, and it seems that all that remains of the recent flood is the memory plus a few sore muscles.

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MARCH FIELD TAKES ISSUE WITH MITCHEL FIELD

Referring to an item which appeared in the issue of the News Letter of May 1st, to the effect that Air Corps officers comprising the navigation class in the 9th Bombardment Group, Mitchel Field, N.Y., contemplated making a graduation flight to Miami, Fla., involving an over-water "hop" of 407 miles, the March Field Correspondent says:

"Little publicity has been given to the over-the-water accomplishments of the 19th Bombardment Group, stationed since October, 1935, at March Field. But its work easily outshines that mentioned in the article referred to.

"Just as an everyday mission, several officers of the 19th, with the Group Commander, Lieut.-Col. Howard C. Davidson, in charge, boarded the giant Douglas amphibian based at that station for a round-about flight southward over the Pacific Ocean, involving a total of over 800 land miles over water and a total flight of over 950 land miles. The mission took off from March Field at nine ten the morning of May 12th and landed at four fifteen.

"Another accomplishment mentioned by the Mitchel Field Correspondent was the reported first time any Air Corps officer group ever studied at a planetarium. Let it be known that classes at the Griffith Park planetarium in Los Angeles began for the 19th Bombardment Group officers over three months ago, in February, 1936."

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MODEL OF KELLY FIELD AT TEXAS CENTENNIAL

A model of Kelly Field, approximately 5 ft. by 4 ft., including buildings, water tower, hangars, roads, runways and airplanes, will be on display at the Texas Centennial Exposition in Dallas. This model was constructed by students of St. Henry's Academy in San Antonio from photographs furnished by the 22nd Photo Section of Kelly Field. From the interest displayed in a photographic reproduction of this model in one of the local newspapers, it is expected that this model of Kelly Field will be one of the interesting exhibits at the Exposition.

GUNNERY FOR BROOKS FIELD PERSONNEL

The 12th Observation Squadron, Brooks Field, Texas, recently moved to the National Guard Camp at Palacios, Texas, to conduct aerial gunnery exercises, and was to be followed by the 22nd Observation Squadron. This is the first gunnery exercise for the 12th Observation Group since April, 1933, and the first firing with the O-43 type airplane.

Captain John C. Kennedy is acting commander of the 12th Squadron, and Major B.F. Griffin is in command of the 22nd.

A Transport plane was loaned to Brooks Field for the duration of this camp for a daily trip to keep the camp supplied with perishable goods and necessary supplies. Due to the soft condition of the field following every rain, operations were delayed considerably. Communications are by radio, conducted on hourly schedules.

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ASST. SECRETARY OF WAR FLIES TO AKRON

On Saturday, May 16th, the Assistant Secretary of War, Hon. Harry H. Woodring, accompanied by members of his staff and Captains W.L. Ritchie and H.R. Baxter, Air Corps, departed from Bolling Field in a Douglas C-34 Transport for Akron, Ohio, where Mr. Woodring delivered an address on National Defense before members of the Reserve Officers' Association. The return trip to Bolling Field was made on the following day.

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BOLLING FIELD HUMS WITH ACTIVITY

Flying operations from Bolling Field, D.C., were unusually heavy during the past month, with every available plane assigned as frequently as possible. With the advent of favorable night flying weather, the two nights designated each week for night missions find a high percentage of Bolling Field planes on the line. With the exception of two semi-tropical thunder storms, flying conditions were excellent during the entire month.

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QUICK WORK SAVES BOSTON AIRPORT PLANE

Boston Airport was for a time deprived of one of its service type airplanes. The plane had just been ferried from the Middletown Air Depot, after overhaul, by Captain Richards and had not been flown out of the Boston Airport, when one Reserve officer taxied out from the line preparatory to taking a night flight. As he faced the control tower with the landing lights on waiting for the signal to take off, the lower left wing burst into flames. He immediately cut the throttle and switch

and the passenger, Private Lacoco, jumped from the rear cockpit with a fire extinguisher. At the same instant, the members of the emergency crew were there with the fire truck and were playing streams of foamite on the wing. With a rapidity almost astounding, the fire was extinguished, but with the loss of the lower wing. A new wing has been installed and the plane is again available for use.

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ELIMINATING THE MOSQUITO PEST

Langley Field, Va., the home of the G.H.Q. Air Force Headquarters, in the land of big mosquitoes, is rapidly becoming devoid of these pests through the efforts of Major Brooke, Flight Surgeon, and Captain Wolfenbarger of the 37th Attack Squadron. The immediate vicinity of the field is being sprayed with a mixture of three parts used oil and one part kerosene. Observation of stagnant water in old bomb craters and other low places show a well spread oil film which is fast eliminating the insect clouds formerly a common sight on the peninsula. As there are droplets of oil on most of the ground in low areas, it is expected that fresh pools will immediately be covered by the oil film.

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RAPID PROGRESS ON LUKE FIELD LANDING MAT

Work on the landing mat at Luke Field is progressing rapidly and, according to the latest reports, the mat will be completed and ready for use prior to the first of September, 1936. The mat is 3,000 feet by 400 feet, enabling a flight of three ships to take off with ease. The field was first surveyed and marked out, then the work of grading and filling in holes began. After this was completed, a six-inch base of crushed rock was spread and rolled. The final work to be done, which is oiling and spreading a fine layer of stone, will take around three or four weeks to complete.

The mat has long been needed at Luke Field, as landings and take-offs from the lava-formed island has caused many a pilot a few gray hairs, due to the ever present possibility of a ground loop caused by the landing gear giving way from hitting the rough terrain.

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The Fourth Observation Squadron, Luke Field, T.H., has finally lost the old reliable o-19's and, with the assignment of three B-12's to the Squadron, all personnel are busily engaged in reading new Technical Orders in order to acquaint themselves with the new equipment. The opportunity to work with new airplanes has promoted intense activity and interest in the work of every individual in the Squadron.

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Lt.-Col. Wm. C. McChord and Major Clinton W. Howard were promoted to Colonel and Lieut. Colonel, respectively, effective May 1, 1936.

V-7029, A.C.

QUESTIONS AND ANSWERS

Q: What specific missions are visualized for the employment of Bombardment Aviation in a major war?

A: In a major war the enemy will attack us with aviation. The destruction of the base facilities of enemy aviation will, therefore, be a primary mission of our own Bombardment airplanes. For us to have a major war on this continent would mean that our enemy was bringing troops overseas to launch against us. The attack of enemy troop transports prior to and during landing operations will be a primary mission of Bombardment.

The maintenance of an overseas line of communications will be an essential requirement for the waging of a land campaign against us on this continent. The destruction of the naval strength of the enemy available for this purpose will, therefore, be a mission for Bombardment airplanes during such times as the enemy's naval vessels are within economical range of the air bases from which our Bombardment is operating for the accomplishment of the first two missions stated above.

After the enemy's forces are ashore, the destruction of their lines of supply will be a primary mission of Bombardment. The sinking of transports and tankers within economical range, which are carrying supplies for the enemy, the blowing up of docks, warehouses and tanks containing such supplies, and the destruction of important railroad and highway bridges will constitute material contributions to the accomplishment of this mission.

Because of the tremendous psychological effect of such operations, the attack of enemy airplane, ammunition and chemical factories will be a mission of Bombardment. If the conditions are favorable and the airplanes are available, the attack of other munitions factories may be undertaken.

All the above missions, while offensive in nature, would be undertaken for the purpose of enabling the defense of our territory to be successful.

Q: Are extremely long range Bombardment airplanes of great weight-carrying power needed to perform the missions intended for this class of airplanes?

A: By analyzing the missions selected above for Bombardment, it will be found that many of the targets proposed for this class of aviation are reasonably certain to be found within one thousand miles of bases available for the operation of Bombardment airplanes. An enemy force brought overseas for the purpose of invading our territory would either attempt a landing on our own coast or fairly close to our land frontiers. On the other hand, enemy air bases and mu-

nitions factories may be at considerable distances from our air bases.

It is probable, then, that we shall be able to reach many objectives with Bombardment planes having from one thousand to two thousand miles range, but that for other objectives a range up to five or six thousand miles may be desirable.

As to weight-carrying ability, so long as a Bombardment airplane can carry a bomb of a size capable of destroying the physical target against which the attack is directed, it is capable of performing the mission. It is believed the carrying of a 2,000-pound bomb will fulfill this requirement. It is probable that considerations of vulnerability of the airplane may dictate the greatest possible use of relatively small Bombing planes, just large enough to carry the bomb and gas load required. But to widen the field of employment and secure the greatest effectiveness for this class, there will also be required a number of very long-range Bombers of great weight-carrying capacity. On long-range missions the time consumed, the flying hazards to be overcome, the navigational difficulties to be solved and the attack menaces to be surmounted will make it desirable to carry as large a bomb load as possible. It would appear from the foregoing considerations that a well balanced Bombardment force would comprise a preponderant percentage of Bombers having from one thousand to two thousand miles range, carrying a 2,000-pound bomb; that a smaller percentage would be larger Bombers, ranging in capacity to the very heaviest type which can be successfully designed, built and flown.

Q: What is meant by "economical range" when speaking of combat missions for Bombardment?

A: This term as usually employed, that is in connection with the assignment of Bombardment combat missions, means to select from among a group of targets, approximately equally remunerative, those targets lying closest to the operating base of the Bombardment concerned. It means, further, to seek to discover remunerative targets for bombardment within relatively short ranges rather than to select the targets which are readily presented at considerably greater ranges.

The above course of action is predicated upon the fact that the longer the range involved in the execution of a Bombardment mission, the greater are the following five factors:

- a. Time consumed in executing the mission.
- b. Amount of exposure to hostile attack.
- c. Amount of exposure to mechanical failure.
- d. Expenditure of fuel and life of the aircraft.

e. Expenditure of energy of the personnel.

From a still broader viewpoint, the shorter ranges are more economical in that to accomplish missions at short ranges requires a much smaller, and consequently much less expensive, Bombardment airplane to carry a single bomb of the maximum size, than would be required to carry the same bomb over a considerably greater distance. This is

due to the fact that in any high speed Bombardment airplane, the weight of the gasoline and oil consumed per 500 miles - for example - bears a relatively high ratio to the weight of a 2,000-lb. bomb which at present is the maximum weight considered necessary for the material destruction of the targets against which it is contemplated to launch Bombardment aircraft.

AWARDS PRESENTED TO CAPTAIN STEVENS AND LIEUT. HARMAN

SPRING showers halted long enough at Wright Field, Dayton, O., on May 12th to permit the ceremony prepared for the presentation of the Oak Leaf Cluster to the Distinguished Flying Cross to Captain Albert W. Stevens, and the Soldier's Medal to Lieut. L.F. Harman, to take place out-of-doors as planned. The lawn southwest of the Administration Building was the scene of the occasion, and looked its best enlivened by the interest of many spectators who had come to look on and offer congratulations.

Captain Stevens received his award for the successful consummation of the Stratosphere Flight which, besides adding valuable data in the field of science, achieved the world's altitude record. Lieut. Harman was awarded the Soldier's Medal for valiant rescue work

performed at the risk of his life upon the occasion of the crash of the Boeing Bomber last October; in which Major E.P. Hill and Mr. Leslie Tower, Boeing pilot, lost their lives.

Major-General William E. Cole, Commanding General of the Fifth Corps Area, and Staff, came from Columbus, Ohio, to make the presentations, and Captain A.W. Brock, Adjutant, read the citations.

Captain Stevens was further honored that night by the presentation of a very beautiful bronze plaque at a dinner given by the aeronautical committee of the Dayton Chamber of Commerce. A duplicate of the plaque was presented to Captain Orvil A. Anderson, and accepted for him by Brigadier-General A.W. Robins, Chief of the Materiel Division, since Captain Anderson could not be present. Captain Anderson was pilot of the big balloon on the trip into the stratosphere.

SPEED - PLUS

By the Langley Field Correspondent

Communication between ground and air units is daily becoming more and more important to the Air Corps. Too often, ignorance of the communications facilities at hand holds up certain phases of our daily work, resulting in useless delay, rased nerves, irritated superiors and a sense of inadequacy among "those who carry out the orders." SPEED is an essential factor these days. Consider that every day faster planes are being built. Consider that communications - ground, air and ground, air and air - are being perfected and speeded up, allowing much faster coordination. The days of the Pony Express are gone these many years - may they rest in peace - but in many instances personnel are still working under the mental handicap of "those good old days."

Today the human factor needs a more thorough tuning and speeding up than much of the complicated machinery of this age. Headwork - a step beyond just plain common sense - good headwork, will provide a means to the end. For instance:

A few days ago, Post Headquarters, Langley Field, Va., required certain information relative to the immediate

transfer of an enlisted pilot of the Station Complement to another station. It was essential that the information be secured as soon as possible to be incorporated in orders then being compiled. Pvt. Joe E. Barton, the individual in question, was at that particular moment piloting a B-10 on a bombing mission at an altitude of some 7,000 feet and an indeterminate number of miles away from Langley Field and was not expected to return to the air-drome until quite some time later. A hurried telephone call from the organization's first sergeant to the Operations Officer, who immediately contacted Private Barton by radio and secured the required information, enabled Post Headquarters to proceed with the compilation of orders.

From the time that Post Headquarters telephoned the organization first sergeant until the moment that Post Headquarters had the desired information, less than five minutes had elapsed! Radio and telephone, the modern miracle workers, had made this possible. But - and there is a moral somewhere in this - the human equation was no less to be complimented than the mechanical factors concerned in this accomplishment. It was split-second

(Continued on page 11).

NEW AIRPLANES FOR MARCH FIELD

Six new and swift airplanes will be added to the complement of the 19th Bombardment Group at March Field, Calif., in August, according to a recent announcement of Brigadier-General Henry B. Claggett, commanding the First Wing of the General Headquarters Air Force.

First of the planes scheduled for delivery during the "dog days" will be five Martin B-10B Bombers. These will reinforce the 19th Bombardment Group to a strength of 14 Martins. With the exception of minor improvements, the new planes are much the same as the present nine in service at March Field.

The other plane expected in August is one of the DC-34 Douglas Transports ordered by the Army. It will be slightly larger than the flagship of the GHQ Air Force, based at Langley Field, Va., and now in California on official business. Designed principally to haul freight, it will have a track running down its center to facilitate handling material. Seats may be placed in it, however, to carry airplane crews and administrative personnel to distant points.

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91ST OBSERVATION SQUADRON IN MANEUVERS

The 91st Observation Squadron, with the 15th Photo Section attached, stationed at Crissy Field, Calif., recently completed field maneuvers with the Sixth Brigade. For seventeen days, April 12th to 29th, inclusive, the organization lived in their camp at the Watsonville Airport, about 100 miles south of San Francisco, and a few minutes' flight from the Infantry, Cavalry and Artillery camps.

Daily missions of various types were carried out - liaison, reconnaissance (day and night), aerial photography, communications (visual and radio), formation, and aerial gunnery.

A dual purpose was accomplished in the maneuvers - the field exercises and the quarterly test of airplanes with full military equipment.

Credit must be given the Squadron Supply Sergeant for saving many shins and much discomfort by the ingenious idea of painting the tent pegs white.

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BACHELORS THINNING OUT AT CRISSY FIELD

Cupid has been doing a land office business at Crissy Field, Calif. Since the first of the year there were no less than six weddings in a command of 150 men. The newlyweds are 1st Lieut. Austin A. Straubel, Air Corps; 2nd Lts. Homer B. Bernard, John B. Preston and David R. Nelson, Air Reserve; Staff Sgt. H. E. Etheridge and Pvt. John B. Steele, Air Corps.

FIRST PURSUIT GROUP IN THE FIELD

The First Pursuit Group, Selfridge Field, Mich., is at this writing based in the area Midland - Bay City - Saginaw and Camp Skeel, Oscoda, Mich., for a two-weeks' period of Group maneuvers. The 56th Service Squadron, with 4 officers and 100 enlisted men, departed by motor convoy at 6:00 a.m., May 19th, for Camp Skeel, to establish a gunnery camp. The 57th Service Squadron, with 7 officers and 150 enlisted men, was scheduled to depart at 6:00 a.m., May 21st, by motor convoy, to establish camps at Midland, Saginaw and Bay City, Mich. Headquarters Flight, and the 17th, 27th and 94th Pursuit Squadrons, with 52 airplanes, 77 officers and 177 enlisted men, were to depart for the training area on May 22nd. Group Headquarters was to be established at Bay City. The Group plans to return to the home station on June 6th.

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LIEUT. PARKS DIES IN AIRPLANE CRASH

Second Lieut. James T. Parks, Air Reserve, was killed instantly when the Pursuit airplane which he was piloting from Selfridge Field, Mich., crashed from an altitude of about 100 feet near Peck, Mich., on May 10th. Lieut. Parks was on inactive status and had been assigned to Selfridge Field for inactive flying training since 1932. He was a ballistics expert of the Detroit Police Department. At the time of the accident he was apparently trying to find a place to land, but when at about 150 feet altitude the plane nosed over and crashed. He is survived by his wife, Marguerite, and daughter, Marjorie.

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SPEED - PLUS

(Continued from Page 10).

thinking - and no mechanical gadget has yet been devised to compare with the complicated, yet simple, mechanism of the human mind - and taut nerves relaxed, superiors smiled and nodded approval, and a glow of honest accomplishment suffused the beings of "those who carry out the orders."

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NARROW ESCAPE FOR LIEUT. CHENNAULT

Recently, while engaged in aerial gunnery practice at Barksdale Field, La., the .50 calibre gun in the plane piloted by 2nd Lieut. John S. Chennault, of Selfridge Field, exploded, apparently due to a weak barrel locking spring. Blinded by fumes, Lieut. Chennault almost flew into a wooded area, but he recovered and made a safe landing in the field. Parts of the gun fell in the cockpit, and a portion of the fuselage was torn from the airplane.

Hamilton Field Section

THE SEVENTH BOMBARDMENT GROUP

The 7th Bombardment Group, now stationed at Hamilton Field, San Rafael, Calif., was organized as a complete unit at March Field, Calif., in October of 1931. The Group remained at March Field until December, 1934, when it was transferred to the newly completed Hamilton Field, under the command of Lieut.-Colonel C.L. Tinker.

The period of sixteen months which has elapsed since the arrival of the Group at Hamilton Field has been one of experimentation in Group and Squadron organization, also one of hard work, but probably the most beneficial in the 7th Group's history.

In January, 1935, two B-12 airplanes, piloted by Capt. A.G. Hamilton and Lt. B. Walsh, Air Corps, were ordered to Dayton, thence to join the Cold Weather Test Flight under the command of Lieut. Colonel Ralph Royce. Capt. Hamilton received commendation for his excellent work in connection with this flight.

In April, 1935, bomb sights and machine gun mounts for the B-10 airplanes arrived, and training in gunnery and bombing was conducted for the first time at Hamilton Field.

The only available place in the vicinity of Hamilton Field for a gunnery range is along the coast line. Due to the prevalence of coastal fogs, this area can be used only a small percentage of the flying days. Despite this condition and the fact that the Group or separate squadrons have conducted or participated in numerous maneuvers and field exercises, squadrons have taken every available opportunity to complete firing requirements, and all squadrons will complete their TR 440-40 gunnery training before the end of this training year.

Training in aerial bombing has progressed quite rapidly and has been relatively satisfactory. All members of the 7th Bombardment Group have completed bombing under the requirements of TR 440-40 and qualified as expert bombardiers. They are now conducting bombing as required by the new "tentative" TR 440-40. It is anticipated that, due to the more rigid requirements of the new regulations, the number of bombardiers qualifying will be materially reduced.

In addition to the regular training required in aerial bombing, this Group has conducted considerable bombing at altitudes from 15,000 to 20,000 feet, and one mission at 23,000 feet. The

results of this high altitude bombing, while not unsatisfactory, are not as good as can be expected when more training has been accomplished and all instruments and bomb sights properly calibrated. It is believed that the greatest errors in high altitude bombing occur due to the pilot's inability, when near the service ceiling of the airplane, to fly the airplane as accurately as is required. Accuracy is improving as pilots gain more experience in this work. Bombing at high altitudes is made more difficult by the use of oxygen and the freezing of instruments. It has caused each pilot and bombardier to realize that accurate aerial bombing has as its first prerequisite carefully and accurately calibrated flight instruments and a pilot who can fly the airplane accurately with instruments alone. When the GHQ Air Force was formed, a complete reorganization was effected to comply with the test tables of organization. At this time the 69th Service Squadron was organized and attached to the 7th Bombardment Group.

In August, 1935, special training was started by the 11th Bombardment Squadron for a demonstration of formation and bombing to be held at Fort Leavenworth, Kansas, in October. Three B-12 airplanes, under the command of Captain John G. Moore, were sent to Fort Leavenworth to participate in the demonstration.

This Group participated in numerous maneuvers and concentrations during the past year. Group and First Wing concentrations have been held in the Los Angeles area, San Diego, March Field, San Joaquin Valley, Mojave Desert, Salt Lake and Denver areas, and at Hamilton Field. During these concentrations, all pilots have become familiar with the majority of landing fields in the western part of the United States, servicing facilities at these fields and the problem of maintaining airplanes and equipment under varying and different conditions.

Each tactical Squadron of the Group has had one field exercise of at least a week's duration, operating independently. The 11th Squadron operated from Coalinga, Calif., during the latter part of June, in weather so hot that all maintenance had to be completed prior to 7:00 a.m., as after that hour the metal of the tools, engines and airplanes came so hot as to burn the mechanics' hands.

The 31st Squadron operated from Medford, Oregon, without undue difficulties. The people of Medford made their stay a pleasant one through their cooperation in procuring badminton courts, skeet ranges and other recreational facilities for the use of the personnel of the Squadron.

The 9th Squadron spent their week of exercises at Visalia, Calif., and encountered much the same difficulties as those of the 11th Squadron at Coalinga.

The 88th Observation Squadron was transferred from Brooks Field, Texas, to Hamilton Field and attached to the 7th Bombardment Group in October, 1935. It is essentially a long range Observation Squadron and has participated in 1st Wing Maneuvers and Concentrations since the organization of the GHQ Air Force. Since its arrival at Hamilton Field it has received better airplanes and has conducted extensive training in air navigation and other phases of long range observation.

The 7th Provisional Bombardment Group, consisting of available airplanes and personnel of the 7th and 19th Bombardment Groups, participated in the GHQ Maneuvers in Florida in December. The outstanding accomplishment of this maneuver was the rapidity with which the airplanes concentrated at great distances with the necessary equipment for immediate operation. This was especially shown when the 7th Bombardment Group flew from March Field, Calif., to Vero Beach, Fla., a distance of 2300 miles, in an elapsed time of 21:15 hours.

As rapidly as pilots are qualified in instrument flying in the BT type airplane, advanced training in aerial navigation by instruments is being accomplished. During these navigation problems, the front part of the pilot's cockpit enclosure is covered with tape or paint. Excellent results and valuable training in both aerial navigation and instrument flying are being obtained.

A number of the B-12 airplanes from this station are being shipped to the Hawaiian Department, and have been replaced with B-10B airplanes. The tactical squadrons are now occupied in calibrating instruments, installing oxygen equipment, bomb sights and machine gun mounts in preparation for continuation of training in bombing and gunnery.

Due to the limited recreational facilities at this station, the problem of athletics and other means of relaxation is acute. The officers and cadets have partially solved the problem by challenge matches between organizations in skeet shooting, badminton and soft ball whenever possible. The enlisted personnel are developing great interest in badminton, and combat crew personnel are taking an active interest in skeet shooting. The need for a gymnasium and theatre is very urgent.

The Group organization, as it now exists, is composed of the following:

Commanding Officer, 7th Bombardment Group
Lieut.-Col. C.L. Tinker

Staff:

S-1 - Lieut. E.W. Suarez
S-2 - Major K.N. Walker
S-3 - Major K.N. Walker
S-4 - Captain E.T. Noyes

Armament:

Captain C.G. Williamson
Captain M. L. Harding

Communication:

Captain R.H. Lynn

9th Bombardment Squadron:

C.O. - Major J. M. Davies
8 Regular officers
5 Reserve officers
2 Flying Cadets

11th Bombardment Squadron:

C.O. - Major C.H. Ridenour
7 Regular officers
4 Reserve officers
2 Flying Cadets

31st Bombardment Squadron:

C.O. - Major H.D. Smith
6 Regular officers
5 Reserve officers
1 Flying Cadet

88th Observation Squadron:

C.O. - Major C.E. Giffin
5 Regular Officers
7 Reserve Officers

69th Service Squadron:

C.O. - Major J.W. Sary
6 Regular Officers

70th Service Squadron

C.O. - Major D.M. Myers
6 Regular Officers

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ORGANIZATION OF TECHNICAL DIVISION FOR MAINTENANCE OF 7TH BOMBARDMENT GROUP

1. This system of maintenance has been in operation since October 1, 1935, by the 7th Bombardment Group, Hamilton Field, and is organized to function as outlined below:

a. All maintenance personnel for airplanes and allied equipment are relieved from duty with combat squadrons, ser-

vice squadrons, and Station Complement and placed on special duty with an organization known as the Technical Division.

b. The Technical Division operates under a Technical Executive and is organized with the following branches:

- (1) Maintenance Engineering
- (2) Base Engineering

- (3) Armament
- (4) Communication
- (5) Supply

2. The responsibility and organization of the above mentioned branches are as indicated below:

a. The Maintenance Engineering Branch is responsible for 1st and 2nd Echelon maintenance of airplanes and auxiliary equipment, less maintenance of armament and communication equipment and servicing of airplanes with ammunition, bombs and pyrotechnics. It is organized into two sections, the Flight Section and the Preventive Inspection and Unit Change Section, as follows:

(1) The Flight Section is responsible for the servicing; daily and pre-flight inspections of all airplanes and engines, including adjustments and replacement of small parts. Enlisted personnel to be assigned to the flight section consists of the following:

- (a) One line chief.
- (b) Flight chief and assistant flight chiefs for each combat squadron.
- (c) Crew chief and assistant crew chief for each airplane. (Note: Single engine airplanes should not need an assistant crew chief.)

(2) The Preventive Inspection and Unit Change Section is responsible for the 2nd Echelon maintenance of airplanes and engines, including preventive inspections and changes of major units and assemblies, less Technical Order Compliance Changes. Enlisted personnel of the Preventive Inspection and Unit Change Section is organized into crews, consisting of one noncommissioned officer and six (6) other enlisted men. (Note: The crew chief and assistant crew chief accompany the airplane whenever Preventive inspection or Unit Changes are made and assist crews detailed therefor). For field service, crews are augmented from the Base Engineering Branch at the rate of one welder, one sheet metal worker, one dope and fabric man, and one wood worker for each combat squadron.

b. The Base Engineering Branch is responsible for all Technical Order Compliance Changes, 3rd Echelon maintenance, maintenance of flying field, visiting airplanes and crash boats. It is organized and divided into five sections: The Aero Repair Section, the Shop Section, the Flying Field Maintenance Section, the Airway Section, a Rescue and Crash Boat Section, as follows:

(1) The Aero Repair Section is responsible for Technical Order Compliance Changes, which are not made at depots; maintenance and repair of airplanes and installation of units beyond the facilities of the Preventive Inspection and Unit Change Section; salvaging and re-

clamation of airplanes incapable of flight.

(2) The Shop Section is responsible for the repair of equipment and supplies at the base, manufacture of tools and supplies not procurable through supply channels and inspections, maintenance and repair of parachutes and flying clothing. This section also furnishes mechanics to augment Preventive Inspection and Unit Change crews for field service as outlined in paragraph 2a. above.

(3) The Airway Section is responsible for the servicing, inspection and maintenance and repair of all transient airplanes.

c. The Armament Branch is responsible for the installation, inspection, maintenance, and repair of Armament Equipment at the base and in the field, loading and fuzing of bombs and servicing of airplanes with ammunition, bombs and pyrotechnics. For effective operation, enlisted personnel of the Armament Branch should be organized into crews of sufficient strength to maintain and service the airplanes of the combat squadrons and instrument section, including bomb sights.

d. The Communication Branch is responsible for the installation, inspection, maintenance and repair of communication equipment, and the operation of ground equipment. This branch is organized into two sections: The Base Section and the Airplane and Field Section, as follows:

(1) The Base Section is responsible for the installation, inspection, maintenance, repair and operation of the Base Radio Station, the Base Alert Net, and the Group Communication System.

(2) The Airplane and Field Section is responsible for the installation, inspection, maintenance and repair of the airplane radio equipment and field radio sets, setting up and operating of ground stations in the field; and the installation, maintenance and operation of the field telephone service. For effective operation, enlisted personnel of the Communication Branch are organized into crews of sufficient strength to maintain and service the airplanes of one combat squadron.

Note: While the combat crews are under the direct command of the squadron commander, they are charged with the daily maintenance of armament and communication equipment installed in airplanes.)

e. The Inspection Section is responsible for all Technical Inspection as prescribed by Circular 120-2, OCAC.

f. The Supply Section is responsible for the procurement, storage, and issue of all classes of equipment and supplies required to maintain the flying units at the Base or in the field.

3. The 7th Bombardment Group has found this maintenance system to be very efficient. It has the following advantages:

- a. Places the responsibility of all

maintenance under one head and section, instead of two or more as under the present organization.

b. Provides for flexibility in the strength of a command, in that the personnel requirements are based upon the number of airplanes to be serviced.

c. Simplifies the supply problem, saving time and duplication of paper work and efforts required in the requisitioning and obtaining of parts and supplies.

d. Allows for the organization of enlisted personnel into crews and shifts to maintain airplanes in commission during normal flying hours.

e. Provides for specialization of crews to perform preventive inspections and unit changes, which considerably reduces the maintenance man hours normally required to perform any particular inspection or unit change.

f. Allows for a more thorough supervision of inspections than is now provided under the provisions of Circular 120-2, OCAC.

g. Possible to provide sufficient labor saving devices necessary for thorough preventive inspections, economically impractical if more than one maintenance organization is operated at a station.

h. Allows a reduction in number of clerical personnel required to maintain technical records, files, and preparation of technical reports.

i. Allows tactical commanders to give their full time for planning and training of the combat personnel.

4. Much of the success of this system has been due to the untiring efforts of Major Devereux M. Myers, Group Maintenance Executive, and Major Delmar H. Dunton, Assistant Maintenance Executive.

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BOMBING ACTIVITIES OF THE 7TH BOMBARDMENT GROUP

DUE to the organization of the GHQ Air Force as an integral part of the military forces of the nation, with its entailed necessities of mobility, calling for rigid tests of its objective functions, the trend of Bombardment missions has resulted in changed ideas on normal methods of training.

If the ideal bombing unit is to be perfected, all of its personnel must continuously maintain their proficiency. The old maxim has it that practice makes perfect and, with this point in view, continuous year-round bombing and gunnery has been in progress in this Group, in addition to the flying and navigation training required by the new regulations. Bomb sights and ground trainers were received and installed. Instruction on the new sight was started in the shops and on the trainers, and maintenance and repair facilities for the sights were devised. The real work of bringing the entire Group up to a uniform standard of proficiency received its initial impetus. This brought a major problem to the fore. The Group had to hurdle the task of providing primary training for all of its personnel in the fundamentals of bombing involving the use of the new sight.

Due to various contingencies which had arisen - "CCC", "Air Mail," et al, an officer or enlisted man who had participated in bombing training within a few years prior to this time was the exception rather than the rule. None were familiar with the operation of the new bomb sight. Thus, before a definite program for continuous bombing practice could be begun, rudimentary instruction was in order.

Classes were conducted in the use of the sight, and all three bomb trainers were put into continuous operation in

order that personnel of the three tactical Bombardment squadrons might have reasonably thorough ground instruction before being permitted to operate on actual bombing or camera obscura missions. Every pilot was given at least eight hours trainer time before starting camera obscura. When the technique of pilot directing had been mastered, the individual, upon completion of the prescribed initial training, was released for bombing practice.

The Group has a target just off the field in the shallows of San Pablo Bay, but the use of this target is frequently limited by fog and low ceilings, especially in the winter months. Therefore, in order to carry out our extensive training program and conduct many required service tests on complete sets of new type equipment, it has been necessary to use the Mather Field Bombing Range in addition to the Hamilton Field Range. A permanent camp is kept there for this purpose and one or the other of the Bombardment Squadrons are encamped at Mather Field for six months of the year.

The new Bombers and equipment were an unknown quantity insofar as actual bombing and gunnery were concerned. This meant that while initial instruction was being given, bomb racks and bomb sights must be tested individually and collectively, suitability of certain arrangements determined, and changes recommended, where necessary. So, while the training was in progress, certain personnel were concentrating on testing the bombing equipment, making necessary initial installations and changes, and in determining the best procedure which was later prescribed for actual bombing practice.

Extensive test bombing at all altitudes and speeds within the range of the planes was conducted by personnel of the three squadrons in the period from May to the

first of October. During that time, bomb sight and personnel limitations were determined and ballistic data was tested so that everything was ready for the start of actual bombing under regulations for record and practice, in October, 1935. For this record and practice bombing in accordance with the regulations, the squadrons moved, individually, into camp at Mather Field, where there is a satisfactory bombing range. The local range was still being used for various tests prescribed by higher authority. This included tests in extreme low and high altitude bombing and in the design and test of a sight for use at altitudes below that at which the standard sight may be used. These tests, which are still being conducted, include bombing missions as low as two hundred feet and some at the actual service ceiling of the airplane. In one instance, a mission was carried out at an altitude so near the actual ceiling of the airplane that each time one of the five 300-pound bombs was released the plane would gain another 300 feet altitude, which could just barely be held.

Each squadron took its turn in camping at Mather Field while it completed all of its assigned and attached personnel in the required qualification bombing. While they were there for that purpose, they concentrated on bombing, and missions were conducted continuously from early in the morning until late in the afternoon of every day in camp. Under that program, one squadron dropped over 1100 bombs and completed practically all of its "TR. 440" bombing in less than ten days. The other two squadrons, handicapped by the comparatively bad winter weather, still have daily averages of bombs dropped of over 100 each. Practically all personnel of the Group have completed their qualification under the old regulations, and one squadron has again moved to Mather Field to start bombing under the new tentative T.R. 440-40 which is being tested.

A two-weeks' maneuver of the entire 1st Wing was held in the San Joaquin Valley and the Mojave Desert to test the maintenance system for extensive operations and for conducting long range bombing and gunnery missions jointly by all units of the Wing. During this maneuver, Bombardment and Attack squadrons of the Wing were first scattered throughout the area of the maneuver, each operating from a separate airdrome under conditions which might exist at the very start of an emergency. In the three days of this phase, joint missions, coordinated by Wing and Group Headquarters, were carried out in which the various units rendezvoused en route and proceeded on to bomb targets which had been prepared in the Mojave Desert; then returning to their respective air-

dromes without landing.

The next phase included the assembling of the units of each Group at Group airdromes and further work along the same lines as the earlier missions, while the last phase required the squadrons to move back to their original airdromes and operate with additional assistance from supply and maintenance units.

For this maneuver, ground gunnery targets were prepared as well as two types of bombing targets. There were the conventional circular bombing targets and one target made in the shape and dimensions of a battleship outline, including the danger area around the ship. On each mission, the units flew from their assigned bases to the desert, bombed, individually or by flight, squadron or group salvos as prescribed, and then to simulate actual war operations returned to their respective airdromes without landing en route. This required that some of the units travel as far as 250 miles one way and that they remain in the air for the entire mission, including bombing, as long as 3½ to 4 hours. Of course, it is realized that this period in the air is not exceedingly great, but it is believed that it is the first time that combined wing problems have been conducted over such a great distance with actual bombing included.

Aside from the tests of certain tactical problems, this maneuver was designed to test the effectiveness of the units in bombing by various methods. On some of the missions, bombs were released by individual planes with each bombardier operating his bomb sight. Other missions required the simultaneous dropping of all bombs from formations of all of the Bombardment squadrons in the 1st Wing. This so called "pattern bombing" was itself tried in several ways, in each of which, however, bombs were released from non-sighting planes when the bombs were observed leaving the plane which was designated to perform the sighting operation for the particular unit. Sometimes each flight would have one plane which performed all of the sighting operations for the flight. There were also squadron salvos for which only one sight in the squadron was used, and others for which one bombardier performed all sighting operations while the leading planes of the other flights operated their sights for range only. Finally, the Groups and the Wing repeated these various methods for the larger units, to arrive at conclusions as to the best methods for attacking targets under various conditions.

Following a short visit home, the 7th Group again found itself bivouacked at Muroc in the Mojave Desert, participating with the 17th Attack Group, its neighbor from March Field, in advanced bombing tests based on the results of the November bombing on the same targets. In this exercise, especial stress was placed on four-

mation and individual bombing, conducted with standard 300 and 100-pound practice bombs, together with improvised concrete bombs, weighing 600, 1100 and 2,000 pounds. At the conclusion of the

maneuver, a Group mission, composed of two 9-plane squadrons, released squadron salvos of eighteen 300-pound live demolition bombs on the battleship target with excellent results.

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LIEUT.-COLONEL CLARENCE L. TINKER, AIR CORPS

Lieut.-Colonel Clarence L. Tinker, Commanding Officer of the 7th Bombardment Group, Hamilton Field, Calif., was born November 21, 1887, in Osage County, Oklahoma. He graduated in 1908 from the Wentworth Military Academy, and his first four years in the military service were spent as a third and second lieutenant of the Philippine Constabulary on the Island of Panay.

Appointed a second lieutenant of Infantry, April 24, 1912, he served with the 25th Infantry from June 7, 1912, to March 6, 1917; with the 18th Infantry, March 7 to June 1, 1917; with the 62nd Infantry, July 13, 1917, to June 8, 1918, and with the 35th Infantry, July 20, 1918, to March 13, 1919. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, July 1, 1920, and to his present rank, August 1, 1935.

While on duty as Professor of Military Science and Tactics at the Riverside, Calif., Polytechnic High School and Junior College, he was detailed to the Air Service for flying training and, following the completion of the course at the Primary Flying School at March Field, Calif., on March 17, 1920, he was ordered to Post Field, Fort Sill, Okla., to pursue the course of instruction at the Air Service Observation School. Upon his graduation, he was rated "Airplane Pilot" as of October 14, 1921, and on November 25th of that year was transferred to the Air Service. He completed the course of instruction at the Field Artillery School of Fire, December 15, 1921, whereupon he received the additional rating of "Aerial Observer."

Assigned to station at Fort Riley, Kansas, Col. Tinker commanded the Air Service troops at that post from February 9, 1922, until the fall of 1924, when he was assigned as student at the Air Service Tactical School, Langley Field, Va. His completion of the course of instruction was followed by a year of duty as student at the Command and General Staff School at Fort Leavenworth, Kansas. Following his graduation from the latter school, he was detailed as Assistant Military Attache for Air to the American Embassy, London, Eng.

While on this duty, he was piloting a DH-4 over a marked course with Lieut.-Commander Robert A. Burg, U.S. Navy, as passenger. Shortly after leaving the Kenley Airdrome, the engine ceased to function and, unable to clear the farther crest of a valley over which he was flying, the plane crashed and immediately caught fire. Col. Tinker managed to free himself from the blazing plane and his first thought was to extricate his passenger, who was unable to free himself because of his injuries and because his parachute encumbered him. Making no headway on one side of the now-blazing inferno, he tried the other side and was successful in freeing the badly in-

jured Naval officer. Lieut.-Colonel Kenyon Joyce, the Military Attache, recommended Col. Tinker for the Distinguished Flying Cross.

After leaving the hospital in England, Col. Tinker returned to the United States and received further treatment for his injuries at the Walter Reed General Hospital. Upon restoration to duty, he was, for a period of eight months, on duty in the Office of the Chief of the Air Corps, Washington. In November, 1927, he was assigned to Kelly Field, Texas, as Assistant Commandant of the Advanced Flying School. He assumed command of the Advanced Flying School and of the 10th School Group from July 1, 1930, to August 6, 1930.

On October 15, 1930, Col. Tinker assumed command of Mather Field, Calif., and of the 20th Pursuit Group, and remained on this duty for exactly two years, when he was transferred to March Field, Calif., where, among other duties, he performed those of Executive Officer and Post Operations Officer. In June, 1933, he assumed command of the 17th Pursuit Group. Upon the occupancy of Hamilton Field, he was placed in command of this post and of the 7th Bombardment Group, in February, 1935.

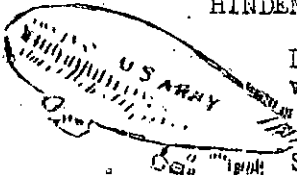
Col. Tinker has passed the 4,000-hour mark in total flying time. On July 4, 1935, he flew across the continent in a Martin Bomber from Hamilton Field to Washington, D.C., in an elapsed time of 14 hours and 30 minutes, with stops at Salt Lake City, Omaha and Indianapolis. His return flight to Hamilton Field, on July 9th, was accomplished in 16 hours and 55 minutes, stops being made at Indianapolis, Scott Field, Denver and Salt Lake City.

During the GHQ Air Force Maneuvers in Florida in December, 1935, Col. Tinker led the 7th Provisional Bombardment Group in a flight from March Field, Calif., to Vero Beach, Fla., the distance of 2300 miles being accomplished in an elapsed time of 21 hours and 15 minutes.

On September 5, 1935, Col. Tinker, about to make a landing at March Field upon returning with 61 other airplanes of the 1st Wing, GHQ Air Force, from a mock air attack on the California Exposition Grounds at San Diego, noticed that his landing gear could not be lowered. Ordering his three passengers to jump, he contacted the ground by radio and was advised to go to Rockwell Field where expert mechanics were available. At Rockwell Field he glided in on the belly of the airplane, which suffered only slight damage.

For the heroism displayed by Col. Tinker in the rescue of Commander Burg, as previously mentioned, the War Department awarded him the Soldier's Medal.

HINDENBURG VERSUS TC-14.



During the past few weeks, many visitors at the huge airship hangar at Scott Field, Belleville, Ill., have asked the military personnel how the U.S. Army airship TC-14, the world's largest non-rigid airship, compares in size, speed and structure with the new Hindenburg, which recently completed its second trans-Atlantic flight.

Comparing the two airships is much like comparing a wiener with a bologna. The Hindenburg has a length of 812 feet, more than three and one-half times that of the TC-14. The German ship's gas capacity is 6,609,000 cubic feet, eighteen times greater than the TC-14. When seen in the air, the huge size of the Hindenburg and the comparatively small size of the TC-14 are not realized because of distance and height. Visitors at the Scott Field airship hangar, when getting a close-up view of the 236-foot TC-14, realize that it is fairly large and fail to visualize the difference between it and the Hindenburg. A minute comparison will reveal a world of difference between the two airships.

Externally, the first difference that will be noticed is that the TC-14 control car is located almost centrally on the lower side of the envelope and that its three motors are attached directly onto the control car; two on outriggers, one at each side, and one just inside the rear end of the car with the propeller shaft extending to the outside. The Hindenburg's control car is located on the underside of the hull near the nose, and its four motors are located, two on each side, near the central portion of the airship. The power plant of the TC-14 totals 730 horsepower as against 4400 horsepower for the larger ship.

Another prominent difference is that the TC-14 has five tail surfaces, while the Hindenburg has only four. Of the TC-14's five surfaces, the upper one is a stabilizer, the two lateral ones are for elevation, and the two lower ones, set at approximately 45 degrees from the perpendicular, are for directional control. The Hindenburg has the four conventional tail surfaces; the upper one is a stabilizer, the two lateral ones are for elevation, and the lower is for directional control.

The TC-14 has a flat cone-shaped plate with a series of wooden battens attached to its nose, the purpose thereof being to give a pointed shape to the nose against the wind pressure in flight. The Hindenburg has the same type of cone-shaped plate which is built

onto the interior framework and is not visible from the outside.

The real difference between the TC-14 and the Hindenburg is neither the size nor the external appearance but their basic structure. Like plants and animals, airships are continually undergoing evolution. The first aircraft were balloons inflated with wood smoke. These were followed during the next hundred years with various inventions for motorizing them. The first successful motorized balloons are known as the non-rigid type. They had no framework inside or along the bottom of the inflated envelope. The car is suspended on rigging attached either to the outside of the envelope itself or to catenary bands along the top inside of the envelope. This class of airship is most efficient in the size ranging from 30,000 to 400,000 cubic feet capacity. The TC-14, a 360,000 cubic-foot non-rigid craft, is just below the maximum size for this type.

The second class of airship design is known as the semi-rigid, a development just preceding the World War. This class of airship has a large inflated envelope, on the underside of which an aluminum framework, called a keel, extends from nose to tail. This keel is supported by rigging attached at numerous points to the inside of the envelope. The control car and motor gondolas are attached directly onto the keel itself. The size of this type of airship ranges from 400,000 to 1,000,000 cubic feet gas capacity.

The third class of airship is the rigid type, which was first designed and constructed by Count Zeppelin in the 1890's. The rigid airship has an aluminum framework which houses a number of separate gas cells and to which are attached the control car, motor gondolas and surfaces. Inside the framework there are, in addition to the gas cells, fuel tanks, water ballast tanks, freight storage rooms, airplane storage space and quarters. This type of airship is most efficient in size from 1,000,000 cubic feet gas capacity and upwards. To date the largest airship of this class which has been built is the Hindenburg.

The most necessary item in the structure of the TC-14 is, of course, the envelope, for without it there would be nothing to hold the lifting gas. In the case of the Hindenburg, the outside envelope serves only as a skin or cover for the airship, as the gas is stored in separate cells inside the aluminum framework. If the envelope were removed, the inside gas cells, storage tanks and other portions would be exposed to the weather - but the airship would rise. There would be, however, insurmountable difficulties in steering the airship without its outside envelope, because there would not be a great rush of

air over the tail surfaces. The motors would pull the ship forward in a straight course that could be changed only by the force of the winds.

Thus, in the case of the Hindenburg, while the envelope is not an absolute necessity for ascension, it is necessary for navigation and for the protection of the interior of the airship against the destructive effects of the outside air. Further, the shape of the airship envelope is important from the standpoint of efficiency in fuel consumption, speed and directional control. Both airships incorporate the latest improvements in streamlining, are gently and evenly rounded from nose to tail, and there is no great bulge near the nose. They are the latest developments in their respective lines. The Hindenburg has a maximum speed of 90 miles an hour against 85 m.p.h. for the TC-14; can carry 100 people, 7700 gallons of fuel and make a continuous flight of 8750 miles. The TC-14, with a fuel-carrying capacity of 1320 gallons, can carry 10 people and make a continuous flight of 2500 miles.

Regardless of their structural differences; they both resemble silvery cigars in the sky, and they are the very latest models in their particular class of transportation.

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RADIO TALK FROM AIRSHIP TC-13

During the recent celebration of the second birthday of the Junior Birdmen of America, a talk was broadcasted from the TC-13 airship at Moffett Field, Calif., and rebroadcasted by Station KYA, San Francisco. Major Bursette Palmer, Air Reserve, Field Director of the Junior Birdmen, held a two-way radio conversation with Station KYA, describing the organization and introducing Major Clarence B. Lober, Commanding Officer of the 19th Airship Squadron, Moffett Field, which operates this airship.

Explaining the construction and operation of the TC-13, Major Lober stated, in substance, that this airship was the only one operated on the west coast by our military service, and with its 360,000 cubic feet volume may appear as a toy compared with the 6,500,000 cubic feet volume of the former queen of the sky. While containing a little over 5% of the volume of the largest rigid airships thus far built in this country, this non-rigid airship has 25% the range and 90% the speed of the large ships and, due to several contributing factors, is able to withstand more severe weather conditions.

The envelope of the TC-13 is constructed of 3-ply rubberized cotton fabric, the shape of which is maintained by always having within a greater pressure

than that of the surrounding air. Within the hull are two air chambers or ballonets, one toward the front, the other aft, the remaining and larger part of the hull containing helium. As the barometric pressure or density of the external air changes, due to variations in either or both weather and altitude, the difference between the internal and external pressures would vary if some adjustments were not made. To prevent excess pressure which, if too great, would burst the hull, pressure relief valves, seven of them, 20" in diameter, are connected to the air or gas spaces in the hull. To raise the internal pressure, scoops are provided behind the propellers, thus taking air into the hull, the pilot controlling its flow to either the forward or rear air chamber, as desired, to maintain proper balance. The airship car contains an engine-driven blower for the same purpose, used whenever the forward speed of the ship is too slow to permit use of the other method, such as in approach for a landing or while moored away from the hangar.

To the hull are affixed battens or ribs to stiffen the nose and control surfaces to obtain, dynamically, horizontal and vertical control in flight. The airship car is suspended from ten steel cables which extend obliquely upward through the hull to two longitudinal catenary cables fastened to the hull near the top by means of fabric curtains, one on either side of the center line.

The car, covered with fabric and aluminum sheet, and about 40 feet long, 8 feet wide and 10 feet high, is constructed of chrome-molybdenum steel tubing. The upper portion of the car contains twelve 110-gallon fuel or ballast tanks and two smaller tanks, one for engine oil and the other for water. Five of the tanks are provided with dump valves so that fuel or ballast may be released if it becomes necessary to reduce the weight of the ship to obtain static equilibrium, so that at low flight speed the ship would not lose altitude. Two are slip tanks, i.e., the entire tank with contents, weighing about 750 pounds, could be instantly dropped if added lift were needed in an emergency.

The normal crew of the TC-13 is nine. In the pilot's compartment the altitude pilot is seated on the left. Before him are controls for the seven gas or air valves in the hull, controls to govern the release of ballast, an inclinometer to indicate the angle of pitch of the ship, four manometers, one a liquid type for checking the three mechanical type instruments, one connected to each air chamber, and one to the gas chamber. Above these are mounted an airspeed meter, rate of climb indicator, and an altimeter. Besides these are the two engine throttles, the master ignition switch, the signal switch by which instructions can be given the engineer, the release for the landing ropes, and on the right a large wheel in

the fore and aft plane which the pilot is turning, checking the oscillations in pitch and smoothing out the flight path.

The direction pilot is seated behind a slanted wheel, much like that in an automobile, with a compass, drift meter, clock and radio compass indicator to keep him company. In a rack above the head of each pilot is his parachute, which can readily be attached to his harness. In a small box behind the direction pilot is a day's emergency ration for the crew. On a table are various navigation instruments and data to enable computations to be made of the position of the airship.

To the rear of the radio operator on the right side of the car is the bomber's seat, before which is the bomb sight, and to the right of which are the electrical controls, the operation of which will release bombs either singly or in salvo. On either side of the car, on outriggers, are mounted two Pratt and Whitney "Wasp" engines of 450 h.p. each, to which 3-bladed aluminum propellers of 12 foot diameter are attached. Between the outriggers, in the car, is seated the engineer, with the controls and instruments necessary to engine operation conveniently arranged about him. Behind him, on the left, is the radio transmitting equipment and, opposite, the galley with its water supply and electric hot plate arranged on a convenient cabinet, in which is stored the galley equipment. The remaining space to the rear is occupied by sleeping accommodations for four, and the well, out of which can be lowered the sub-cloud car. This is a streamlined affair just large enough to seat one person, and it can be lowered 1,000 feet below the airship, permitting the observer to report by telephone the presence, location and disposition of an enemy force, while the airship remains concealed in the clouds above.

Airships are peculiar in their ability to hover, i.e., to maintain their altitude without need for forward speed, and are noted for their long range and long flight duration. The TC-13 has been in commission three years, during which time it has been in flight nearly 2600 hours. Flights of 20 hours or over have been made once or twice each month during that period. In January, 1935, a flight was made from Langley Field, Va., to Miami, Fla., during the course of which the airship remained moored out on a portable mast for four days. Later in 1935, the ship was flown from Langley Field to Scott Field, near St. Louis, a distance of about 800 miles. In November of last year, it was flown from Langley Field to Moffett Field, Calif., via Shreveport, La.; San Antonio, El Paso, Texas; and March Field, Riverside, Calif. The first leg

of this journey was over 1,000 miles.

Just about a month ago, the TC-13, piloted by Captain Lawrence A. Lawson, remained in the air over 76 hours, and landed with more than enough fuel for another 76 hours. A few days later, Capt Lawson made an extended flight of over 1800 miles at an air speed of 85 miles per hour, landing with enough fuel for 580 more miles, or a total demonstrated range of 2380 miles under normal wind conditions. These are the characteristics of a real aircraft of military value. Of course, the speed of 76 miles per hour is low compared with that of modern air-planes, but speed is not an essential or even a desirable characteristic for the conduct of harbor patrols, scouting for submarines and mines, convoying surface craft, and similar missions.

Lieut.-Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Ill., commenced the annual summer airship night flying on May 14th, by making a 12-hour flight in the TC-14, on the St. Louis-Indianapolis radio beam, covering a distance of 500 miles. The TC-11 airship also flew 500 miles on a 12-hour flight the same night.

BALLOON ACTIVITIES AT FORT SILL, OKLA.

Local weather conditions aiding, the 1st Balloon Squadron at Fort Sill, Okla., has been busy tucking flying hours under its belt. Any hour of the day finds the captive balloon aloft on a mission. Free ballooning has been very nearly as popular, each pilot of the squadron having placed to his credit at least one cross-country in the 19,000 and 35,000 cubic foot class. This activity is popular among the officers of the Field Artillery School at Fort Sill, each "hop" attracting many prospective passengers from the School, who are eager to try this new experience. Heavier-than-air pilots find these balloon trips instructive and pleasant in new experience.

May 7th was demonstration day at the big balloon hangar. The students of the Field Artillery School were given an extensive and comprehensive lecture and inspection tour covering the operation and handling of the observation balloon. Details included were field maneuvers gassing the balloon, ground defense, telephone nets and photography. Officers of the School found the demonstration so satisfactory that it is to be included in the regular curriculum, which is quite complimentary.

Major James E. "Jimmy" Doolittle, Air Reserve recently completed two weeks of active duty in the Office of the Chief of the Air Corps and was attached to Bolling Field for flying. On May 20th, Major Doolittle, along with several other officers attached to the Chief's office, attended the conference at Langley Field of the National Advisory Committee for Aeronautics.

OBITUARIES

Fate decreed that Wright Field should lose two of its officers through airplane accidents - Captain William L. Scott, Jr., on May 17th, and Major Hez McClellan on May 25th.

A resident of the District of Columbia when he received a West Point cadet appointment, Captain Scott graduated from the U.S. Military Academy in June, 1923. Detailed to the Air Corps to undergo flying training, he graduated from the Primary Flying School, Brooks Field, Texas, March 25, 1924, and from the Advanced Flying School, Kelly Field, Texas, September 13, 1924, specializing in Bombardment. He was then assigned to station at Bolling Field, D.C., where he performed, among other duties, those of Assistant Engineering Officer. From September 9, 1929, to January 19, 1932, he was stationed at Rockwell Field, Calif., being Operations Officer of the 11th Bombardment Squadron.

From February 10, 1932, to December 28, 1934, Captain Scott served a tour of duty in the Panama Canal Department, being assigned to the 25th Bombardment Squadron. For a little over six months thereafter he was stationed at Langley Field, Va., with the 96th Bombardment Squadron, serving as Armament Officer and Flight Commander. By virtue of holding the latter position, he was promoted to the temporary rank of Captain on April 2, 1935. He began his course of instruction at the Air Corps Engineering School at Wright Field during the latter part of July, last year.

Captain Scott was promoted to the regular rank of Captain on August 1, 1935. At the time of his untimely death he was 37½ years of age.

Major Hez McClellan, Air Corps, was considered a superior pilot, one with extensive experience in long-distance navigation flights. His assignment in November, 1935, as Chief of the Flying Branch, Materiel Division, Wright Field, Ohio, was in tribute to his exceptional ability as a pilot of all types of aircraft.

Born at Hall, Indiana, May 1, 1894, he attended grammar schools in his native city and Indianapolis, Ind.; graduated from high school at Indianapolis, and completed two years of study at Butler College in that city. He enlisted in the Aviation Section, Signal Corps, December 8, 1917; graduated from the School of Military Aeronautics, University of California, Berkeley, March 30, 1918, and, following a month's duty at the Aviation concentration camp at Camp Dick, Dallas, Texas, was ordered to Kelly Field, Texas, for his flying training, upon completion of which he was, on September 7, 1918, commissioned a second lieutenant and assigned to active duty at Kelly Field. Shortly thereafter he was assigned to duty as student at the Instructors School at Brooks Field, Texas, and, upon the completion of the course of instruction thereat, returned to Kelly Field for duty in the Flying Department as instructor.

Transferred to the Philadelphia District Ordnance Officer, Major McClellan, after a

little over a year's duty at that station, was commissioned a second lieutenant in the Air Corps, Regular Army, July 1, 1920, and assigned to duty at the Primary Flying School at Carlstrom Field, Arcadia, Fla., as Flying Instructor. He remained with this School when it was transferred to Brooks Field, Texas, at that time holding the position of Stage Commander.

In August, 1926, Major McClellan was ordered to duty in the Philippines and, upon the completion of his two-year tour of duty in the Islands, was assigned to Mitchel Field, N.Y. From September, 1932, to June, 1933, he was a student at the Air Corps Tactical School at Maxwell Field, Ala. Following his graduation, he was assigned to station at Bolling Field, D.C.

Major McClellan qualified in aerial navigation and instrument flying, taking a course in instrument flying in 1934 at the School conducted at Wright Field, under the supervision of Major Albert F. Hegenberger, and the course in advanced air navigation at the School at Rockwell Field, Calif., during 1935.

In November, 1935, he was assigned to Wright Field, Dayton, Ohio, as Chief of the Flying Branch, and was given the temporary rank of Major.

Major McClellan participated in the flight of ten B-10 Martin Bombers from Washington, D.C., to Fairbanks, Alaska, and return, July 19 to August 20, 1934, serving in the capacity of Supply Officer. This flight involved a total distance estimated at approximately 8,290 miles, and was led by Lieut.-Colonel Henry H. Arnold, now Brigadier-General and Assistant Chief of the Air Corps.

From the period June 12 to August 14, 1935, Major McClellan, accompanied by Sergeant Tamson and Corporal Krause, and piloting a Douglas C-29 Amphibian, accomplished an airplane reconnaissance of the routes to and from Alaska and throughout the territory of Alaska. During this period he flew on 38 days a total of 153 hours and 25 minutes, and secured a splendid photographic record of the places visited. The time on the ground was spent in ground reconnaissance, both visual and photographic, in necessary airplane maintenance, and in securing information from the inhabitants. Many of his flights in Alaska were truly pioneering in character. His was the first military airplane ever to land at Point Barrow, or to return from Point Barrow to Fairbanks over the route taken. This route was mostly over terrain uninhabited and for which the details of the map carried were entirely inadequate to afford a reasonable expectation of safe progress over the ground in the event of airplane failure. The terrain is among the most rugged, desolate and difficult of traversing on foot of any in the world.

Major McClellan, during this expedition, was on his own initiative. The comprehensive character of the survey made by him, as evidenced by the very excellent and complete report submitted by him covering this survey, gave ample evidence of the intrepidity and resourcefulness

of this officer. The nature and extent of the flying accomplished was extremely hazardous and beyond the call of ordinary duty. The successful performance of these flights reaffirmed his distinguished ability as an exceptional pilot and as an officer of excellent professional attainments.

For this pioneering flight, Major McClellan was recommended for the award of the Distinguished Flying Cross. His total flying time was well over the 5,000-hour mark.

The Air Corps extends its sincere sympathy to the bereaved families of the deceased officers.

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CATERPILLARS

The latest entrant into the mythical aeronautical fraternity of Caterpillars is 2nd Lt. Frank J. Bennett, Air Reserve, 36th Pursuit Squadron, HQ Air Force, Langley Field, Va., who was forced to "bail out" of a P-12F type airplane at about 3,000 feet, due to a broken oil line and subsequent engine failure.

Lieut. Bennett was returning from Danville, Va., on a night navigation training mission and was about 18 miles out when the failure occurred. The airplane crashed in a ravine near Spring Garden, Va., and was completely wrecked. The pilot drifted to earth with his parachute about a mile from the wrecked airplane, landing in a small field, and was uninjured. He states that when he realized he had to jump he had no apprehension. It all seemed perfectly normal and natural. Due to the darkness, he had no sensation of descent until very near the ground. His flashlight was of considerable help upon landing.

Flying Cadet James L. Bledsoe, of the Pursuit Section of the Air Corps Advanced Flying School, was returning from a student night cross-country training flight on May 11th, when his engine developed trouble. Returning from Fort Clark, Texas, at an altitude of approximately 2,000 feet, Cadet Bledsoe had reached a point about three miles southeast of Hondo, Texas, when his engine suddenly quit. Although he had gasoline remaining in his auxiliary tank, he changed to his main tank and used the wobble pump in an effort to regain his engine. It caught again and ran for only a few minutes before it stopped the second time. Cadet Bledsoe dropped one flare and saw what he thought was a satisfactory emergency field. When directly over this field he released his second flare, which failed to ignite. Having insufficient illumination for a landing, he climbed out onto the wing and was in the act of leaving the airplane when the engine again picked up. He was unable to regain his position in the cockpit or control the airplane from his position on the wing, so the two soon parted company. He landed without injury and promptly notified the officials at Kelly Field. The airplane, of course, was completely demolished.

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GRADUATION DATE FOR ADV. FLYING SCHOOL CLASS

The students of the present class at the Advanced Flying School, Kelly Field, Texas, consisting of 9 officers and 53 Flying Cadets, are scheduled to graduate on Wednesday, June 17, 1936. Graduation Review is scheduled at 9:30 a.m., and Graduation Exercises at the post theatre will take place at 10:45. All of the students are anxiously awaiting word as to their assignment to station. The Cadets in particular are concerned, because the majority of them have made application for commission in the Regular Army, in compliance with the provisions of Circular No. 20.

The Pursuit Section of the Air Corps Advanced Flying School departed on May 18th on their maintenance navigation training flight, which took them through Barksdale Field, La.; Fort Sill, Okla.; Lubbock, Texas; Roswell, New Mexico; Fort Bliss, Marfa, Dryden and Fort Clark, Texas. Upon arrival at Fort Sill, Cadet J.V. Boyer became so ill from exposure to poison ivy that it was necessary to dispatch the airplane ambulance from Kelly Field to his assistance. The ambulance was flown by Captain R.C. Rhudy, who was accompanied by Lieut. J.E. Blair. The latter flew Cadet Boyer's plane back to Kelly Field.

The personnel of the Attack Section of the School departed on their maintenance navigation training flight on May 20th, their route being Kelly Field to Abilene, Texas; Fort Sill, Okla.; Midland, Texas; Carlsbad, New Mexico, Fort Bliss, Texas, and return by way of Dryden, Tex.

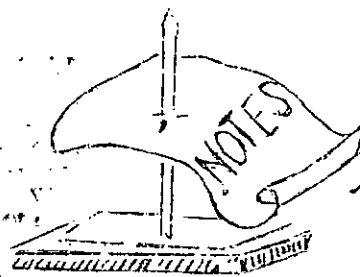
The Bombardment and Observation Sections were scheduled to depart on May 25th and June 1st, respectively, and to follow approximately the same itinerary as the other Sections. Due to the shortage of airplanes at Kelly Field, it will probably be necessary to split the Bombardment Section into two flights, in which event the second flight will depart on June 3rd.

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During the recent Fiesta San Jacinto in San Antonio, the usual pilgrimage was made to the Alamo, the Shrine of Texas Liberty. The march to the old fort was made on foot and was participated in by many officials and citizens of all classes from all over the State, bearing floral tributes to the Shrine. Each Army station in San Antonio and vicinity was represented by an enlisted man. The San Antonio Air Depot was represented by Sergeant R.R. Riley, of the 3rd Transport Squadron, who carried a large wreath, prepared by Major Walter Hitzfeldt, Post Quartermaster, and composed of the gorgeous flowers of every hue which grow in such variety and profusion at that station. In this wreath, the words "Duncan Field" were worked out in flowers.

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The thanks of the News Letter is extended to Sergeant Lindquist, Air Corps, Connecticut National Guard, for the cover design featuring this issue of the News Letter. Sergeant Lindquist contributed a cover design on a previous occasion, and we hope to hear from him again.



from Air Corps Fields

Bolling Field, D.C., May 23rd.

The transfer of Major Francis B. Valentine, Commanding Officer of the 100th Service Squadron at Bolling Field, to Mitchel Field was recently announced. He will be genuinely missed by officers and enlisted men of this command.

Previous orders assigning Capt. H.R. Baxter to duty as Post Operations Officer were revoked, and Capt. Wm. A. Matheny, formerly Assistant Post Engineering Officer, was assigned to the Operations Office.

Inspection of troops and barracks by the Commanding Officer was held on May 21st. The inspection was the first to be held since the change to summer uniforms, and was followed by an inspection and check of clothing and equipment.

Private Orville L. Sparks, Station Complement, received official notification of appointment to Randolph Field as a Flying Cadet, and will be assigned to the July class. The appointment climaxes a year of intensive study and preparation for this soldier, and his many friends will be wishing him the best of success.

Bolling Field is also proud to announce the appointment of Private Salvo Rizza, a member of the Station Complement, as a Cadet to the U.S. Military Academy, to report on July 1st.

The regular monthly post dance was held on Saturday night, May 16th, in the Gymnasium. The balmy weather and excellent orchestra probably accounted mainly for the large crowd in attendance. The dances promise to become increasingly popular throughout the coming summer months.

Brooks Field, Texas, May 5th.

The last of the O-43A airplanes have been returned by the Douglas factory. These planes were sent out from this field for the installation of flaps.

On April 20th, Captain Leroy Hudson flew Major-General Frank Parker to Chicago, returning on the 23rd. Captain John J. O'Hara flew Colonel A.M. Heritage on the same trip.

Master Sergeant Fred Browne, 58th Service Squadron, attached to the 62nd Service Squadron, was placed on the retired list on April 30th.

Major Robert Kauch left for Washington, his new assignment, on April 23rd.

Technical Sergeant Herbert H. Mitchell, Station Complement, was transferred in grade to D.E.M.L., Reserve Officers Training Corps, Texas Military Institute, May 1st, and appointed Master Sergeant.

Selfridge Field, Mt. Clemens, Mich., May 19th.

Gunnery practice of members of the First

Pursuit Group at Barksdale Field, La., which commenced February 1st, was completed on May 4th, and all personnel returned to Selfridge Field. About one hundred officers and flying cadets pursued the course.

Lieut.-Colonel Ralph Royce departed from Selfridge Field on May 18th for Wright Field, Ohio, for temporary duty at that station as a member of the Pursuit Evaluation Board now in session there.

Boston Airport, E. Boston, Mass., May 8th.

Captain Cullen from Mitchel Field is using the Boston Airport for a base while photographing sites for dams throughout Massachusetts, New Hampshire and Maine. In all probability the better part of the summer will be taken on this project.

Recent visitors to this station included Col. Gilkeson; Col. Curry with Capt. Persons; Major Lynd; Capt. Acheson with Major Wilson; Capts. Cullen, Damberg, Gibbs, Greene and Salisbury; Capt. Towle with Major Grew; Capts. Warburton, Vance, Lieut. Dent; Lieut. Haarman with Lieut. Casey; Lieut. Hannah; Lieut. Kelsey with Capt. Stevens; Lieut. Logan; Lieut. Olsen with Capt. Chalker; Lieuts. Snell, Thayer, Vandenberg, Walker, Williams, Wilson, Winch, Cadets Hoover, Herlick, Thomas, and Lieut.-Commander Lonnquest.

Regular Army pilots have put in 1782 hours this fiscal year. The total observer time, Regular Army, is 1448:05 hours. Total Reserve pilot time is 1784:25, of which 1262 is chargeable to our allotment for the fiscal year. Total Reserve observer time is 361:40.

Kelly Field, San Antonio, Texas.

Brigadier-General John H. Hughes, Assistant Chief of Staff, G-3, with Brigadier-General James E. Chaney, commanding the Air Corps Training Center, arrived at Kelly Field on May 3rd for inspection of the training activities of the Advanced Flying School. They were met at the entrance to the post by Colonel Jacob E. Fickel, who escorted them on a tour of inspection which included all of the training sections, camera obscura range, and an inspection of the airplanes used in student training.

In addition to the normal routine duties performed by the 22nd Photo Section, a number of special orders have been filled within the last two weeks. Fifty 8x10, one hundred 4x5, and twenty-five K-10 pictures were prepared for the purpose of illustrating publicity articles in connection with the Air Corps Advanced Flying School. In addition, aerial photographs of outlying fields within easy reach of San Antonio have been made. Forty-two obliques and 24 verticals of these fields have been made.

First Lieut. Charles F. Densford, recently

mentioned in the Air Corps News Letter as having acquired the unofficial world's pistol record, was assigned as commanding officer of the 22nd Photo Section.

Scott Field, Belleville, Ill., May 18th.

The 9th Airship Squadron held its second annual "get-together" May 13th in a nearby picnicking grove. Barbecued meat, double-decked ice cream cones, etc., were served to the members of the organization, the 21st Airship Group Headquarters Detachment, Quartermaster Detachment and their guests. During the afternoon's eating tournament, the personnel took time out for soft ball and horseshoe pitching.

Sergeant A.J. Troupe, Station Complement, who is the 1935 title holder of the Belleville Knights of Columbus bank pocket billiard tournament, is practicing for the 1936 tournament to be held in June.

Capt. Nuel Pazdral, Medical Corps, made a railroad tour to Fort Leavenworth, Kans., and was there for nine days for the purpose of examining applicants for flying training at Randolph Field, Texas.

Captain John B. Henman, Medical Corps, who graduated from the Air Corps Flight Surgeons' School at Randolph Field on May 3, 1936, arrived May 15th for duty at the Station Hospital.

Tech. Sgt. Harvill B. Srote, 21st Photo Section, departed May 13th for duty with the 4th Photo Section, Maxwell Field, Ala.

Staff Sgt. Richard S. Anning, Station Complement, who served at Scott Field from Feb. 1, 1922, to May 1, 1936, will sail from New York on June 2nd for duty in Hawaii.

Randolph Field, Texas, May 20th.

Major-General Frank M. Andrews, Commander of the HQ Air Force, Langley Field, Va., accompanied by Major-General Albert J. Bowley, Commanding General, 3rd Corps Area, and Major-General Charles E. Kilbourne, Commanding General, 2nd Division, Fort Sam Houston, arrived here May 14th. General Bowley was on leave and accompanied General Andrews on an air tour of inspection of Air Corps stations. Gen. Kilbourne returned to his station at Fort Sam Houston, Texas. Other passengers in the plane were Lieut.-Col. Robert Olds of General Andrews' Staff; Major James D. Andrews, Jr., brother of Gen. Andrews, of the Corps of Engineers, National Guard Instructor at Spartanburg, S.C., and Pvt. H.S. Williams, enlisted pilot.

Five of the new Seversky BT-8 training planes arrived to date at the Primary Flying School. The flying personnel of the field have been keeping them on the "hop" almost continuously since their arrival.

Fort Sill, Okla., May 16th.

Post Field welcomes a new pilot from the Hawaiian Department. 1st Lt. Julian M. Chappell of the 50th Obs. Sqdn., Luke Field, is the newest addition to Flight E, 16th Observation Squadron, at this station.

Flight "E" has been extremely busy flying missions in connection with both tactical and school units, engaging in radio net communi-

(Continued in next column)

WASHINGTON OFFICE NOTES



Major-General Oscar Westover, Chief of the Air Corps, stopped in at Selfridge Field, Mich., for a short while to refuel his airplane on the afternoon of May 15th, enroute to Bay City, Mich. Brig.-General Henry H. Arnold, Assistant Chief of the Air Corps, arrived at Randolph

Field, Texas, in an O-38 plane on May 14th from Barksdale Field, La. He inspected Randolph and Brooks Fields the following day; Kelly Field and the San Antonio Air Depot on Saturday, and on Sunday morning departed for March Field.

Air Corps officers visiting the Chief's office during the course of extended navigation flights, or for the purpose of conferring on various Air Corps matters, were Lieut.-Colonel Herbert A. Largue, from Maxwell Field, Ala.; Lt.-Col. Wm. B. Wright from Fort Hayes, Ohio; Lt.-Col. Lloyd N. Keesling from Randolph Field, Tex.; Capt. William W. Welsh from Bowman Field, Louisville, Ky.; Capt. Walter E. Richards from Boston Airport, Mass.; 1st Lieut. Harvey P. Huglin and Walter C. Sweeney, Jr., from Barksdale Field, La.; Colonel Jacob W.S. Wuest from Rockwell Field; Capt. Henry H. Reilly from the Middletown, Pa., Air Depot; Captain Chas. W. Sullivan from Rockwell Field; Capt. Robert S. Heald from Wright Field; Ames S. Albro from San Antonio Air Depot and Oakley G. Kelly from Patterson Field, Ohio.

Officers proceeding to Wright Field for temporary duty were Majors Robert Kauch, Ross G. Hoyt and Capt. Harlan W. Holden.

Major Malcolm C. Grow returned May 25th following a flight to Jacksonville, Fla.

Lieut.-Col. Harvey S. Burwell returned May 26th from temporary duty at March Field.

Colonel Chalmers G. Hall, Chief of Supply Division, returned May 13th after a short leave.

Lieut.-Col. Alfred H. Hobley left May 23rd for temporary duty at Wright Field.

Major Rosenham Beam and Capt. Alfred W. Marriner returned from temporary duty at Wright Field.

Major Carl W. Connell returned from a flight to Columbia, S.C. Prior to this trip, Major Connell and Capt. E. J. Walters, W.M.C., on duty in the Quartermaster General's Office, were at Selfridge Field for conference on a construction project at Camp Skeel, Oscoda, Mich. Accompanied by Lt.-Col. Ralph Royce, they proceeded to Lansing, Mich., for further conference with officials of the Michigan Department of Aeronautics.

ation, mosaic mapping, fire control, etc., in fact, the whole list for which observation is fitted, plus attack ship missions.

France Field, Panama Canal Zone, May 5th.

Now that they have decided who won the war, during the maneuvers, we shall swing into our gunnery season. Of course, we know who won the war, because all the airplanes with the exception of two were on the side of the Reds, and who could win a war without we demons of the sky, even if we did give the wrong coordinates occasionally? All the ground instruction in

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gunnery has been run off with fine success on the 1,000-inch range. The 25th Bombardment Squadron is well into their aerial gunnery course. The 7th Obs. Sqdn. is awaiting the installation of tow reels on their B-10B's.

Lieut. "Kingfish" Kelley was married on the afternoon of May 1st to Miss Margaret Donovan. The ceremony took place in the Catholic church of Colon. Many friends of the bride and groom from the Army and Canal Zone witnessed the beautiful wedding. Lieut. John M. Frice was best man, and Capt. Harding, Lts. Underhill, Epler, Montgomery, Guiney and Keese, ushers. Everything went off smoothly and the groom was the picture of calmness throughout the wedding, despite all the efforts of fellow bachelors to rattle him. Following the reception, the couple left on an ocean liner for a two weeks' honeymoon in Costa Rica. The ship left with a fair size load of rice. Congratulations, Kingfish and Mrs. Kelley.

San Antonio Air Depot, Duncan Field, Texas.

A group of aviation personnel of the U.S. Navy visited this Depot and Randolph Field, May 1-4, on an extended tour by air of various Army, Navy, and commercial aeronautical overhaul establishments, pursuant to the policy of the Naval Bureau of Aeronautics of sending such groups annually on these tours for the purpose of inspecting various overhaul activities throughout the country and interchanging ideas on overhaul methods and processes. As in the past, this visit proved most enjoyable and of inestimable benefit in the cause of good fellowship and coordination between the two aeronautical services and of progress in national defense aviation.

Lieut. C.S. Irvine of the Engineering Section, Air Corps Materiel Division, Wright Field, Ohio, arrived here to confer on maintenance problems in connection with R-1820-21 and R-1340-27 engines. Mr. W.D. Kennedy of the Wright Aeronautical Corp., Paterson, N.J., and Mr. K.C. Sonner, representative of that concern at Brownsville, Texas, also visited the Depot for a few days for conference on various engine maintenance matters.

Capt. A.R. Nelson and Lieut. D.G. Desmond (Air Res.) of the 20th Pursuit Group, 3rd Wing, Barksdale Field, were on ten days' temporary duty here to assist in running the three-hour test on certain overhauled engines for that station.

Major V.D. Stone and Lieut. H.S. Houghton, of the Colorado National Guard Aviation, Lowry Field, Denver, ferried an O-19 to the Depot and returned to Lowry Field with two other O-19's.

Warrant Officer and Mrs. A.R. Trabold departed May 1st on a month's leave.

Lieut.-Col. S.W. Fitzgerald, A.C., from the Office Chief of Staff, Washington, visited the Depot enroute to the West Coast and greeted old friends in this vicinity.

Lieut.-Colonel Frank D. Lackland and Capt. J.H. Hicks, of the Field Service Section, Materiel Division, Wright Field, were welcomed on their arrival here May 20th. They were on an air tour of inspection of the continent-

al Air Depots.

Major Ralph B. Walker, accompanied by Mrs. Walker and son, departed May 12th on a month's leave of absence, upon expiration of which he is relieved from assignment, duty and temporary rank at this station and assigned to Wright Field. Major Walker has been here since June 15, 1932, coming from the Hawaiian Department, and performed the duty of Chief Engineering Officer. The personnel of this station will miss these old friends exceedingly, and wish them every success and good fortune in their new activity.

Capt. J.M. Hargreaves, M.C., of Randolph Field, attended the recent convention of the American Medical Association at Kansas City, Mo., to demonstrate technical medical equipment and practices in Air Corps medical examination of personnel, making the journey by airplane piloted by Staff Sgt. T.K. Dorsett, with Pvt. C.B. Hetherington as mechanic, both of the 3d Transport Squadron of this Depot.

Capt. T.M. Bolen and Lieut. D.C. Strother, 20th Pursuit Group, Barksdale Field, were on temporary duty here May 11th to 19th, assisting in running tests on engines overhauled for that station.

Mr. Paul W. Puhl, Principal of the Columbian Preparatory School, Washington, D.C., was a visitor here on May 8th.

Major Morris Berman, Executive Officer, and Major R.V. Ignico, Depot Supply Officer, were on temporary duty, May 10-17, at Wright Field, conferring on Air Corps supply matters.

Capt. D.J. Ellinger, Depot Operations Officer, and Capt. M.H. Warren, 3rd Transport Squadron Supply Officer and Assistant Depot Supply Officer, ferried two A-12 planes to the Rockwell Air Depot for shipment to the Hawaiian Air Depot, and conferred on Air Corps supply matters. Capt. Warren made a visit of several days to the plant of the Douglas Aircraft Co., Santa Monica, Calif., to observe the production of new planes and special equipment at that factory.

During April, the Engineering Department overhauled 26 airplanes and 77 engines and repaired 15 planes and 32 engines.

Marshall Field, Fort Riley, Kansas, May 22nd.

The spring rains have commenced, the creeks and all the Kansas River's tributaries were swollen with water to the tops of the banks, causing it to rise to an alarming extent, and for a while we were again on the verge of evacuating Marshall Field. The rains, however, have subsided, and we do not anticipate a flood this month. The river has been steadily gnawing on the river bank adjacent to the airdrome and, consequently, the erosion has brought the water to the edge of our 25,000-gallon capacity gas tank. The Post Quartermaster dumped a large amount of rock in the threatened area, preventing the river from washing it away. This is merely a temporary expedient, and the tank is still endangered due to its proximity to the river.

Recently, Capt. Laughinghouse, after being held up on account of very unfavorable weather, was finally able to get a fair day to ferry one of our O-25C airplanes to the Fairfield Air

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Depot, and take delivery on a BT-2BI assigned this station.

The annual aircraft allotment table has been received assigning O-46A's to this station and, according to the priority on the contract, we will in all probability receive them during the current year.

Luke Field T.H., May 4th.

23rd Bombardment Squadron: For several weeks operations were conducted minus the help of four officers of the organization, Capts. Robert D. Johnston, Maurice C. Bisson, 1st Lieut. Byram A. Bunch and 2nd Lt. Dale E. Altman, who were at the Kilauea Military Camp enjoying the tang of mountain atmosphere.

First Lieut. David N. "Chip" Crickets was recently seen leaving the Honolulu court house with his fiancée on one arm and the fatal roll of paper under the other.

On April 21st the Squadron held an Aloha Dinner for members of the Squadron returning to the mainland. Those making farewell appearances were Tech. Sgt. Michael E. Connelly, Staff Sgt. Emerson R. Johnson, Privts. Albert O. Horne, James Monroe, Martin J. Costello, Guy M. Kinsley, Alexander S. King and David N. Potts.

50th Observation Squadron: The pilots are making a gallant effort to maintain their identity as observers, but are waging a losing battle. The dice would seem to be loaded, as it were, for in addition to being equipped with "pea-shooters," we are about to be equipped with Martin B-12's. It is possible that we may yet become known as the 50th Composite Squadron.

The Squadron regrets the loss of Lieut. Julian M. Chappell, who left on the last transport for Fort Sill, Okla. We all hope to see this popular officer again soon and to learn about Oklahoma's "wild" Indians, jackrabbits and balloons.

Most of the boys report that they haven't quite enough hands or eyes. It seems that it takes a bit of sleight of hand to fly the ship, read a panel on the ground, copy the message on a fluttering piece of paper, and decode it all at one and the same time. However, one of the "hot-shots" felt that he was getting pretty good at legerdemain and wanted to take up a K-3 camera in his lap and do a bit of photo work. On being questioned as to how he would snap an oblique, he confessed he had planned to do a three eight roll and click the shutter.

4th Observation Squadron: The last transport left quite a dent in the duty roster by taking Privts. Neusbaum, Taylor, Yates and Dick, for whom no replacements have been received. On the next transport the Squadron will lose one of its oldest and most loyal Non-Coms. - Master Sgt. E.G. Costello, who has been ordered to Bolling Field. He has coached the Squadron Engineering Section for the past nine years. We wish him every success at his new station.

The first Squadron Aloha Dinner in several years was a huge success and was attended by Lieut.-Colonel Asa N. Duncan and staff. Col. Duncan presented to the Squadron the 1935-36 season championship basketball and baseball trophies.

72nd Bombardment Squadron: A picnic was held at Fort Weaver on May 1st to celebrate Organization Day. Boats left Luke Field at 8:30 and 9:30 a.m. for the Fort Weaver dock, and thence by train to the beach. Before lunch the officers won a game of indoor baseball from the privates, who later succeeded in winning from the noncommissioned officers. Therefore, from mathematical deduction, the officers are the champs. In the afternoon, prizes were offered for the winners of various games. A good time was enjoyed by all until the tragic accident which befell Private, 1st Class, Richard C. Gorman while returning home. He was walking from one flat car to another when he stepped on a tent pole, causing him to lose his balance and fall between the wheels of the train. An operation was performed at Tripler Hospital in an effort to save his life, but he died the following morning. The 72nd lost in Private Gorman an excellent soldier and a true friend to all who knew him.

Hawaiian Air Depot, Luke Field, T.H.

Personnel at this Depot have noticed with interest that Captain Ralph B. Walker has been ordered from San Antonio to duty with the Materiel Division. He will make the third officer at Wright Field who formerly held the position of Engineering Officer at this Depot. Major Edwin R. Page and Capt. Carl F. Greene are the other two officers who enjoyed the Hawaiian climate but who are now inured once again to the vagaries of Dayton weather. We wonder if these three ever get together and discuss the Hawaiian situation.

Which reminds us of the fact that several civilians who formerly worked with this Depot are now spread around the Mainland Depots. The following come to mind: David L. McClellan and Dick Harrison, now with the Field Service Section; Walter Chandler, now at Fairfield; Mr. Lorain, now at Rockwell; J.C. Vaughn, Stubbins, Elmer J. Haig, William Messick and Harry Williams, all now at the San Antonio Air Depot.

Former Mainland Depot personnel who are now "kamainas of Hawaii" include: Dusty Miller, Charles Fasig, William Cross, Walter Hatfield, Clarence Bay, James Baity, from the Fairfield Air Depot; Fred Wood, John Biard, Hardison Roberson and E. Whitaker Hailey, from the San Antonio Air Depot; B.M. Johnson from the Rockwell Air Depot, and Pat Holohan and Roscoe Coning, from the Field Service Section.

Lieut.-Colonel Frank H. Pritchard, Commanding Officer of this Depot, accompanied by his family, departed for the Mainland on the USAT REPUBLIC, sailing April 23rd, for his new station at Scott Field, Ill., after an all too brief assignment as Depot Commander. With him went the best wishes and Aloha of the entire Depot.

Five A-12 airplanes, which were flying at mainland stations in March, were received by the Depot, assembled, and were flying by the end of April, which is some sort of a speed record for the transfer of airplanes to an overseas station by boat.

In addition to their Depot duties, enlisted men here have recently been concentrating on what used to be called "Infantry work" and

practicing their "squads right" and "squads left" in preparation for an inspection by the Department Commander.

The Worrying Department of this Depot, which is probably similar to that in all depots, has been working overtime lately. The primary worry, about which nothing can be done, is the discovery that both Memorial Day and Independence Day fall on Saturday this year. Some agitation was felt about Labor Day also until it was brought to mind that Labor Day always falls on Monday.

Worry #2 is the traffic problem between the Pearl Harbor Coal Dock and Honolulu. Traffic is extremely heavy at the present time and the worry is caused by thoughts of what it will be when construction really gets under way at the new Hickam Field. Contractors and personnel working at Hickam will utilize the same road that Depot personnel use, and we are all practicing up on truck dodging at the present time.

Worry #3 concerns the new law recently passed by Congress covering civilian leaves. Pending the receipt of Departmental Regulations, as required by this law, the chief Worriers are getting gray hairs wondering if any consideration will be given to the Hawaiian climate when the new hours are put into effect.

In addition to the assembly of aircraft recently received, this Depot completed four major overhauls of aircraft and twelve major overhauls of engines during April.

Langley Field, Va., May 12th.

35th Pursuit Squadron: Recent rendezvous and assembly problems held by the 35th Pursuit Squadron have called for accurate navigation and timing on the part of the pilots. Some of the smallest towns in the vicinity of Langley were used for route and rendezvous points, and their existence is still a matter of doubt to some of the Squadron's navigation experts.

The number of bachelors among the 35th's pilots has sadly decreased in recent months, leaving only two "stout fellahs" unaffected by the questionable theory that two can live as cheaply as one.

In answer to a challenge by the officers of the 8th Pursuit Group Headquarters, our Squadron officers lost a soft ball game in spite of two homers by Lt. Garrison, the brilliant infielder by Major "Abie" Waller and the fact that we furnished our own umpire, Capt. Bud Peaslee. Bud will have to get some new specs.

37th Attack Squadron: Two ships of the 37th cooperating with the 16th Observation Squadron made simulated attacks on the sound apparatus at Fort Monroe for the Coast Artillery School during the first week in May. The demonstration was to show to what extent the sound apparatus was effective on low flying ships.

Major Ned Schramm and Captain Stuart McLennan are in their second week of the Chemical Warfare School at Edgewood Arsenal, Md.

8th Pursuit Group: At 5:30 a.m., May 11th, the Eighth Pursuit Group, GHQ Air Force, entered into a period of "Dawn Patrol Gunnery" to enable all officers, flying cadets and enlisted pilots who have not previously done so to qualify in ground gunnery.

Rockwell Air Depot, Calif., May 13th.

Captain Joseph C.C. Denniston, with crew chief, Pvt. Warren B. Brookins, ferried another OA-4 airplane from Mitchel Field to the Depot for repairs and the installation of a new wing.

Captain David W. Goodrich, commanding the Organized Reserve Airdrome at Salt Lake City, brought in a PT-3A to the Depot for engine change.

Engineering production for April lists 43 engine and 7 airplane overhauls. This is the highest month for engine overhauls for the present fiscal year.

Colonel Jacob W.S. Wuest, Commanding Officer, departed April 29th, enroute to the Materiel Division, for detached service. Upon the completion of this duty he departed on leave for a month and 15 days. Major S.J. Idzorek is in command of the Depot during the absence of Col. Wuest.

Colonel Henry C. Merriam, I.G.D., arrived at the Rockwell Air Depot April 18th, and departed April 20th, after making annual inspection of the Depot.

Captain Gilbert Hayden, Signal Corps, Officer in Charge Radio Repair and Maintenance Section, departed May 11th for the Northrup Aviation Plant for a few days' temporary duty in connection with radio installations on the new aircraft being purchased for the Army Air Corps.

Mr. M.C. Demler, Service Representative for the Lycoming Manufacturing Company, Williamsport, Pa., was at the Depot recently looking over the Smith-Lycoming controllable propeller installations in this vicinity.

Mr. A.A. Berger, Civil Service, Sheetmetal Worker, formerly with the Depot, stopped enroute from the Panama Air Depot to the Hawaiian Air Depot. Mr. Berger was in the Canal Zone for the past five years and says he enjoyed his sojourn there.

Barksdale Field, Shreveport, La., May 1st.

On April 10th, Lieut. "Grassy" Hinton was forced to leave his P-26A airplane by the parachute route. The engine trouble which necessitated this action resulted in an inspection of all P-26 installations and grounded practically all these planes. The P-26's are still restrained to local flying pending improvement of the impeller system.

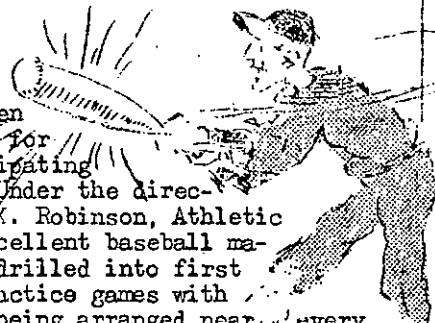
April 17th was the occasion of a visit by the British Attache for Air, Colonel E.T.B. Howe and his staff. An aerial review was tendered him.

Although no Catholic Chaplain is assigned to the field, one is fortunately stationed in a nearby CCC district and makes occasional visits to Barksdale, conducting services at these times. An altar was constructed by enlisted men of the post, thus testifying to the interest taken by the members of this command in the Catholic faith.

On May 18th, five officers of the Corps of Engineers came to Wright Field for a conference on mapping with stereoscopic plotting instruments, viz: Colonels F.C. Wilby, R.G. Powell, Richard Park, Lieut.-Cols. B.O. Elliott and W.E.R. Covell.

Bolling Field:

The recently organized baseball team has been hard at practice for two weeks, anticipating a busy season. Under the direction of Capt. S.K. Robinson, Athletic Officer, some excellent baseball material is being drilled into first class shape. Practice games with local nines are being arranged nearly every Saturday and Sunday. In the soft-ball league a dark horse comes to the front in the shape of a team composed of the post officers, who are apparently remembering, swiftly and surely, anything they might have forgotten about the game and are turning out a fast, hard-hitting team.

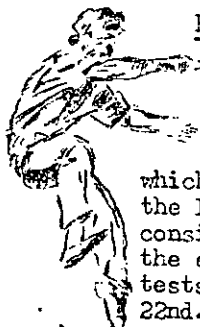


Langley Field, Va.:

By winning their last game in the Langley Field Inter-Squadron Baseball League from the 58th Service Squadron, 4 to 2, the 8th Pursuit Group team brings home the 'bacon' for the second consecutive year, in the nature of Langley Field's most decorative Baseball Trophy in years, donated by the Northrop Sport Shop, Norfolk, Va. The league was composed of five teams, each playing the other twice during the season. The Pursuit Group team asserted their superiority by winning 7 games and losing one, the lost game going to the GHQ 2nd Wing Hqrs. team, 3 to 1. The second game on the schedule with that team was played two days later, and with the true spirit of 'Attack and Conquer,' the Pursuiters shellacked their opponents to the tune of 17 to 0 at the fifth inning, when the 2nd Wing boys gave up and hollered quits.

Fisher, Thomas and Brown divided honors on the mound, while Kirkman was behind the plate in all but the first game, which was caught by Ferrell, who was lost by discharge.

The 8th Pursuit Group team was composed of 1 officer and enlisted men from the Hqrs. Det., 33rd, 35th, 36th and 37th Squadrons.



Hamilton Field:

To the victors belong the spoils! After a day of athletic competition between officers of the 11th and 31st Bombardment Squadrons, in which keen rivalry was the keynote, the lucky 31st had the privilege of considering themselves victors over the erstwhile mighty 11th. The contests mentioned took place on April 22nd. Skeet and Badminton in the morning hours and soft ball in the afternoon constituted the program of the day. The officers representing the 31st Squadron made a clean sweep of the morning's activities, the Skeet high-gun man being Lieut. Leo Mundell. Bitterly contested as were the Badminton games, the 31st Squadron managed to vanquish their rivals. However, the 11th garnered a few laurels in the afternoon session, taking the soft ball game, 12 to 6.

As a direct result of this meet, a team composed of the officers from the 69th, 70th Squadrons, Hqrs. 7th Bombardment Group and the Station Complement, sublimely confident under the moniker "Workers," challenged the "Drones" from the four tactical squadrons to take up the cudgels in the same sports. The "Workers" took the Badminton and Skeet events in the A.M. Capt. A.V.P. Anderson breaking 24 birds, closely followed by Col. Tinker with a score of 22.

However, revenge came to the "Drones" later in the day when they took the "Workers" into camp in soft ball. Scoring at will, the "Drones," captained by Major Carlyle Ridenour, swamped the "Workers," captained by Lieut.-Col. Tinker, by the score of 21-6. The keen interest displayed and the advantages reaped from these sports assure the continuation of athletic events among the officers at Hamilton Field.

France Field, Panama Canal Zone:

The officers and enlisted men are looking forward to the completion of the two new squash courts now under construction. Healthy bodies and bulging muscles are anticipated. With the approach of the rainy season, squash will take the place of tennis.

The basketball season is fast approaching, so the France Field cagers may be seen every afternoon in the Post Gymnasium being whipped into shape in the capable hands of Lt. Robin B. Epler. Almost all of the men on last year's team will be available this season. Everyone at France Field is looking forward in anticipation of the cagers capturing the Trophy which eluded them last year by such a narrow margin.

Not to be outdone, the swimmers are getting into shape for the coming Department meets in June. Lieuts. J.D. Underhill and William Davis will attempt to coach the mermen to victory. The boxing team is also dusting off their gloves for action in the near future.

Luke Field, T.H.

At the preliminary Sector Track Meet recently, Luke Field qualified in nine events. Three athletes who qualified were Lt. John G. Armstrong, and Pvt. Robert Gallup, 23d Squadron, and Corp. Dixon of the 72nd Sqdn.

Langley Field, Va.

In the basketball realm, the inter-squadron league provides much entertainment and supplies a spirit of friendly rivalry which does not die with the end of the inter-squadron season, but follows the cream of the squadron teams which are absorbed in the post team in their lengthy schedule with all of the nearby colleges.

Several Corps Area boxing champions have "blossomed" from the Langley AA squads, and quite a few of the pugilists have made names for themselves in and about Norfolk and Richmond.

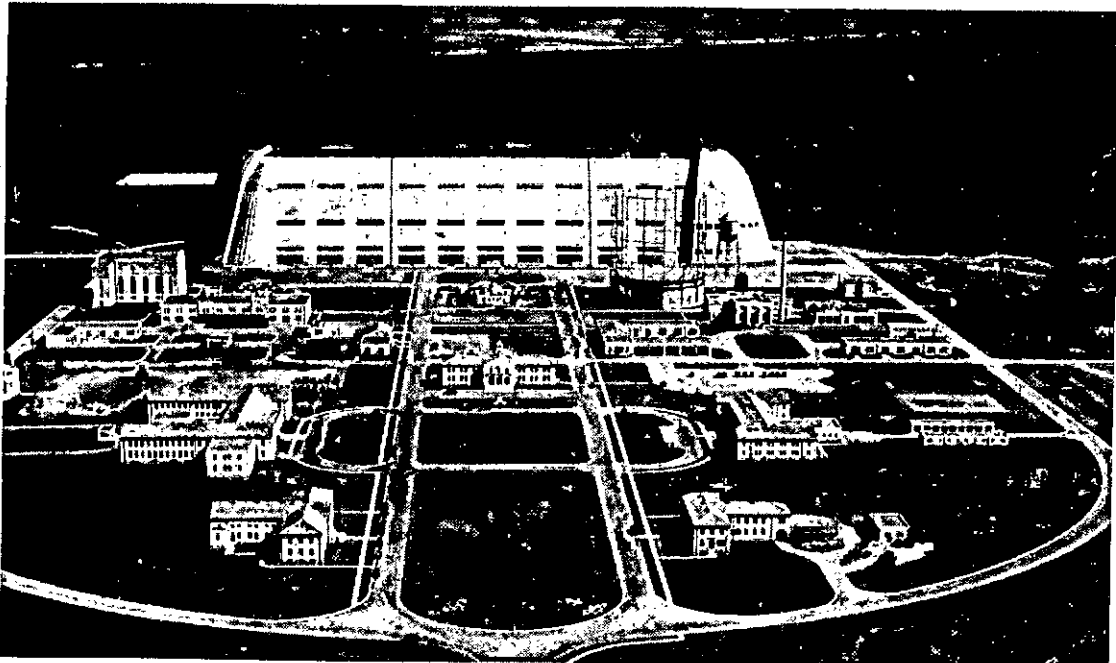
Swimming and tennis are also gaining more recognition at Langley Field. Last winter the swimming team met several college freshmen teams and made fair showings despite lack of proper coaching and training. The tennis teams are picking up competition among the clubs around Newport News and Hampton, and the early spring here this year points to a busy season for the racket wielders.



NEWS

LETTER

Issued by the Chief of the Air Corps
Washington, D. C.

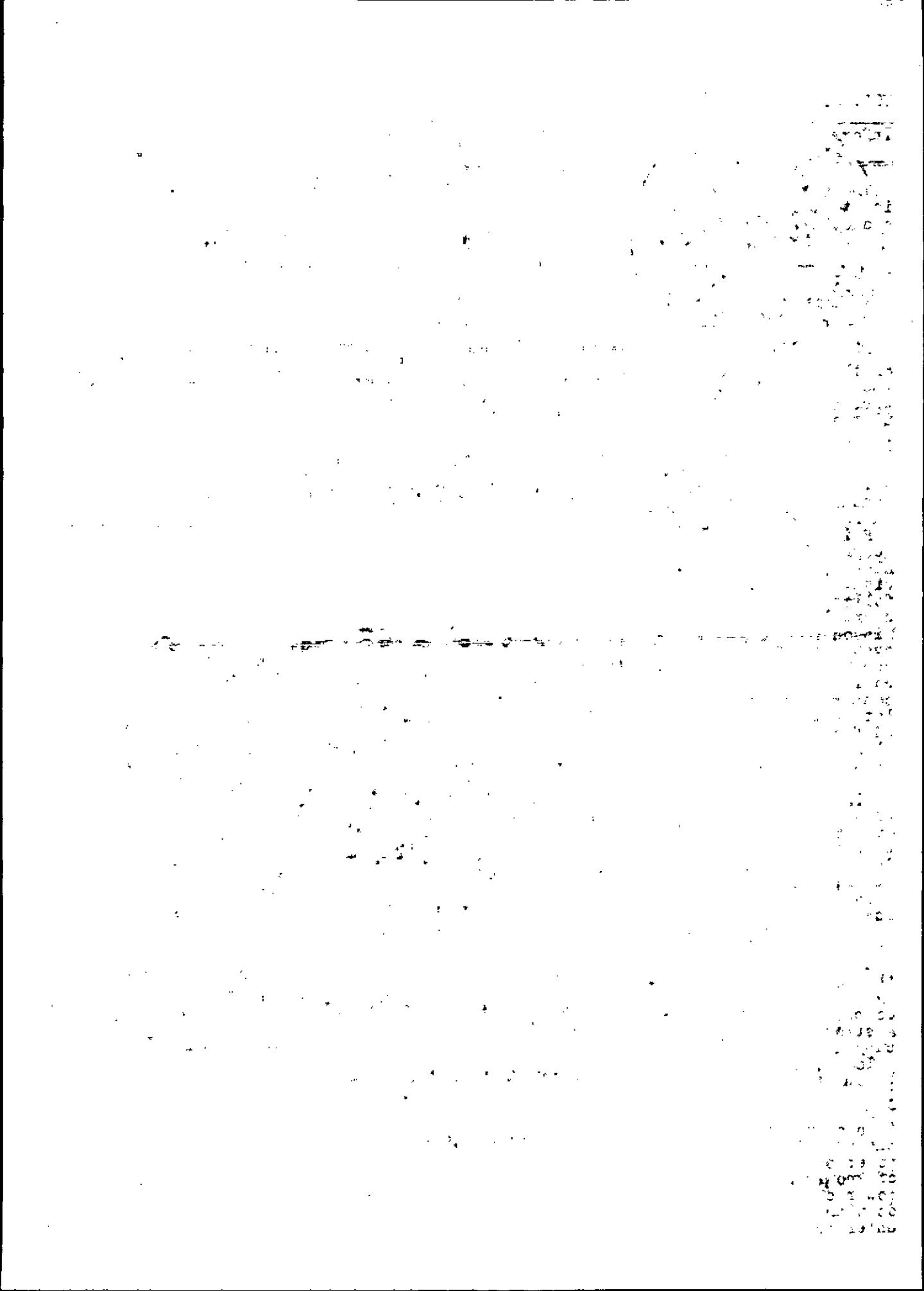


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A V I A T I O N P R E P A R E D N E S S

DURING the progress of "National Defense Week" at Spokane, Wash., recently, Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, flew to the West Coast and, addressing a meeting of the Northwest Aviation Planning Council, congratulated that body on taking steps towards securing aviation development in accordance with a definite, well thought out plan.

The substance of some of the subjects touched upon by General Arnold in his address is given below.

Pointing out that the Northwest is geographically the aerial gateway to Alaska, he stated that nature has provided two excellent aerial routes to follow towards the north. With the sparsely populated plains west of the Missouri and the great Rocky Mountain system intervening between the preponderating mass of population concentrated in the eastern centers of this country and the Pacific Northwest, this latter territory might well be considered, from a strategic standpoint, a far-flung political entity of this tremendous Republic.

Progressive changes in the means of waging warfare at great distances over what have heretofore seemed to be insurmountable difficulties of ocean have tended to make the security of the West Coast a major problem for our General Staff. Those who work with globes and great circle charts know that the broad oceanic expanse becomes a relatively short distance when traveled along great circle routes.

Alaska is the key to the defense of the Northwest and the key that logically falls into the keeping of the Air Corps. Interior Alaska is a place that a strong aviation force might seize, occupy and hold for a long period of time.

Today, as always since civilization began, there are many rumors of war coming across the seas. Fortunately, so far these rumors have not developed into actualities. It is possible that the threat from the air - the unknown power of bombing squadrons and the lack of knowledge as to the destructive power of an air attack - has something to do with the reluctance of nations to enter into war.

Our war plans must be made to conform to the best combination of war instruments that might be brought against us. We must assume that what we have others also may have. It would be false security to assume that our engineers or factories are better than those of other nations.

Our air force in the National Defense scheme must be mobile in order to be effective, and must be able to span the territory from coast to coast in less than 24 hours. Bombardment groups should be ready to move from one base to another to locate themselves in strategic positions for striking. There must be many prepared airdromes for dispersing our air force so that our planes will not be caught massed together. Supply bases and bomb dumps should be located at points where they will be most needed.

The procurement of 500 new planes from 1937 funds, supplemented by 500 more planes the following year, will bring us nearer to our authorized air-plane strength, but we will not have the men to fly them unless our officer strength is increased.

The day of having a pilot go out and fly any type of plane is a thing of the past. The newer type planes have made cow pasture landing fields of bygone days absolutely out of the question.

In our base areas we must have prepared airports for the use of our air force. Those fields used in time of peace for private flying and commercial operations become in time of emergency advance bases, reloading and servicing points and fields upon which the masses of planes can be dispersed for protection.

For many years commercial and military air developments have progressed hand in hand, and the great work of aviation development now being undertaken by the Northwest Aviation Planning Council is a most important step in conformity with that policy. An effective air force does not grow up overnight. It is brought into being by careful planning, strict training, well thought out engineering, experiments and development, well managed mass production of planes and equipment and daily operation of tactical units in conformity with approved tactical principles. These things

are now being done to create an air force which can take its place as an effective part of our National Defense machine.

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CITIZENS OF NORTHWEST SEE NEW PLANES

Lieut. Colonel C.L. Tinker, commanding the 7th Bombardment Group at Hamilton Field, San Rafael, Calif., flew to Felts Field, Spokane, Wash., to attend the National Defense Week Demonstration held there May 29th, 30th and 31st, and to place on exhibition the new Martin B-10B Bomber to enable people from Spokane and the Pacific Northwest to get an idea of what the Army Air Corps has in the way of modern equipment to contribute to our National Defense.

On his return trip Col. Tinker flew to Seattle to visit the Boeing Aircraft factory and to view some of the new and latest developments in the line of Bombers being constructed for the Army Air Corps.

The National Defense Demonstration, staged by the National Guard air units from all over the United States, and the Infantry, Artillery and smaller ground units from the States of Washington, Idaho and Montana, was held on the spacious and up-to-date Felts Field in Spokane. Some forty National Guard airplanes were gathered there from States as far distant as Massachusetts and Tennessee, and together with the ground forces from the Pacific Northwest, placed before the people of Spokane a three-day demonstration of what our National Guard defense consists of, what it has accomplished with a limited amount of equipment and time for training, this in order to give the public some insight into what is needed in the future to insure for this country adequate and proper military defense. While at Felts Field, all the units were under the command of Colonel Aston of Spokane.

The Regular Army Air Corps contributed its share to the demonstration by sending two of the latest Pursuit type airplanes from Selfridge Field, Mich.; a Boeing P-26 A and a Consolidated PB-2, flown by Lieut. J.O. Neal and Captain Walter E. Todd, respectively. Captain Leroy A. Walthal came from Barksdale Field, La., in one of the Air Corps' latest Attack planes, a Northrop A-17. In addition to these modern fighting planes, there were Martin Bomber flown by Col. Tinker, and the new Observation plane, the Douglas O-46A, from Wright Field, Dayton, Ohio. All these planes were new to the eyes of the people in the Northwest, and the Attack plane had never before been exhibited to the public in any part of the country.

On Friday, May 29th, the National Guard aviation units put on a demonstra-

tion of their work in the air, and broadcasted from their planes in the air to the crowd, through the public address system, to keep those not well versed in air tactics posted on each maneuver. On the following day, the ground troops of the National Guard from Washington and Idaho staged a sham battle with some of the modern equipment of our Infantry and Artillery being brought into play. On May 31st, the combined forces of air and ground took part and demonstrated to the public just how the airplane will act as the eyes of the Army during actual hostilities. New motorized units of 75-millimeter guns were rolled onto the field, set up, trained, loaded and fired. Latest type of machine guns were wheeled into position on the sham field of battle and fired with their characteristic rat-tat-tat-tat. Trench mortars and one-pounders were used, and machine gun and small-bomb attacks were made on ground troops from low flying attack planes. An exhibition of the adjustment of Artillery fire by airplanes flying over the target and reporting to the batteries by radio was given the spectators through the public address system, and Captain Claude Owen, of the 41st Division Aviation, Washington National Guard, gave a demonstration of dive bombing with 50-pound aerial bombs. Brigadier General Henry H. Arnold, flying a B-10B of the 7th Bombardment Group, topped the list of notables who were present for the week-end maneuvers and the defense and aviation meetings which were held in the beautiful Davenport Hotel in Spokane. Representatives of the Department of Commerce, prominent Airline officials, and many important figures in the aviation industry in the United States were present to attend the Northwest Aviation Planning Council Meeting in Spokane on May 28th and 29th.

The entire Defense Demonstration proved to be a big success, and it was felt that the public had been given something which would make them conscious of the fact that this country of ours needs a bigger and better system of National Defense, backed by each individual in spirit and organized by the country as a whole.

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Air Corps officers under orders to report July 1, 1936, to Kelly Field, Texas, for duty, are -

Captains Leland R. Hewitt and George M. Palmer, from the Command and General Staff School, Fort Leavenworth, Kansas; 1st Lieut. John C. Covington from Fort Bragg, N.C.;

1st Lieuts. John H. Ives and Troup Miller, Jr., from Langley Field, Va.

Captains Robert S. Macrum, Brooks Field, and Philo G. Meisenholder, Barksdale Field, are under orders to attend the Harvard Graduate School of Business Administration, Cambridge, Mass. They are relieved from temporary rank in September.

JUNGLE EMERGENCY LANDING KITS
By the Scott Field Correspondent

THE Army Air Corps is always endeavoring to advance flying safety and to lessen the flying risks of its personnel to a minimum. In spite of the fact that all Air Corps pilots are carefully selected, highly trained men, and despite the many precautions taken, forced landings sometimes occur. Although the Army Air Corps is on the alert for unforeseen weather changes and radios the latest information to all pilots in the air, they are sometimes trapped in predicaments from which there is no escaping a forced landing.

In the tropics, Army pilots are required to fly on routine work over jungle regions where impassable growths of vines and continuous forests of huge trees make airplane landings extremely hazardous. In the event of forced landings over such territory, the pilots and observers are usually able to escape with minor injuries by resorting to their parachutes. This is usually only the beginning of their troubles. The real problem is to reach civilization. Just imagine a man forcing a passage through the dense foliage and shrubbery of the jungles - fighting every inch of the way. Then add to the struggle against nature injuries which are untreated and are open to poisons and infections; hunger and no food to appease it; thirst, and only poisonous, contaminated water to drink; mosquitoes and many other insects biting and stinging thru torn clothing; wild animals and reptiles hungering for food, human or otherwise; and then, the inability to tell one direction from another in the shadowed twilight of the dense jungles. This is the situation facing the occupants of airplanes who encounter trouble while flying over the tropical jungles.

After several sad experiences by the Army Air Corps in Panama, it was found that pilots must carry the cure-all with them in a small bag when they jump from their planes over dangerous jungles. Experiences later proved that in most cases occupants of planes became separated from their airplanes and their emergency supplies. A new idea had to be worked out in connection with these enforced jumps, one which insured that the emergency supplies went with the jumpers instead of with the plane, which in most cases could not be found by the men after they had landed.

The new emergency kit is an ingenious method of enclosing the necessary articles in the seat of the parachute. This prevents flyers from being separated from their emergency equipment, as the parachute container goes down attached to the parachute pack. To accomplish this, the air-inflated cushion of

the parachute is removed and a pack exactly the same size is inserted in its place. This pack, now known as the "Jungle Emergency Landing Kit," is so fabricated that it acts as a cushion for the pilot when he is seated in the airplane, the contents thereof not being damaged by the pilot's weight.

The contents of this kit are a standard Army Engineer Corps prismatic compass, the best instrument of its kind made; a bolo knife (machette) which is heavier and wider than the bayonet which it resembles; a standard Army mosquito head-net which will protect the man's head and neck from insect bites; a waterproof box filled with matches; another waterproof matchbox containing a one-fourth ounce bottle of iodine; a small bottle of quinine to be used as a preventative for fever; a standard Army caliber .45 pistol with ammunition; and two pounds of emergency rations enclosed in a moisture-proof airtight container.

With this equipment a pilot who is forced to land in any jungle region is made as safe as possible from mauling animals, pestilent insects, hunger, sickness, unprotected wounds and scratches, loss of direction and, lastly, he has the necessary equipment and material to cut a passage through the undergrowths in the jungle.

The jungle emergency landing kits are to be standard equipment for all pilots who are required to make flights over jungle country. In Panama and in the Philippines such flights are of everyday occurrence and, fortunately, forced landings are few and far between. But just as a precaution, all pilots and observers will be required to be equipped with these safety kits. The cost of the kit is extremely small, but its worth in an emergency where a life is concerned cannot be calculated. The Army Air Corps considers all safety devices in this same light - they are worth their weight in gold.

The Scott Field Engineering Department recently manufactured 50 of these jungle emergency landing kits.

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First Lieut. H. F. Gregory, Air Corps, stationed at Fort Sill, Okla., who was detailed on detached service at Langley Field, Va., and Fort Bragg, N.C., for service test of the Kellett Auto-Gyro, came home on a breathless trip between hops in the "flying windmill." He unloaded enough information about the unusual craft to make the pilots at Fort Sill eager to handle the stick and try out its performance, especially in cooperation with Field Artillery.

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First Lieuts. Robert K. Taylor, Randolph Field, and Archibald J. Hanna, Langley Field, were detailed to the Technical School, Chanute Field, as students, the former to pursue the photographic course, and the latter the Communications Course.

The San Francisco Bay Region Junior Birdmen of America were entertained in true Air Corps style at Hamilton Field, San Rafael, Calif., on Sunday, May 24th. Young designers and builders of model aircraft were allowed an opportunity to flight test their own special creations.

Notable among the models was one powered with a miniature gasoline engine and controlled from the ground by means of a single long, light, wire through which both rudder and elevator control were manipulated. Lateral control could not be effected. The only difficulty was that this particular model persisted in ground looping on the take-off due to a defective tail wheel. Another model made use of the vane-rotor principle in order to give it lift. The rotor was mounted on an axis parallel to what would have been the axis of a wing. Like an autogyro, the rotor was not power driven during flight, and it flew successfully. There were many sorts of gliders and carefully constructed, rubber band-driven models.

Lieut.-Colonel Clarence L. Tinker, the Commanding Officer of the 7th Bombardment Group, ordered the units under his command to demonstrate various squadron tactical and training maneuvers for the benefit of the Junior Birdmen of America.

The 88th Observation Squadron, using one of its O-27's, conducted simulated aerial gunnery practice, while Captain Kelly, piloting an O-35, made simulated aerial gunnery attacks on the target as it passed over the field.

Varied tactical and show formations were demonstrated by the 11th Bombardment Squadron with a 9-plane formation. This Squadron, now equipped with the new B-10B's, and under the command of Major Ridenour, has developed a regular routine for just such occasions, and pilots of the unit execute the changes from one formation to the next with precision and rapidity. The demonstration formation was led by Major Ridenour, with Captains Harding and Lyon leading the second and third elements. The general routine consists in passing over the field first in javelin-up formation, that is, a column of elements, then, shortly thereafter, the squadron starts a fast 180 degree turn, just before the conclusion of which is given the command of execution for the next maneuver.

Just after the pass-over of the field is made each time, a signal from the leader directs the Squadron back into javelin-up, and thus it is prepared for the next order. In rapid succession the squadron went through a series of formations: javelin-up, squadron wedge, echelon of elements, echelon of individual planes, squadron diamond, spear head, javelin-down, and finally a series of staggered-element turns, elements

crossing over on each turn. The finale was a low-altitude pass-over of the field as though in review. The real feature of such maneuvers to one who is used to watching formation flying is not the closeness of individual planes nor the fact that such patterns can be flown, but it is the uniformity of the patterns coupled with the accuracy and speed with which a unit can change from one formation to another as the 11th Squadron is able to do.

The squadron commander of the 9th Bombardment Squadron, Major Davies, operated the bombsight for the individual dropping of six bombs on the water target just off the edge of the field in the shallow water of the bay. Spectators were impressed with the accuracy of modern bombing equipment. Lieut. King led a three-plane element of the 9th Squadron B-12's in a simulated attack on the field itself.

The 31st Bombardment Squadron, temporarily stationed at Mather Field for bombing practice, did not participate in the day's maneuvers.

The 7th Group Armament Section had on exhibition bombs of all sizes, machine guns, and other armament equipment. An actual explanation and demonstration of the operation and control of the bomb racks was given on the Martin B-12 which was on display. Displays were presented by the 88th Observation Squadron, Photo Section and the Parachute Department. The day's activities were concluded by a parachute jump by Private, 1st Class, C.R. Chain of the 69th Service Squadron.

The Junior Birdmen had a chance to demonstrate their prowess as airplane designers and an opportunity to see the Air Corps in action. All in all, it was a very satisfactory day.

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ASSIGNMENT OF ADV. FLYING SCHOOL GRADUATES

Upon the completion of their present course of instruction at the Air Corps Advanced Flying School, Kelly Field, Texas, the following named Air Corps officers are under orders to report for duty at the stations designated:

Captain Reginald R. Gillespie to Chanute Field, Rantoul, Ill.

Captain Wilfred J. Paul to Hamilton Field for duty with GHQ Air Force.

Captain John G. Salsman and 1st Lieut. Ralph E. Holmes to Brooks Field, Texas, for duty with the 12th Observation Group.

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Effective July 1, 1936, the following named Air Corps officers, now on duty as students at the California Institute of Technology, Pasadena, Calif., are assigned to stations, as follows:

To March Field, Calif.: Captain Perry Wainer.

To Hamilton Field, Calif.: 1st Lieut. Harold H. Bassett.

To Barksdale Field, La.: 1st Lieut. Leon W. Johnson.

NAVIGATION TRAINING, 7TH BOMB. GROUP

There are two projects in navigation in the 7th Bombardment Group which as yet have not had a thorough test but which, it is believed, will prove interesting. The first of these is the plotting of ships' positions at sea by weather reports and the second is the plotting of airplane positions by means of goniometric stations.

Concerning the first, weather reports are transmitted by ships at sea at zero hours and at twelve hours Greenwich Civil Time. These reports are received by the Department of Agriculture and sent out to all stations equipped with teletype to be entered on weather maps. When the report is decoded, the reporting vessels' names and their positions are determined. These positions are entered on a plotting sheet and, after a number have been plotted, the courses and speeds of the vessels may be determined. This data may be used for interception problems. The plotting setup has been made in the 7th Group, Hamilton Field, and the plottings indicate that very accurate data may be obtained.

No actual problems, using the above data, have been flown, due to the diverting of vessels from San Francisco, because of strikes, a quarterly load test and a concentration of the 1st Wing at Hamilton Field. It is expected, however, that in the near future the data obtained will be used constantly for interceptions.

The second project, that of using goniometric stations for plotting airplane positions, has also not been given a thorough test. Two goniometric stations were borrowed from the Coast Guard. One was set up at Fort Funston on the edge of San Francisco and the other at the Presidio of Monterey. This gives a base line of 73 nautical miles. The procedure used is as follows: When the radio operator in the navigation airplane finishes sending out the position report as given to him by the navigator, he then sends letters Q.T.E., meaning "What is my bearing with respect to you?" This is followed by his identification call letters. He then sends the letters "M.O." continuously for 45 seconds and ends with the letter "K." During the 45 seconds the letters "M.O." are being sent, the goniometric stations are being lined up on the navigation airplane, and when "K" is received the exact time and bearings are noted. This information is at once transmitted to Hamilton Field to the plotting room. The plotter has been tracking the airplane from the message received from the navigator. He plots the bearings as sent from the goniometric stations and they are checked for accuracy. If a

discrepancy occurs, it is checked with the navigator upon the arrival home of the airplane. All times used are synchronized prior to the mission with the time at Hamilton Field. Excellent results have been obtained from the station at Fort Funston, but the ones obtained from the station at the Presidio of Monterey have been poor, and it is believed, says the News Letter Correspondent, "that the calibration of this station is off. It is hoped that this will be remedied in the near future so this work with the goniometric stations can be combined with the interception of ships at sea."

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MISSOURI GUARDSMEN TO CAMP AT FORT RILEY

According to a press announcement, the 35th Division Aviation, Missouri National Guard, will begin its annual encampment at Fort Riley, Kansas, July 12th. The Division is composed of the 110th Observation Squadron, the 110th Photo Section and Medical Detachment. A total of 100 enlisted men and 20 officers will be taken to camp. Training will be conducted in aerial photography, engine and airplane maintenance and radio communications.

The Commanding Officer of the 35th Division Aviation is Major P.R. Love.

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HOW THE 33RD PURSUITERS TREAT NEWLYWEDS

First Lieut. Richard C. Weller, a member of the 33rd Pursuit Squadron, 8th Pursuit Group, Langley Field, Va., upon his return to the post recently with his bride from a leave of absence, was met by the Squadron as a group. The bridegroom was made to drive his bride over the post in a specially constructed chariot. Donning a parachute, she climbed to the throne and was then handed a bludgeon. "With this bludgeon in her hands," says the News Letter Correspondent, "we expected no trouble from Richard. Everyone joined in the welcome, and a happy evening followed."

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BROOKS FIELD PILOTS IN MANEUVERS

A flight of three O-43A's left Brooks Field, Texas, on June 3rd for Maneuvers at Fort Leavenworth, Kansas, with Captain P.D. Coates in command. These maneuvers will be conducted June 4th to 19th, at which time the flight will go to Fort Sill, Okla., for maneuvers lasting from June 20th to 27th. Other members of the flight are Captains W.C. Dolan, R.S. Macrum, Lieuts. A.L. Guenther, S.R. Stewart and L.B. Hillsinger. A C-14 Transported crew men and equipment.

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Aerial gunnery was performed by the 20th Bombardment Squadron, Langley Field, Va., from March 26th to May 12th. During this period all assigned pilots qualified as Expert, as well as sufficient enlisted men to make up 13 combat crews of expert gunners.

V-7040, A.C.

GENERAL ANDREWS VISITS HAMILTON FIELD.

Major-General Frank M. Andrews, Commanding General of the GHQ Air Force, arrived at Hamilton Field, Calif., on May 17th in his huge Douglas Transport. With him were his brother, Major J.D. Andrews, Jr., of the Corps of Engineers, and Col. Robert Olds, Inspector of the GHQ Air Force. Another distinguished visitor for the week end was Brigadier-General H.B. Clagett, Commanding General of the 1st Wing, who flew from March Field in a Martin Bomber, accompanied by Capt. J.L. Loutzenheiser.

Early in the evening a reception was held at the Officers' Club for General Andrews and his party. "It was a pleasant gathering, for a great many of us had not seen the General since the GHQ Maneuvers in Florida last December," says the News Letter Correspondent. "General Andrews spent Sunday night in the visiting officers' quarters at the Officers' Club. Next morning at an early Squadron Commanders' meeting at Group Headquarters, the new promotion bill was discussed. Of more import to most of us was the discussion of the reorganization to take effect at the beginning of the new fiscal year. It really sounds good, and seems to be about what we've been asking for.

Following this meeting of the organization commanders, General Andrews and his party were escorted to an observation tower on the shore of San Pablo Bay by Lieut.-Colonel Tinker. Here an exhibition of high altitude bombing was conducted by the 11th Bombardment Squadron. Two flights of three Martin Bombers took off from Hamilton Field at 9:45 a.m. Each plane carried three 300-lb. bombs loaded with sand and four pounds of black powder. The planes climbed rapidly to 18,000 feet, and promptly at 10:30 a.m., the first flight of three planes passed over the water target and dropped its salvo of nine bombs in train with a perfect hit and dispersion, not one of the bombs falling more than 200 feet from the center of the target, and four bombs making direct hits.

Two minutes later, the second flight made its first approach. A flight salvo of three bombs was dropped and landed about 750 feet to the right of the target. On the second salvo, the center of impact was 250 feet right of the target, and on the last approach a direct hit was made on the target with the entire salvo.

On each approach only the bomb sight in the lead ship of each flight was operated, the wing men releasing bombs upon release of the leading plane. Capt. M.L. Harding was the bombardier in the first flight. Lieut. H.R. Volin bombed for the second flight.

General Andrews expressed himself as

very well pleased with the exhibition of high altitude bombing, and this was gratifying, for we of the 7th Bombardment Group can well appreciate words of respect relative to our bombing after the interest and enthusiasm we have put into this last intensive year of training.

It was with deep regret that later on this same Monday morning we should see General Andrews and his party leave Hamilton Field with Dayton, Ohio, as his destination. It was a pleasant week end, and we hope he comes again soon."

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TESTING APPARATUS GOES TO MEDICAL MEET

The testing equipment used at the School of Aviation Medicine at Randolph Field, Texas, was demonstrated during the week of May 14th in Kansas City, Mo., at the annual convention of the American Medical Association. Captain John M. Hargreaves, Flight Surgeon, made the demonstration. Captain Hargreaves and the equipment were flown to Kansas City in an Army transport piloted by Staff Sgt. T.K. Dorsett, of the 3rd Transport Squadron, Duncan Field, San Antonio, Texas.

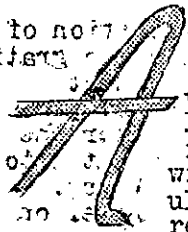
The apparatus included a combination setup of blind flying instruments which were perfected by Major W.C. Ocker, of Brooks Field; time reaction indicator; a depth perception instrument for testing the eyes of prospective pilots and the wobble meter used in testing the fatigue of the applicants for flying training.

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REUNION OF THE 141ST AERO SQUADRON

Members of the 141st Aero Squadron (Pursuit) a World War organization, are asked by Master Sergeant John Nelmar, of the 19th Bombardment Group Headquarters Detachment, March Field, Calif., to come to the Squadron Reunion at Dallas, Texas, on Labor Day. He states that war time members of the unit should advise Mr. Arthur D. Dodds, of Dallas, Texas, of their intentions concerning the meeting. If the ex-members are not able to come, he still wants to hear from them. Nelmar believes that the only other member still in active service is Master Sgt. William Pulliam, A.C.

Sergeant Nelmar states that the 141st was stationed in the Toul Sector during the war, taking part in several major engagements. Before the Squadron went into action, Sgt. Nelmar was transferred to the Intelligence Service as interpreter. He speaks Russian, Belgian and German. He was born in Finland when it was part of the Russian Empire. He traveled extensively as a seaman before entering the U.S. Army 20 years ago. He is now on duty with the 19th Bombardment Group as a technical inspector. During the World War he held the grade of Sergeant, 1st Class.



NUMBER of officers and enlisted men of the 15th Observation Squadron, Scott Field, Belleville, Ill., are carrying out cooperative missions with other branches of the Regular Army. Of the six missions recently assigned to the organization, three have been completed, two are now in progress and the last is scheduled to commence June 7th. These cooperative missions are of two kinds, one being radio communication with ground troops and the other towing targets for the machine gun and anti-aircraft batteries.

In the radio communications mission with the Cavalry School at Fort Riley, Kansas, Captain Leslie P. Holcomb and 2nd Lieut. Graeme Bond, with two enlisted radio men, flew two observation planes and acted as aerial scouts for the opposing Cavalry units in the mimic war. The pilots radioed information concerning the whereabouts of the "enemy" to the "friendly" radio ground station. This mission was completed in two 3-day periods, May 14th-16th and May 21st-23rd. The third scheduled mission of this type with the Cavalry School will be for a 15-day period, June 7th-23rd, with four pilots, four observers and eight radio and engine mechanics participating.

One officer, 2nd Lieut. Jack S. Hunt, and five enlisted men were at Fort Knox, Ky., May 1st-June 1st, towing 15-foot aerial targets for the 1st Mechanized Cavalry's .50 caliber machine gun anti-aircraft target practice.

An airplane with a red stocking-type

target trailing 2,500 feet behind the plane is flown at an altitude of 500 feet above the machine guns and at a speed of approximately 100 miles an hour. In the air, this tow target, which is three feet in diameter, presents an area equal in size to the fuselage of the Observation airplane.

On May 23rd, Major Wm. C. Goldsborough, Commanding Officer of the 15th Observation Squadron, completed a five-day tow target mission with the .50 caliber machine gun units of the 61st Coast Artillery (Anti-Aircraft) at Fort Sheridan, Illinois, their home station.

The tow target used for the three-inch anti-aircraft guns is the same type as that used with the machine guns, but it is approximately 30 feet long. This tow target is flown at an altitude of from 3,000 to 5,000 feet, depending upon the special instructions given to the airplane pilot. At night a white tow target is used. And in night practice, the anti-aircraft gunners use sound detectors, powerful searchlights and tracer bullets.

On May 26th, First Lieutenants Andrew Meulenberg and James F. Walsh and four enlisted men left Scott Field to join the 61st Coast Artillery for a 23-day tow target mission at Manitowoc, Wisconsin. The officers will pilot airplanes both during the day and night in towing aerial targets for the three-inch anti-aircraft gun batteries.

Later on this summer, the entire 15th Observation Squadron is scheduled to go to on extensive maneuvers with the Second Army at Camp Custer, Michigan. The officers and enlisted men will work under simulated war conditions.

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THE GOLDEN GATE BRIDGE - "CRISSY FIELD'S OWN."

By the Crissy Field Correspondent

In the near future Crissy Field will have the distinction of being located practically under the world's longest suspension bridge. The new bridge across the Golden Gate will be directly west of the field, but the ramp leading to the bridge passes so close to the back of Crissy Field barracks that, when completed, life at Crissy will assume very much the aspect of that in the regions near the New York "L."

"Our Bridge" is rapidly becoming a common expression at Crissy Field since the advent of the new Golden Gate Bridge. This span, when completed, will be one of the wonders of the world, and its steady growth has been a source of interest and pleasure to the personnel of the Presidio of San Francisco, and especially Crissy Field. The following pertinent facts pertaining to this immense structure will give the reader some idea of its size.

The Golden Gate Bridge is the longest and highest single span suspension bridge in the world. It will be 4200 feet across the main span, and from actual end to end it extends approximately 9,000 feet. The George Washington Bridge in New York City is approximately 5700 feet long, while the famous Brooklyn Bridge is only 4,000 feet, and its longest span only about 1,500 feet.

The Golden Gate Bridge has two supporting towers, each rising 746 feet above the water - 191 feet higher than the Washington Monument. The famous Eiffel Tower in Paris exceeds this height by 239 feet.

Concrete used in building the Golden Gate Bridge equals the displacement of ten first-line battleships of 33,000 tons each. This amount of concrete would build two 10-foot sidewalks on either side of the highway from Omaha to Chicago.

The 100,000 tons of steel required

to build this bridge would fully load a freight train 20 miles long, and if all the rivets needed for construction were placed head to toe they would form an enormous serpent, 36 miles in length. The rivets used in the main structure average 5 inches in length and are fabricated from specially treated steel to meet the exacting requirements of the bridge engineers.

The lumber used during this construction is sufficient to build a village of 78 modern, five-room bungalows.

The two 36 $\frac{1}{2}$ -inch cables of the Golden Gate Bridge required 80,000 miles of wire. This amount would be sufficient to erect a standard wire fence six feet in height on both sides of the main highway from Canada to the Mexican Border, a distance of 1600 miles. If this wire could be connected up in a single length, it would encircle the earth three and one-half times.

Excavations, principally of rock, are among the many important items in the building of this bridge. The total amount of material involved is 553,000 cubic yards. This would equal the material removed in digging a hole in the earth 10 feet square and 25 miles deep.

This bridge will cost \$35,000,000 and, according to present plans, will be completed in May, 1937.

The approach leading to this bridge passes within about 20 feet of the roof of the Crissy Field barracks, and when completed this place will seem like living next to a New York "L." The bridge proper cuts across the end of Crissy Field at right angles. Thus, the western end of the field lies directly in the angle of the bridge. The approach ramp runs parallel to and along the entire length of the field.

Not infrequently the tops of the towers are obscured by low clouds, and equally often, when fog covers the waters of the Golden Gate, these towers, viewed from the hill above Crissy Field, can be seen extending above the fog bank.

At night the bridge presents a fantastic sight. The towers and spans, as well as many lines and wires hanging therefrom, are illuminated by hundreds of electric lights, probably half of them red warning lights, giving the whole structure the appearance of a carnival midway.

San Francisco is also building another bridge, longer overall but shorter in spans than the Golden Gate Bridge but, due to the proximity of Crissy Field to the Golden Gate, "Our Bridge" is our own pride and joy, and we are justly proud to tell others about it.

Hon. Harry H. Woodring, the Assistant Secretary of War, visited Scott Field, Belleville, Ill., for refueling purposes on May 21st, 24th and 28th.

RESCUE MISSIONS BY SELFRIDGE FIELD PILOTS

On May 27th, Selfridge Field was called on by the Coast Guard authorities from Grosse Ile Village, requesting assistance in searching Lake St. Clair for a lost boat with five men on board. First Lieut. Paul W. Blanchard, Jr., took off to search for the missing boat. After about an hour's search, he located the boat upturned, with one man still alive clinging to it and waving to him. Lieut. Blanchard immediately notified the nearest shore station, and a boat was sent out to pick up the lone survivor.

At 11:00 p.m., May 28th, assistance was requested by authorities from Grosse Ile in the search for two men on board a Chris-Craft boat which was missing. Captain Murray C. Woodbury took off at 1:15 a.m., May 29th, to search for the Chris-Craft. After a half hour's search, he had to return to the home airdrome, as it was still too dark to locate the missing boat. He took off again later and, by dropping flares, finally sighted the Chris-Craft at 4:00 a.m., with no one aboard, traveling in circles at full throttle. No trace was found of the two men who had been aboard.

These missions were accomplished by Station Complement personnel under the command of Major Fred C. Nelson while the 1st Pursuit Group was absent from the station on field exercises. The airplanes used were two BT-2B's, there remaining only three planes at the station with the 1st Pursuit Group gone.

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SWIMMING POOL FOR BOLLING FIELD

The progress of construction of an emergency fire reservoir near the gymnasium at the New Bolling Field is being observed almost daily by many enlisted men of that station, and its completion is keenly anticipated. The reservoir's possibilities as a swimming pool are becoming more and more evident to those who have visions of a cool splash on a hot summer day. Since swimming pools in the District of Columbia are usually overcrowded, and the nearest open beaches are at an inconvenient distance, such a construction is a most welcome sight. Its completion is expected about the middle of July, and its size, 100 feet by 40 feet by 12 feet, coincides favorably with the dimensions of a good swimming pool.

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CONGRESSMEN FLY TO INSPECT MAXWELL FIELD

On May 30th, Hon. John J. McSwain, accompanied by members of the House Military Affairs Committee, Major Charles S. Bruce, and Capts. H.R. Baxter and J.W. Persons, Air Corps, as pilot and co-pilot, departed for Maxwell Field, Ala., in one of Bolling Field's new Douglas Transports which is at present assigned to the Office of the Assistant Secretary of War. The Congressmen inspected Maxwell Field and returned May 31st

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NIGHT FLYING BY THE 7TH BOMBARDMENT GROUP
By the Hamilton Field Correspondent

THE problem of locating and bombing objectives at night furnishes a wide field for experiment, and in this connection the squadrons of the 7th Bombardment Group, Hamilton Field, Calif., have conducted several interesting problems recently. Weather conditions have been generally favorable for night flying here. Often the Pacific fog rolls in through the Golden Gate and covers most of the bay region and coast towns, but frequently leaves Hamilton Field open. Night missions can be flown above the layer of fog, and the lights of towns show through well enough so that navigation is not difficult.

A most interesting night flying problem was recently conducted by the 11th Bombardment Squadron. Leaving Hamilton Field at 7:30 p.m., with seven B-10B's and one B-12A, the Squadron formation proceeded to March Field, via Los Angeles. After servicing the airplanes, officers and men went in search of coffee and sandwiches and a place to rest for a few hours. At 1:50 a.m., the Squadron took off from March Field for Hamilton. Its mission was to bomb the water target at Hamilton Field at dawn from 10,000 feet, dropping one bomb from each airplane in squadron salvo.

Major C.H. Ridenour led the Squadron from March Field to Hamilton Field by dead reckoning, flying by instrument under the hood. The B-12A had some difficulty in keeping up, but managed to re-join the formation just as it arrived at Hamilton Field. Some of the tactical value of the problem was lost due to inaccurate information on the time at which the target would be visible from 10,000 feet. As it was, the Squadron arrived at Hamilton Field approximately ten minutes before the target could be seen, and it was necessary to circle the vicinity of the target for that time. The Squadron gave a good account of itself, however, when the target became visible. Its seven bombs bracketed the target.

The 11th Bombardment Squadron has also done considerable experimenting in the use of the bomb sight at night. Using a bonfire as a target, it was found that good bombing could be done up to 14,000 feet and possibly much higher. This bonfire represents C.N. incendiary bombs dropped on a target at night by Observation Aviation to provide an aiming point for the bombardiers of a Bombardment unit approaching the target. At that altitude the experiment was discontinued because of clouds.

Another experiment was the illumination of the water targets by means of M-8 airways flares. The flares were first dropped from 2500 feet and later from 2000 feet. Three airplanes made

bombing runs simultaneously - one at 5,000 feet, one at 7,000 feet and one at 10,000 feet. The results were not satisfactory at the two higher altitudes, but it was possible to see the target from 5,000 feet. On this problem several different colors of filters were used over the bombers' windows to eliminate glare, but it was found that they reduced visibility of these low candle-power M-8 flares to such an extent that better results could be obtained without filtering.

All squadrons have conducted problems using flares over the objectives to guide the Bombers on simulated bombing attacks on cities and water reservoirs. On one such problem the objective was Calaveras Reservoir, about 15 miles northeast of San Jose. The ship dropping the flares fell out of formation on the way to the squadron initial point, which was San Simeon. The first flare was dropped when the formation reached the initial point, and two more were dropped at intervals of 15 minutes. The flares dropped on this mission were easily visible for 100 miles.

These experiments have shown that night bombing still presents difficulties. However, they have been very interesting, and it is believed training and experimentation will overcome these difficulties.

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MANEUVERS FOR FLIGHT "D," 16th OBS. SQDN.

"The annual spring maneuvers have started and we gladly welcome them," says the Correspondent of Flight "D," 16th Observation Squadron, Marshall Field, Fort Riley, Kansas. "Two airplanes were sent from Scott Field for cooperation with said maneuvers on May 15th and 16th. Both animal and motorized troops participated in the maneuvers, and the planes performed day and night reconnaissance missions.

"With respect to our equipment, all functioned satisfactorily except that we experienced difficulty in maintaining CW code communication. The two transmitters used were purchased as experimental equipment and were rejected for service use. The calibration oscillator, type RE-12, was tuning too sharply to stay in proper tune with the set in the Cavalry scout car. The observer kept himself quite busy, with one hand on the oscillator dial and the other writing on message pad, marking papers, arranging drop message bags, and still trying to keep his position in the cockpit. Some doubt may exist as to the capabilities of our observers. However, we might quote the old adage - 'Practice makes perfect.' Notwithstanding the aforementioned handicaps, a good time was had by all. A two-

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day maneuver is now in progress and a real war, lasting from the fifth to the twenty-eighth is scheduled in June. Four planes will be sent from Scott Field to participate in the latter maneuvers.

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RANDOLPH OFFICERS TO GO TO SCHOOLS

Of 17 Randolph Field officers who recently received orders transferring them to Army Service Schools, 14 are veterans who have been stationed at the post since the opening of the field in 1931. Those under orders for change of station who have been at Randolph Field since it was opened are -

Major Paul L. Williams, A.C.T.C.

Major E.D. Jones, Engineering Officer.

Major Bob Nowland, Primary Stage Commander.

Major James D. Givens, Basic Stage Commander.

Captain James M. Bevans, Training Center Adjutant.

Captain Harold A. Bartron, Commanding Officer, 47th School Squadron.

Captain Francis P. Booker, Commanding Officer, 52nd School Squadron.

Captain John F. McBlain, "B" Flight Commander, Basic Stage.

Captain Edmund C. Lynch, Post Operations Officer.

Captain David M. Schlatter, Flying Instructor.

Captain John R. Hawkins, Flying Instructor.

1st Lieut. Tom W. Scott, Flying Instructor.

All of these officers, except Lieut. Scott, have been ordered to the Air Corps Tactical School at Maxwell Field, Ala. Lieut. Scott was ordered to the Air Corps Technical School at Chanute Field, Rantoul, Ill.

Other Randolph Field officers under orders to attend Army Service Schools are Lieut.-Colonel Lloyd N. Keesling, Assistant Commandant of the Air Corps Primary Flying School, who goes to the Tactical School; Captain John M. Weikert, Commandant of Cadets, who is ordered to the Command and General Staff School, Fort Leavenworth, Kansas; and Major Myron R. Wood, Commanding Officer of the 67th Service Squadron, who has been ordered to the Army Industrial College, Washington, D.C.

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37TH ATTACKERS STAGE DEMONSTRATION

In the periodical attack demonstration for the graduating classes of the Chemical Warfare School at Edgewood Arsenal, Md., recently, six A-8 Attack planes from the 37th Attack Squadron, GHQ Air Force, Langley Field, Va., participated in the exercises, the greater part of the day being required to go through their various evolutions.

The students obtained first hand experience in employing of smoke and the advantage of single and collective screening, patching of moving clouds by additional planes, the blending of smoke from more than one airplane and the effect of inter-rain contours on the dispersing actions of up-drafts in wooded areas. A taste of actual conditions was injected into the proceedings when the class was isolated by a dense cloud obscuring their simulated targets and obscuring their movements, while approaching to their advance positions.

The high light of the day's activity was the neutralizing of anti-aircraft batteries by completely obscuring their emplacement, which reduced to a minimum their effectiveness both in lateral and vertical fields of fire. This effective rolling cloud was laid by a flight of six ships flying in echelon and simultaneously discharging smoke, laying a cloud approximately 1500 yards long.

A few officers of the Arsenal took the opportunity to observe these demonstrations from the air in the various phases.

Two days' demonstration were crowded into one, and this placed a little extra pressure on the ground crews, who answered with a will that terminated the exercises in ample time for the flight, less one airplane (engine trouble) to return to Langley Field, arriving there at 6:00 p.m. An approaching thunderstorm kept the flight on their toes the last half hour of flight, and they just landed under the wire as the storm broke five minutes later.

Participating in these exercises were the following: Pilots - Major Ned Schramm, Captains Wolfinbarger, McLennan, Grussendorf, Lieuts. Zimmerman, Thomas, Cadets Eakin and Willoughby; Mechanics - Staff Sgt. Hays, Sergeants Maginnis, Rogers, and Private Hankey.

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SOLDIER'S MEDAL FOR CORPORAL GILMORE

The Soldier's Medal was recently presented to Corporal Clyde E. Gilmore, 44th Obs. Squadron, Air Corps, Albrook Field, Panama Canal Zone, by Major-General Lytle Brown, Department Commander, "for heroism displayed at Albrook Field, September 30, 1935. Observing a soldier, whose clothing was completely enveloped in flames caused by a sudden gasoline blaze in the hangar of the 44th Observation Squadron, running from the scene of the fire, Corporal Gilmore rushed after him, succeeded in throwing him to the ground and removing his clothing. By his courage and coolness, Corporal Gilmore undoubtedly saved the life of this soldier." Corporal Gilmore was born on April 3, 1904, at Highland, Kansas, and enlisted in the Army at Fort Sam Houston, Tex.

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Second Lieuts. Paul Burlingame, Jr., Infantry; Jerome E. Blair, 2d, Cavalry, and Edward Flanick, Field Art., were transferred to the Air Corps, IA April 24, 1936, with rank from June 12, 1934.

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COLONEL FREDERICK L. MARTIN

Colonel Frederick L. Martin, Air Corps, Executive Officer of the Air Corps Materiel Division, Wright Field, Dayton, Ohio, was born November 26, 1882, at Washington Grove, Md. After graduating from Purdue University with the degree of B.S. in 1908, he was commissioned on September 25th of that year as a 2nd Lieutenant, Coast Artillery Corps, U.S. Army; was promoted to 1st Lieutenant, March 11, 1911; Captain, July 1, 1916; Major, Signal Corps (temporary), August 5, 1917; Major, Air Service, July 1, 1920, and Lieutenant-Colonel, Air Corps, August 31, 1933.

He graduated from the Coast Artillery School in 1913, and just prior to his detail in the Aviation Section, Signal Corps, and being ordered to duty in the Office of the Chief Signal Officer, Washington, D.C., he was stationed in the Hawaiian Islands. From October 18, 1917, to June 15, 1919, he was in charge of the Materiel Section, Supply Division, Office of the Chief Signal Officer (later under the jurisdiction of the Director of Air Service) except for a period of several months towards the end of the war, when he was on duty overseas. From June 15, 1919, to May 21, 1920, he was on duty in the Engine and Plane Maintenance Section, Supply Group, and Chief of the Buildings and Grounds Section, Office of the Director of Air Service until August 24, 1920, when he was assigned to Langley Field, Va., for duty as Director and Instructor, Department of Military Administration, Field Officers School.

While stationed in Washington, Col. Martin received flying instruction at Bolling Field, D.C., but on December 18, 1920, he started all over again at the Primary Flying School at Carlstrom Field, Arcadia, Fla., completing the course on April 6, 1921, and being transferred to Kelly Field, Texas, for advanced training. Specializing in Bombardment, he completed the advanced course on July 1, 1921, and was then assigned to Chanute Field, Rantoul, Ill., as commanding officer of that field and as Commandant of the Air Service Mechanics School, the present designation of which is the Air Corps Technical School.

It was during Colonel Martin's tour of duty at Chanute Field that he experienced the greatest adventure of his military career. Designated as the leader of the epochal Around-the-World Flight, pioneered by the Army Air Corps, Col. Martin, piloting the Flagship SEATTLE, and being accompanied by Sergeant Alva L. Harvey (now Captain, Air Corps), suffered the misfortune of running into a dense fog shortly after leaving Chignik, Alaska, on the morning of April 30, 1924.

The fog forced him to fly near the ground. Believing that their greatest safety lay in climbing through the fog, which he felt was purely a local condition, Colonel Martin's progress was very slow, due to the fact that the plane was heavily laden with gasoline and oil. After climbing for several minutes, he caught a glimpse of some bare spots on a mountain, where the snow had blown away, just as the plane crashed. Sergeant Harvey suffered no ill effects from the crash, and Colonel Martin sustained a bruise to his left eye due to the breaking of one of the lens of his goggles, and a cut on his nose. The plane was so badly damaged that further participation in the World Flight was at an end.

For ten days the world had no word as to the fate of the two stranded Army airmen, and it was feared by many that they had come to an untimely end. Then the joyous tidings came from Port Moller that the two airmen had reached the cannery at that point and were being well taken care of. Colonel Martin and Sergeant Harvey suffered many hardships in their ten days' sojourn in the Alaskan wilds. Concentrated food, in liquid form, which was taken along on the flight saved suffering from the ravages of hunger but, despite their heavy flying suits, fleece-lined moccasins, helmets and fur gloves, the intense cold caused them many sleepless hours when they rested from their attempts to reach the Pacific coast line. They made no progress during the first three days, fogs and the rugged mountains blocking their path.

Both men suffered from partial snow-blindness, first Sergeant Harvey and then Colonel Martin. It was not until the morning of May 4th, when the fog lifted and they climbed to the top of a mountain and spied a lake to the southwest, that their slow and tedious journey to the coast started. They followed a stream which they discovered near the lake, but the land was very marshy and they had to undergo a drying-out process whenever they made camp for the night. Fortunately, there was enough dead wood lying about to enable them to build a fire when, thoroughly exhausted, they selected a spot to rest.

It was lucky for the two weakened men that they discovered a deserted cabin on the morning of May 6th, and they proceeded to make themselves as comfortable as possible and obtain much needed sleep. Some food was found in the cabin, and the two hungry men were not long in satisfying their appetite. A violent snowstorm which later changed into rain compelled them to remain in the cabin until the morning of May 10th, when they again started forth, much rested and feeling quite strong. It was at 4:00 p.m. that they caught sight of the wireless mast at Port Moller and a little later some natives in a launch on the bay. From then on better days were ahead of them.

Colonel Martin was awarded the Distinguished Service Medal, the citation accompanying

same being as follows:

"For exceptional meritorious and distinguished services in a position of great responsibility as commanding officer of the United States Army Air Service Around-the-World Flight and as pilot of Airplane No. 1, the 'Seattle,' from April 6, 1924, until April 30, 1924, when, due to an accident which resulted in the complete wreck of his airplane, he was obliged to relinquish command of the Expedition. Major Martin, by his tireless energy, foresight and thorough technical knowledge, assisted materially in completing arrangements and developing the special equipment installed in the airplanes, and so perfected and organized the command that each unit would become self-sustaining and automatic in its operation in the event of separation from or disaster to the others. In the performance of this great task he aided in bringing credit to the military forces of the United States."

Returning to Chamute Field in June, 1924, Colonel Martin remained there until the following October, when he went to Langley Field to pursue the course at the Tactical School. He graduated therefrom in June, 1925; completed the course at the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1926, and then assumed command of Bolling Field, D.C., until April, 1927, when he was assigned to duty in the Office of the Chief of the Air Corps as Chief of the Inspection Division.

Transferred to Kelly Field, Texas, Colonel Martin assumed command of this field and of the Advanced Flying School on August 6, 1930. In September of the following year he assumed command of the Air Corps Primary Flying School at its new location at Randolph Field, Texas. In August, 1934, he began the one-year course of instruction at the Army War College, Washington, D.C., and, following his graduation in June, 1935, was assigned to duty as Executive, Air Corps Materiel Division, Wright Field, Va., and given the temporary rank of Colonel.

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COLONEL DELOS C. EMMONS

Colonel Delos C. Emmons is one of the veteran Army pilots who began his flying training at the Signal Corps Aviation School at San Diego, Calif., prior to the World War. Born in West Virginia, January 17, 1888, he graduated from the United States Military Academy June 11, 1909, and was commissioned a second lieutenant of Infantry. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major (temp.), Aviation Section, Signal Corps, June 3, 1918; to Major, Air Service, July 1, 1920, and to Lieut. Colonel, May 26, 1934.

Colonel Emmons served with the Infant-

ry until January 1, 1917, and then began his flying training, which he completed in July, 1917, receiving the rating of Junior Military Aviator on July 26th of that year. His first duty assignment in connection with Army aviation was as Aeronautical Officer of the Western Department, which position he held from July 27, 1917, to December 17, 1917, when he reported for duty as Assistant Executive, Air Division, Office of the Chief Signal Officer, Washington, D.C.

On June 15, 1918, Colonel Emmons assumed command of Mather Field, Sacramento, Calif., and in January of the following year he was transferred to the Engineering Division at McCook Field, Dayton, Ohio, as Executive Officer. On December 1, 1919, he became Assistant to the Chief of the Engineering Division.

After attending the Harvard Graduate School of Business Administration from September, 1920, to June, 1921, Colonel Emmons, following his graduation, returned to McCook Field for duty as Chief of the Production Section, and he performed the additional duty of Contracting Officer.

On August 2, 1924, he assumed command of Crissy Field, Presidio of San Francisco, Calif., and of the 91st Observation Squadron at that post. Three years later, on August 8, 1927, he was assigned to duty as Assistant Executive, Office of the Chief of the Air Corps, Washington, D.C. He became Executive Officer some six weeks later, on September 28th. On October 11, 1928, he took over the position of Executive in the Office of the Assistant Secretary of War for Aviation, and he was on duty in this capacity until July 5, 1931.

The next two years in Colonel Emmons' military career were devoted to school duty, first as a student at the Air Corps Tactical School and then at the Command and General Staff School at Fort Leavenworth, Kansas. Following his graduation from the latter School in June, 1933, he was ordered to duty in the Hawaiian Department.

On March 2, 1935, by virtue of his position as Commanding Officer of the 18th Composite Wing, he was promoted to the temporary rank of Colonel.

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ORDNANCE DEPARTMENT TO HANDLE BOMB SUPPLY

The War Department, on May 24, 1936, authorized the Chief of Ordnance to organize at Mitchel Field, New York, a test platoon of Ordnance personnel to handle the bomb supply of the 9th Bombardment Group at that station. This action is a step in a plan to have the responsibility for bomb supply for active operations in the field taken care of by Ordnance personnel.

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Lieut. Colonel Walter G. Kilner is under orders to proceed to Langley Field, Va., for duty, upon completion of his course of instruction at the Army War College. Capt. Odas Moon, of Maxwell Field, is also under orders for duty at Langley Field.

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CHANGES OF STATION OF AIR CORPS OFFICERS

Effective July 1, 1936, the following-named Air Corps officers are detailed to take the course of instruction at the California Institute of Technology, Pasadena, Calif.:

Captain Samuel E. Anderson (1st Lieut.) Intelligence and Operations Officer, 43rd Pursuit Squadron, Kelly Field, Texas.

Captain Theodore M. Bolen (1st Lieut.) Engineer Officer, 71st Service Squadron, Barksdale Field, La.

Captain Lawrence H. Douthit (1st Lieut.) Flight Commander, 95th Attack Squadron, March Field, Calif.

1st Lieut. Milton W. Arnold, Engineer Officer, 90th Attack Squadron, Barksdale Field, La.

1st Lieut. Charles K. Moore, upon completion present course of instruction at Air Corps Engineering School, Wright Field, Ohio.

Officers holding temporary increased rank are relieved therefrom July 1, 1936.

The following-named Air Corps officers are detailed for duty as students at the Massachusetts Institute of Technology, effective July 1, '36:

Captain Robert E. Eaton (1st Lt.) Flight Commander, 5th Bombardment Squadron, Mitchel Field, N.Y.

1st Lieut. Ernest Moore, Engineer Officer, 77th Pursuit Squadron, Barksdale Field, La.

1st Lieut. Frederick R. Dent, student, Air Corps Engineering School, Wright Field, Ohio, effective July 31, 1936.

Officers holding temporary increased rank are relieved therefrom July 1, 1936.

Upon completion of his present course of instruction at the Air Corps Engineering School at Wright Field, Dayton, Ohio, 1st Lieut. Edwin S. Perrin, Air Corps, is detailed as student at the University of Michigan, Ann Arbor, Mich.

Effective July 1, 1936, the following-named Air Corps officers, on duty as students at the Massachusetts Institute of Technology, Cambridge, Mass., are assigned to stations, as follows:

To Mitchel Field, N.Y.: 1st Lieut. Royden E. Beebe, Jr.

To Langley Field, Va.: 1st Lieuts. Julius K. Lacey and Torgils G. Wold.

To Selfridge Field, Mich.: 1st Lieut. Anthony Q. Mustoe.

The following-named Air Corps officers, upon the completion of their present course of instruction at the Air Corps Technical School, Chanute Field, Rantoul, Ill., are assigned to stations, as follows:

To March Field, Calif.: Captain William O. Earsöckson and 1st Lieut. Carl R. Feldmann.

To Hamilton Field, Calif.: 1st Lieuts. Fred S. Stocks, George F. Kinzie, Oliver S. Picher and Louie P. Turner.

To Randolph Field, Texas: 1st Lieuts. Thomas Darcy, Joe W. Kelly, Hilbert F. Muentzer and George E. Schlatter.

To Kelly Field, Texas: 1st Lieut. John H.

Bundy.

To Barksdale Field, La.: 1st Lieuts. Herbert N. Grills, Clark N. Piper and Minthorne W. Reed. To Langley Field, Va.: 1st Lieut. Edwin L. Tucker.

To Fort Bragg, N.C., for duty with Flight C, 16th Obs. Squadron: 1st Lieuts. Eugene H. Rice and Earl T. MacArthur, Jr.

To Brooks Field, Texas, for duty with 12th Observation Group: 1st Lieuts. Daniel F. Callahan, Jr., Joseph F. Carroll.

To Mitchel Field, N.Y.: 1st Lieuts. Richard H. Wise and Stuart P. Wright for duty with 97th Observation Squadron; William M. Prince, Photo Section Commander.

To Chanute Field: 1st Lieut. Wiley D. Ganey.

Upon the expiration of their present tour of duty in the Panama Canal Department, the following-named Air Corps officers are assigned to stations, as follows:

To Barksdale Field, La.: Major Orrin L. Grover (1st Lieut.), 74th Pursuit Squadron; 1st Lieut. James W. McCauley.

To Bolling Field, D.C.: Captain William E. Hall (1st Lieut.) Panama Air Depot.

To Hamilton Field, Calif.: Captain Joseph H. Atkinson (1st Lieut.), 29th Pursuit Squadron; Captain Donald W. Benner (1st Lieut.), Panama Air Depot; Captain Elmer P. Rose (1st Lieut.), 6th Composite Group; Captain Ronald R. Walker (1st Lieut.), 74th Pursuit Squadron.

To Langley Field, Va.: Major Frank O'D. Hunter (Capt.) 16th Pursuit Group.

To Selfridge Field, Mich.: 1st Lieut. Edward W. Anderson.

Officers holding temporary increased rank are relieved therefrom upon date of their departure from Panama.

Effective July 1, 1936, the following-named Air Corps officers are relieved from duty and temporary rank at stations indicated, and will proceed to Randolph Field, Texas, for duty: Major William A. Hayward (Capt.) from Chanute Field, Ill.

Captains Eugene B. Bayley and Donald B. Phillips, from Air Corps Tactical School, Maxwell Field, Ala.

Captain Dayton D. Watson, from Command and General Staff School, Ft. Leavenworth, Kansas.

Major Carl W. Pyle (Capt.), 76th Service Squadron, March Field, Calif.

Major Walter H. Reid (Capt.), 2nd Wing; Capt. Henry W. Dorr (1st Lt.), 35th Pursuit Squadron; Captain Stoyte O. Ross (1st Lt.), 35th Pursuit Squadron, Langley Field, Va.

Captain Paul M. Jacobs (1st Lt.), 17th Pursuit Squadron; 1st Lieut. Paul W. Blanchard, Selfridge Field, Mich.; 1st L

1st Lieut. Don W. Zimmerman, student, Calif. Institute of Technology, Pasadena, Calif.

Upon the completion of their present course of instruction at the Air Corps Tactical School at Maxwell Field, Ala.; Captains Samuel M. Connell, Claude E. Duncan and Charles A. Horn are assigned to duty at Mitchel Field; Thad V. Foster and Newton Longfellow to Hamilton Field, and Lewis A. Dayton to Maxwell Field.

DEATH! THEN WHAT!

What is the situation confronting the widow and children of Army officers and enlisted men when the Grim Reaper makes his inevitable call?

Captain J.H. Doherty, Finance Department, in a recent issue of the Coast Artillery Journal, has contributed a most valuable and authoritative article on a subject so seldom discussed that the members of the deceased family are usually left without sufficient information to make a prompt and efficient settlement of his estate. The author of the article goes into considerable detail on the subjects of burial plot; directions for burial; six months gratuity pay; arrears of pay; Army Mutual

Aid Association Insurance; U.S. Government Insurance; money in bank; personal property, including stocks and bonds; commercial insurance policies; real estate owned by the deceased; automobile - title insurance and unpaid notes; fire insurance; U.S. pension; marriage certificate; birth certificate; death certificate; household goods; transportation of dependents to home; last will and testament, etc.

The information contained in Captain Doherty's article has been considered of such vital importance as to cause it to be published in pamphlet form, and copies thereof may be had gratis by communicating with Mr. Wadell F. Smith, Washington Building, Washington, D.C.

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MAJOR EAKER MAKES TRANSCONTINENTAL INSTRUMENT FLIGHT

Major Ira C. Eaker, Air Corps, who recently graduated from the Air Corps Tactical School, Maxwell Field, Ala., set his single-seater Army Pursuit plane down at Los Angeles, Calif., on June 7th, after a flight across the continent during which he relied solely on the instruments in the plane, without any outside vision, to guide him to his destination.

Escorted by Major William E. Kepner, Air Corps, also a member of the graduating class of the Tactical School, in another Boeing P-12 Pursuit plane, Major Eaker completed a test flight which began unannounced at Mitchel Field, N.Y., at noon on June 3rd.

By easy stages, owing to the limited gasoline supply of the small Pursuit

planes, the two officers flew the 2600 miles of airway, Major Eaker seated in the hooded cockpit of his plane, and Major Kepner serving as convoy to avert any mishaps.

According to Major Eaker, the flight demonstrated the reliability of the instruments and the fact that Army pilots can fly "blind" for long periods without too great fatigue.

There were several times when the escort plane was forced to stay behind the "blind" ship, because of poor visibility, thus placing reliance on the "blind" ship to lead the way, was among the comments made following the successful completion of the flight.

The official report covering this flight has not yet been received.

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FIRST PURSUIT GROUP COMPLETES FIELD EXERCISES

The 1st Pursuit Group, Selfridge Field, Mt. Clemens, Mich., returned from field training the week end of June 6th, having departed from the home station the week of May 18th. Bases were maintained at Midland, Saginaw and Camp Skeel, Oscoda, Michigan, with Group Headquarters at Bay City.

Flying missions were performed daily in that area, with radio contact between ground and air units being maintained at all times. Flights were directed to Camp Skeel for gunnery practice, and on completion of the gunnery missions returned to their bases for servicing. The rough condition and the limited area of the landing field at Oscoda prohibited the landing of the P-26 and PB-2 Pursuit planes at that point with any degree of safety.

During the week end of May 30th, a Group flight was made to Indianapolis, Indiana, as part of the training during the field exercise period.

The personnel of the 1st Pursuit Group received very valuable field training and aerial gunnery practice during this period.

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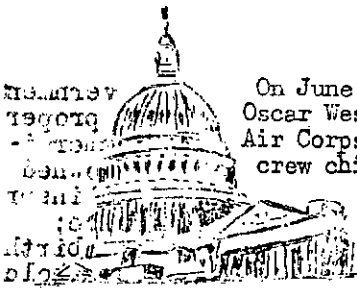
PB-2 PLANES FERRIED TO SELFRIDGE FIELD

Captain C.J. Kenney departed on June 1st for the Consolidated Aircraft factory at San Diego, Calif., to procure and ferry a new PB-2 Pursuit plane to Selfridge Field. Two other pilots of the 1st Pursuit Group, Majors Edwin J. House and George P. Tourtellot, departed on June 6th for the Consolidated plant to obtain the last two PB-2's of the 26 assigned to Selfridge Field.

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Two Langley Field officers, Major R.T. Cronau (Capt.), 2nd Bomb. Group, and Capt. E.R. Todd (1st Lt.), 96th Bomb. Squadron, are slated for station at Kelly Field on July 1st, and relieved from temporary rank. V-7040, A.C.

Washington Office Notes



On June 1st, Major General Oscar Westover, Chief of the Air Corps; accompanied by his crew chief, Sergeant Hymes, left Bolling Field, D.C., in an O-38F airplane for Maxwell Field, Montgomery, Ala., where on the morning

of the 2nd he delivered an address to the 1936 graduating class of the Air Corps Tactical School. He returned to Washington that afternoon, covering the distance of approximately 705 miles in schedule time.

On June 10th, General Westover left for West Point, N.Y., to attend the graduation exercises at the U.S. Military Academy.

General Westover qualified as an instrument flyer for another year. On the morning of June 6th, Major William E. Farthing, as instructor, gave the General his yearly check in accordance with the provisions of the Air Corps Circular covering instrument flying for flying personnel of the Air Corps. Last year General Westover qualified in instrument flying with Captain George W. McGregor as instructor.

Brigadier General Henry H. Arnold returned to duty on June 3rd following an inspection trip on the West Coast.

Officers who recently departed on leaves of absence were Captain James C. Cluck, Supply Division, on June 3rd, and Major Robert L. Walsh, Chief of the Reserve Division, on June 10th.

Recent visitors to the Chief's Office were Colonel Ira A. Rader, while en route on a navigation flight to West Point, N.Y.; Capt. Aubrey K. Dodson, on leave from Hamilton Field, Calif.; Captain Leslie P. Holcomb, on leave from Scott Field, Ill.; Major Harry H. Young, during the course of a navigation flight from Fort Leavenworth, Kansas; Captain C.F. Wheeler, from Wright Field, Ohio, for conference with the War Plans and Training Division; Captain James E. Parker, on a navigation flight from Maxwell Field, Ala.; Major Otto G. Trunk, from Langley Field, for conference; and Major Charles H. Howard, also from Langley Field, for conference on radio matters.

Major Ross G. Hoyt, Information Division, returned from temporary duty at Wright Field, May 29th. Other officers returning from that station, where they attended board meetings or were on other temporary duty, were Major Robert Kauch and Captain Harlan W. Holden, War Plans and Training Division, on June 2nd; and Captain Edward V. Harbeck, Inspection Division, on June 9th.

Captain Leland W. Miller reported for duty in the Office of the Chief of the Air Corps on June 4th, and was assigned to the Supply

Division.

Captain W.B. Souza returned on June 3rd from an inspection trip in connection with radio matters.

Captain Robert V. Laughlin returned to his duties in the Supply Division on June 10th, following a leave of absence.

Major Arthur E. Easterbrook left the office June 8th on an extended navigation flight.

Captain George Holloman, from the Materiel Division, Wright Field, reported on June 7th for temporary duty.

ENLISTED MEN APPOINTED FLYING CADETS

The following-named enlisted men, Regular Army, appointed Flying Cadets, Army Air Corps, are under orders to report to the Primary Flying School, Randolph Field, Texas, June 29th, for assignment to the July, 1936, Class:

Privates:

Orville L. Sparks, Station Complement, Bolling Field, D.C.

William E. Basye, Flight A, 16th Observation Squadron, Langley Field, Va.

George A. Blakey, Air Corps Primary Flying School Detachment, Randolph Field, Texas.

Joseph A. Morris, 67th Service Squadron, Randolph Field, Texas.

Theodore A. Suiter, Air Corps Primary Flying School Detachment, Randolph Field, Texas.

Vernon C. Plane, 64th Service Squadron, March Field, Calif.

Thomas L. Butner, Station Dispensary, Bolling Field, D.C.

Ted W. Ballard, Hqrs. Battery, 1st Field Artillery, Fort Sill, Okla.

Arthur W. Kellond, 2nd Signal Co., 2nd Division, Fort Sam Houston, Texas.

It has often been noted that men in various lines of business, trades or professions bear names peculiarly appropriate to their particular calling. In connection with aviation, such names as Byrd, Eagle, Hawks, etc., are quite prominent. If Private Vernon C. Plane successfully completes his course at the Air Corps Training Center - and it is hoped he will - another very appropriate name will be added to the ranks of the flying fraternity.

Major John P. Richter (Capt.) was relieved from duty with the 3rd Transport Squadron, San Antonio, Texas, and assigned as Engineering Officer of the San Antonio Air Depot, retaining his increased rank.

Effective June 13th, Captain Elmer D. Perrin was assigned to duty as Commanding Officer of the 3rd Transport Squadron, San Antonio, and given the temporary rank of Major.

Effective May 24th, 1st Lieut. John W. Sessums, Jr., was assigned as Flight Commander, 1st Transport Squadron, Fairfield, Ohio, Air Depot, with the temporary rank of Captain.

Eight Air Corps officers stationed in the Panama Canal Department recently accompanied the United States Fleet as observers on a six-day problem in Panamanian and South American waters. Their experience with the Fleet is related by the News Letter Correspondent from Albrook Field, Canal Zone, as follows:

From a technical point of view, the cruise was doubly instructive and interesting, as these eight officers were attached to aircraft carriers; Lieut. Colonel C.T. Phillips and Captain W.E. Hall being attached to the U.S.S. SARATOGA; Captains L.W. DeRosier and F.D. Henry to the U.S.S. LANGLEY; Captain T.S. Olds and Lieut. R.B. Landry to the U.S.S. LEXINGTON, and Captain W.J. Davies and Lieut. P.E. Gabel to the U.S.S. RANGER. Several of the officers were permitted to fly as observers during the air operations of the various Scouting, Torpedo and Bombing units. Every consideration and courtesy was extended by the personnel of the various Carriers, including invitations to take an active part in the traditional "Crossing the Line" ceremonies, and each of the officers concerned now proudly boasts the fact that he has joined the ranks of the "Trusty Shellbacks."

Fortunately for the Army officers accompanying the Fleet, it had been several years since the Naval forces had crossed the equator en masse, with the result that the "Pollywogs" far outnumbered the "Shellbacks." However, it has been reported that what the "Shellbacks" lacked in numbers was more than compensated

for by their experience and enthusiasm. Promptly at eight-thirty on the morning of May 20th, the entire fleet "lay to" for receiving aboard His Majesty, Neptune Rex, in compliance with instructions personally delivered to the captain of each ship the previous evening by Davey Jones, Scribe and Secretary to His Majesty. The Ruler of the Raging Main was accompanied by his court, consisting of the Royal Consorts, the Royal Baby, the Royal Judges, the Royal Doctor and Dentist, the Royal Cops, the Royal Chaplain, the Royal Prosecutor, and last, but decidedly the most active, the members of the order of "Trusty Shellbacks." Each "Pollywog" was arraigned and given a fair and impartial trial, but the cases against the hapless "Pollywogs" were presented by the Royal Prosecutor in such a convincing manner that a verdict of guilty was returned in each instance, whereupon the victims were given the "Royal Works." It is the opinion of the Army pilots that even in this ceremony they were given special consideration; in fact, in some cases the consideration was so special that certain parts of the anatomies concerned still bear the marks of fair wear and tear received in the public service. However, all hands survived, and they look back with pleasure upon the experience of the cruise and anticipate with evil joy their next participation in "Crossing the Line" ceremonies, as they have been thoroughly convinced that it is much more pleasant to give than to receive.

THE BLUE AND GOLD CLUB OF LUKE FIELD

The Air Corps needs mentally alert soldiers. Flying demands mental agility even more than physical fitness. The Blue and Gold Club of Luke Field, T.H., a society with a background of religion, education and social contact, cultivates mental alertness in the soldier in two ways. First of all, it brings to the members each Sunday evening guest speakers from Honolulu and Army and Navy circles who are specialists in their avocations. Journalists, professors, Army and Navy officials, and successful business men have lectured with telling effect to the members of the Blue and Gold Club, furnishing them with models of correct public speaking and with ideas which increase knowledge and mental alertness.

It likewise develops the soldier in his ability to express himself. In this organization in which the enlisted men constitute the majority of membership, parliamentary practice governs all business at each meeting. Thus, each member has the right to discuss all questions before the body. Hence he learns quickly to talk and think in public. The club is self-governing, electing its own officers who direct the affairs of the society. The Chaplain acts as censor and critic. From 50 to 150 soldiers attend and enjoy the talks and the business discussions each Sunday evening at 5:45 p.m. in the post chapel at Luke Field.

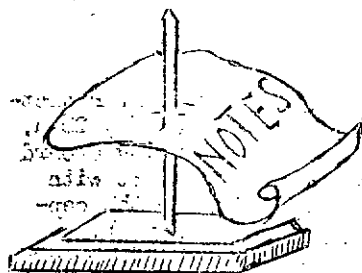
Named after the official colors of the Air Corps, the Blue and Gold Club has obtained

the best talent in the islands for its guest speakers. The club also acts as a nucleus for the formation of subsidiary clubs, among which are a bridge, camera, chess, dramatic, stamp, tourist and the Ballentine Bible Class, named after former Chaplain Harlan T. Ballentine, and taught by the man succeeding him at Luke Field, Chaplain Milton O. Beebe.

It is believed the success of this Club at Luke Field would justify a similar organization at each Air Corps flying field, and that membership in the Blue and Gold Club could be carried from one Air Corps station to another upon the transfer of the soldier.

The Department Commander, Major General Hugh A. Drum, has consented to be the guest speaker of the Luke Field Air Corps Club on September 6th, next. Captain Howard B. Nurse, Constructing Quartermaster at Hickam Field, recently detailed the salient features of the \$15,000,000 flying field which is springing up under his guidance. High school education in Honolulu, with its racial problems, were shown to the Luke Fielders by the acting principal of the McKinley High School, Mr. Carter, and Mrs. Livingston Jenks, of the Honolulu Academy of Arts, arranged for a lecture before the organization on "Primitive and Modern Hawaiian Art."

The club has sponsored a number of recreational outings at beautiful Hawaiian beaches and acted as hosts to departing soldiers sailing for the mainland.



from Air Corps Fields

Clark Field, Pampanga, P.I., May 1st.

As the 1935-1936 fiscal year draws to a close and the rainy season is giving promise of making its debut, the 3rd Pursuit Squadron finds itself having completed its year's training directive.

Recent newcomers to the Squadron were 2nd Lieuts. W.M. Canterbury, R.J. Reeves and R.A. Legg. Two weeks after their arrival, Captain C.W. Davies escorted the three new officers on an inspection flight to the fields in the Southern Islands, including Iloilo, Cebu, Zamboanga, Jolo, Davao, Lake Lanao, Cotabato, Malabang and Del Monte. The maintenance and servicing (from 5-gallon tins) was done entirely by the personnel of the flight. Thus, the trip was not only very interesting but instructive for the three new officers fresh from the Training Center.

The shortage of airplanes is beginning to be acutely felt in the Squadron.

Captain W.M. Morgan and 1st Lieut. H.W. Bowman are at present on six weeks' leave, visiting points of interest in China and Japan.

Captain C.W. Davies had the unique experience of a collision at sea between two destroyers while a passenger on the U.S.S. WHIPPLE, enroute to Shanghai. After returning to the base at Olangapo, Captain Davies continued his trip to China aboard the U.S.S. BLACK HAWK.

Air Corps Troops, Fort Sill, Okla., June 3d.

The personnel of Post Field extend congratulations to two young men who have been successful in competition for appointment to the United States Military Academy, West Point.

The men are Privates William H. Rogers, Flight "E", 16th Obs. Squadron, and Jack P. Thompson, 1st Balloon Squadron.

Units at Fort Sill think that the Observation course at Kelly Field should be revised to include "Identification of Animals. One officer attending the course who recently arrived with the Observation Class on the final cross-country trip, looked across the golf course and invited attention of other officers to a Faun grazing on the greens. The Faun was an Oklahoma Jack-Rabbit.

The First Balloon Squadron is all agog over a radio recently received at Headquarters, Field Artillery School, to the effect that this unit will participate in Army maneuvers to be held at Camp Custer, Mich., the latter part of August.

Photography and Electro-Chemistry can combine to perform April Fool stunts. In a mosaic recently made of Fort Sill, there appeared at the end of the second roll of exposures static electrical discharge "tracks." These

"tracks" occurred on exposures covering part of the Wichita National Game Refuge, and their location coincident with actual existing roads and trails made them appear as beaten paths, possibly game trails to a salt lick. So testified a certain Air Corps officer who flew over the area in question some time later in an effort to locate said "salt lick" from the air after study of the photographs. Enlightenment from the Photo Section furnished the solution and put an end to the wild goose chase for deer trails to salt licks. Page Mr. Ripley.

Langley Field, Va., June 5th.

20th Bombardment Squadron: Much progress has been made in the qualification of pilots in Instrument Flying. To date, all assigned pilots have qualified, as well as all active attached pilots.

Since the Squadron returned from the Winter Maneuvers, there has been a noticeable increase of incoming and outgoing mail between Langley and Concord, N.H.

58th Service Squadron: The Squadron departed on May 22nd via motor convoy for Yorktown, Va., and upon arrival there went into camp on the outskirts of the town. Pitching of the camp was completed at 11:00 a.m., and the afternoon was given over to recreation, consisting of soft ball, golf, swimming in the York River, etc. Camp was struck on the morning of the 23rd, and the organization was back in barracks at 10:00 a.m. The exercise was enjoyed by all, and the instruction received in the making and breaking of camp was of great benefit to the organization. It was the first experience of this nature for many of the younger men, and it is hoped that the organization will be permitted more exercise of this kind in the future.

33rd Pursuit Squadron: On Saturday, May 16, we enjoyed Organization Day. The Mess Sergeant did himself proud in cooking up the chicken, and it surely hit the spot. Baseball and horseshoe pitching took up most of the afternoon, with a prize given to the man who hit the first home run. This went to Corporal Dyer, who socked a mighty one. Everyone seemed to enjoy himself, and it was a wonderful relief after the usual routine.

35th Pursuit Squadron: This organization entered a team in the Indoor Ball League being formed at Langley. Lieut. J.H. Jeffus, Squadron Athletic Officer, is in charge of the team and expects to have a very successful season. This organization placed second in the league last year, and has hopes of copping the title this year.

37th Attack Squadron: The first sight of an A-17 was obtained when Captain William J. Flood flew here from Edgewood Arsenal for a demonstration. V-7040, A.C.

tion. Our future equipment looked rather formidable and clean cut, except the arrangement of the smoke tanks. However, the Squadron is anxiously waiting to demonstrate their adaptability to the new equipment.

Organization Day, our yearly get-together, was a great success. The Squadron personnel paired off in various groups to seek their own brand of pleasure. Two soft ball games were played by the 37th. The home boys stayed close to the chow and liquid refreshments. Games of all description were in progress during the day. Some photographs of the activities of the organization were obtained and will be widely circulated, to the embarrassment of the few who posed in good faith.

Missions in connection with the Chemical Warfare School at Edgewood Arsenal are being flown quite regularly. The personnel of the 37th appreciate the opportunity of getting this valuable and instructive training with smoke and chemicals. This work is especially interesting at the moment for the reason that our squadron commander, Major Ned Schramm, and Captain Stuart McLennan, our Armament officer, are students at the Chemical Warfare School and are able to give us some expert criticism at the conclusion of each mission.

The Squadron regrets the loss of two of its Reserve officers, 2nd Lieuts. Wm. B. Barnes and Joseph R. Qualm, both of whom have joined the United Air Lines. Lieut. Barnes graduated from the Air Corps Training Center in 1933, and Lieut. Qualm in 1932. The best wishes of the Squadron accompany them in their new line of endeavor.

Brooks Field, San Antonio, Texas, June 4th.

Night flying has been suspended at this station since November, due to the construction of runways on the main airdrome. Through the assistance of the Training Center, a field lighting truck has been secured so that the minimum requirements can be met by the flying personnel. This unit, supplemented by kerosene torches to outline the landing area, is being used on the southeastern portion of the airdrome. The kerosene torches have proven to be excellent markers, and some pilots prefer using them with wing lights rather than using the floodlight.

In the handicap skeet tournament, Cadet G.H. Snyder won the major event, and Major W.C. Ocker placed second. This event consisted of 100 targets. Captain D.N. Yates had the high total without handicap and also pulled in the prize for the Miss and Out contest. The low handicap members at the shoot were Captains P.D. Ccates, (2); D.N. Yates, (2); L.S. Callaway, (3); R. Kyle, (4); L.N. Tindal, (4), and 2nd Lieut. N.L. Peterson, (4).

Hamilton Field, San Rafael, Calif., May 22d.

Following the arrival of Major General Frank M. Andrews and his party on May 17th, and after dining at the Officers' Club, a pleasant afternoon was spent at the Marin Country Club. Here General Andrews and Col. Olds became very much involved in a golf match with Col. C.L. Tinker, Commanding Offi-

cer of the 7th Bombardment Group; Major C.H. Ridenour, Commanding Officer of the 11th Bombardment Squadron, and Captain F.L. Anderson, Group Operations Officer.

In the evening, following a reception, a dinner was served and attended by the officers and wives of the post. Later on wedding presents were presented to Lieuts. R.T. King, H.T. Alness, H.M. Baker and B.E. Brugge, four of the most recently married officers of the post. The gifts were silver pitchers, engraved with the Group insignia, and were presented by Col. Tinker with the compliments of the officers of the 7th Group.

11th Bombardment Squadron: Two sorrows have recently befallen this Squadron. First, "Bum" came out second best in an encounter with an automobile. Bum was a mixture of about fifty varieties of canine parents, but the members of the Squadron were always insistent that he was a thoroughbred; second, Sgt. Roy H. Coulter, with his never-to-be-forgotten imitation of a moustache, departed May 16th for a trip to Hawaii.

Pvt. 1st Cl. Zanetti, our famous Engineering Clerk, finally chiseled a cross-country trip to March Field. Said trip was at night in slightly cool weather, so Zanetti wore his blouse - his best blouse. At the take-off he was a little too warm, so he removed his blouse and placed it in the exact center of the bomb bay. The bombing was a huge success that night, and now Zanetti wants to know what farmer, in what county of what State in these United States is using his blouse to clothe a scare-crow. In his own words: "I didn't know they were going to bomb."

Tech. Sgts. Swanson and Wiedekamp are off for a short trip to Hawaii to teach the Hawaiian soldiers how to fly a Bomber. They will be gone about two or three months, and we hope they have a good trip.

Second Lieut. Lewis L. Mandell, Air Reserve, recently took a short cut back to civies by volunteering for inactive status prior to the expiration of his term of active duty. Employed by the United Air Lines, San Francisco, on the Salt Lake run, he is busily engaged in spreading his wings on his new job. Nevertheless, he is finding, as we have found, that there is something more to military service than "Three squares per day with regular pay." There is, in fact, something stronger, sterner and finer - it pulls on your old-heart strings when you try to break away. In short, the Lieutenant is lonesome. We are pulling for you, Leo, but secretly hope you will be with us permanently soon.

70th Service Squadron: The Squadron does have some time for play in spite of being such a busy outfit. And when play time comes around, the officers and men are as conscientious in their sports and social pastimes as they are in their work. The dances given by the 70th in February and March were without doubt the best ever given by the enlisted personnel at the field. Refreshments were served in a room adjoining the dance room, and it proved a popular place all evening.

Under the inspirational guidance and persevering enthusiasm of Major Myers, the Badminton bug has infected the other squadrons on the field. The 70th no longer has trouble finding opponents in the other organizations. The disciples of Isaac Walton are busy these days trying to lure bass from the cool depths of San Pablo Bay.

San Antonio Air Depot, Duncan Field, Texas:

A group of 12 students of the Advanced Flying School, Kelly Field, in charge of Lieut. M.F. Stalder, of that station, made a tour of inspection through the Engineering Shops of this Depot on May 22nd.

Mr. Harry C. Short, Superintendent of Aircraft Shops at the Middletown Air Depot, Middletown, Pa., was on several days' temporary duty at this Depot during the course of a tour of various Air Corps stations and commercial shops to observe overhaul methods and shop systems.

Although the Depot's 3rd Transport Squadron, commanded by Major J.P. Richter, has been in existence less than a year, it feels it has proved worthy of its wings, despite some few handicaps encountered along the way. For example, on May 21st, the Squadron, which has only one transport assigned to it, made something of a record in flying a total of 1480 miles in this Supply Control Area, carrying a total freight cargo of 10,000 pounds. The mileage was made by two round trip flights between the Depot and Barksdale Field, La. The pilots of the Transport were Staff Sgt. T.K. Dorsett and Pvt. John Gebelin.

Recent visitors from the Materiel Division, Wright Field, Ohio, were Colonel F.L. Martin, Executive, May 26th, on a ferry flight to Brooks Field; Captains E.T. Kennedy and H.G. Woodward, May 29-June 1, on an extended navigation flight via New Orleans; Mr. O.R. Rose, Technical Assistant, Field Service Section, May 27th, for a few days' temporary duty, to confer on photographic and armament supply requirements and Air Corps Maintenance matters; Mr. R.M. Harmony, Senior Commodity Supervisor, Field Service Section, June 3rd, for several days' conference on spare parts requirements and maintenance questions.

Major R.T. Cronau, HQ Air Force, Langley Field, ferried a B-6A Bomber here for overhaul, June 1st, returning by air via Kelly Field.

During a visit to the various Signal Corps activities in San Antonio and vicinity, Major G.P. Bush, S.C., Chief of Supply in the Office of the Chief Signal Officer, Washington, inspected the Signal Corps aircraft radio section of this depot.

Warrant Officer and Mrs. A.R. Trabold returned June 1st from a month's leave.

Bolling Field, D.C., June 9th.

Officers and enlisted men of Bolling Field who knew Major Hez McClellan, Air Corps, and especially those who worked with him and accompanied him on some of his many flights, were deeply moved to learn of his death at Wright Field, Ohio, May 25th. During Major McClellan's various assignments while stationed at Bolling Field, his congenial personality and ever cooperative manner in the performance of his duties and his association, were well acknowledged and liked by all who knew him. Members of the command extend sincere sympathy to the bereaved family of the deceased officer.

To the housewives it may be called house cleaning. To some soldiers it is called han-

gar spraying. At least, it has been this way since the recent flood waters of the Anacostia River left its mark high and wide on the various buildings of the post. A detail of post painters have been laboring ever so diligently with brushes, spray guns and cleaning materials to restore the hangars again to their original color. Painting and cleaning was also very necessary in officers' quarters and the various offices located at the "old field." But the job is nearly completed, and it is hoped that by next season high waters most of the airdrome facilities will be located at the "new field."

On June 6th, Mr. Early E. Ritzert, Chief of the Air Corps Development Section, whose office is located at the "old field," departed with Capt. E.V. Harbeck for Wright Field. Mr. Ritzert plans upon leaving Wright with Captain Kelly, of that station, on a tour of inspection of the commercial airlines, including Chicago, St. Paul, and Seattle, Wash. This department is directly concerned with the many problems encountered in maintenance and operation of airplanes in the Army Air Corps.

Members of the guard at Bolling Field are now sporting a new Sam Brown-ish pistol belt. A diagonal strap from left shoulder to right hip supports the weight of the heavy .45 automatic far more comfortably than the old style holster-on-belt. This addition to the guard uniform is looked upon with very much favor and adds considerably to the appearance of the members of the guard.

Luke Field, T.H., May 18th.

Special crews made up of volunteers from each squadron have been busy for the last few weeks helping assemble the new A-12 and B-12 planes which recently arrived in the Hawaiian Department as a result of General Drum's efforts to modernize the air units on the Pacific outpost. Not many months after his arrival in the Hawaiian Department, the artillery was provided with new tractors and trucks. Luke and Wheeler Fields each received about four times the number of trucks they had before, and they were new ones.

The new planes are the first of this type to be sent to the Islands. Both are the neatest jobs that have ever been seen in the Islands.

Hawaiian Air Depot, Luke Field, T.H.

Since Lieut. Colonel Frank H. Pritchard was relieved from command of the Depot, following orders to return to the mainland for station at Scott Field, the Depot has been functioning without an official Commanding Officer. Capt. Branshaw in addition to being Engineering Officer, acted in the temporary capacity of Commanding Officer. Orders were issued, and now ex-Captain Branshaw is Lieut. Colonel Branshaw, designated Commanding Officer of the Depot.

An inspection of Luke Field and the Hawaiian Air Depot by General Drum, Commanding General of the Hawaiian Department, was scheduled for May 27th. As a result, the ingenuity of everyone was expended in an attempt to improve the appearance of the grounds and antiquated buildings housing the Depot. A little paint on the buildings and trimming of the grass and shrubbery has materially improved the appearance.

The arrival of A-12 and B-12's as replacements

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for several surveyed airplanes somewhat disrupted production, due to the necessity of assembling and inspecting them. During the month of April, however, the Depot overhauled 12 engines and 4 airplanes besides assembling the A-12's and partly assembling the B-12's.

The Depot Supply Section received over 600,000 pounds of freight so far this calendar year. The following is a resume of the receipts by month: January, 226,000 lbs.; February, 82,000 lbs.; March, 53,000 lbs.; April, 300,000 lbs.

The Metal and Bulk Storage Warehouse, commonly known as the Seaplane Hangar, has been completely renovated. A treating vat has been installed in the Metal Storage Unit. Due to the high humidity, it is necessary to take greater precaution with metal stocks than normally required at other stations. Periodic inspections are made, and stocks are retreated at the first indication of corrosion. Modern racks for storage of tubing and sheet metal have been constructed throughout the building.

Tech. Sgt. J.J. Arsenault, who has been with this Depot for a number of years, is now being congratulated on his promotion to Master Sergeant. He will return to the mainland in the near future.

Scott Field, Belleville, Ill., June 3rd.

First Lieut. James C. Bean, Chaplain, reported for duty on May 22nd. A graduate of Northwestern University, Northwestern University Theological School and the Garrett Biblical Institute, and ordained April 9, 1933, Chaplain Bean was commissioned from the Chaplain Reserves on May 15, 1936. At the time he was commissioned, he was pastor of the Methodist Episcopal Church in Kempton, Indiana.

Captain Oakley G. Kelly, of the Fairfield Air Depot, made a technical inspection at Scott Field May 25th to 27th.

Private Frank W. Brashears, Station Complement, a radio operator of ZT7, the 21st Airship Group "air alert" station, reported a fade-out of radio signals on all frequencies from 10 megacycles on up during the period from 11:58 a.m. to 12:15 p.m., May 28th. Private Brashears verified the fade-out on three radio receivers, including that of his own amateur station, W9CJH.

A total of 6,900 square yards of concrete was poured on the new landing field apron, and the work is now half completed.

March Field, Riverside, Calif.

From billiard room attache to student flier? Not an Horatio Alger classic but the life story of Private Vernon C. Plane, 64th Service Squadron. March Field Headquarters recently announced his appointment as a Flying Cadet, and he will report to the Commanding General of the Air Corps Training Center, Randolph Field, Texas, on June 29th. A former guard on the Independence, Iowa, Junior College basketball team and a member of the All Iowa second team for 1933, Plane brings to his new career of flying a good background of athletic preparation.

Plane emigrated to California with his pa-

rents, Mr. and Mrs. P.J. Plane, a year ago upon his graduation from Independence Junior College. Plane enlisted in the Air Corps September 26, 1935, with the object of taking advantage of preferential treatment given Army enlisted men in awarding appointments to the Air Corps Primary Flying School at Randolph Field. Although he held the credits necessary to entering this school, he wished to devote further time to scholastic preparation. He was given the job of caring for the squadron recreation room by his squadron commander, Major Orin Bushey, that he might carry out his plans.

An all around athlete, Plane also played football and basketball at Independence High School. He also pole vaulted in high school. Turning a natural interest in swimming to practical use, he worked as a life guard at the river beach in Independence last summer. Plane holds the American Red Cross rating of senior life saver. He was born October 28, 1916, at Independence Iowa.

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WAR DEPARTMENT SPECIAL ORDERS

Changes of Station: To Chamute Field, Ill.:

1st Lieut. Richard T. King, Jr. (2nd Lieut.), 9th Bombardment Squadron, Hamilton Field, Calif. Relieved from temporary rank August 20th.

To Mitchel Field, N.Y.: Captain Lindsay M. Bawwell (1st Lieut.), 19th Composite Wing. Relieved from temporary rank upon departure from Panama.

To Hamilton Field, Calif.: 1st Lieut. William E. Karnes, upon completion present course of instruction at Air Corps Technical School, Chamute Field, Ill. - Major James G. Taylor (Captain), Materiel Division, Wright Field, Dayton, Ohio. Relieved from temporary rank August 10, 1936.

To Patterson Field, Fairfield, Ohio: Lieut. Colonel (Major) Junius H. Houghton, from Panama. Orders assigning him to Brooks Field, Texas, amended.

To Langley Field, Va.: Major John P. Temple (Captain), Station Complement, Barksdale Field, La. Relieved from temporary rank July 28, 1936.

To Wright Field, Ohio: Captain Thomas L. Thurlow (1st Lieut.), 30th Bombardment Squadron, March Field, Calif. Relieved from temporary rank July 1, 1936.

To the Philippines: Captain Lloyd Barnett, 16th Observation Squadron, Fort Benning, Ga.

To Washington, D.C.: Captain Lawrence J. Carr Maxwell Field, Ala., to Walter Reed General Hospital for observation and treatment.

To Fort Benning, Ga.: Lieut.-Colonel George C. Kenney (Captain) Headquarters GHQ Air Force, Langley Field, Va., for duty as instructor at the Infantry School. Relieved from temporary rank, July 17, 1936.

Orders revoked: Assignment of 1st Lieut. Dean C. Strother, Barksdale Field, to Air Corps Technical School, Chamute Field, Ill. - Assignment of Captain Robert E.L. Choate, 49th Bombardment Squadron, to Air Corps Technical School, Chamute Field, for duty as student in Communications course.

Orders amended: Captain Charles Mck. Robinson assigned to Flight B, 16th Obs. Squadron, Fort Benning, Ga., instead of to Infantry School.

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KEEPING FIT

Scott Field, Ill.:

Up to May 18th, eight of the forty games in the inter-squadron league have gone down in history. The undefeated 9th Airship Squadron, in the lead with four games won, has good prospects of winning all future games. The 15th Observation Squadron holds second place with three games won and one lost; Staff team is third with one victory in four starts, and Station Complement trails with four defeats.

June 3rd: The 9th Airship Squadron is the undefeated post baseball champion, having won all nine games in the inter-squadron league. The 15th Observation Squadron finished second; Staff, third; and Station Complement, last.

Clark Field, P.I.: The 3rd Pursuit Squadron baseball team, under the expert coaching of Lieut. Legg, is standing well up in the local league, composed of teams from the Artillery and Cavalry at Fort Stotsenburg. With a few good bowlers in the Squadron, the officers' team is anticipating a successful bowling season during the coming rainy months.

Lieut. Cordes F. Tieman, Luke Field baseball coach, has assembled what seems to be the strongest team that has represented the Fliers for some years. "Wild Bill Winniger" who flings them over from the starboard side dusted off the strong Staff team from Schofield on May 2nd, score 7 to 4. Luke Field has added several promising players to the roster - Free, a new backstopper from the 50th Squadron; Tony Schall, an outfielder; infielders Sadler and Powell; Probasco, a southpaw first sacker, and "Lefty Big Muscle Klein," also a portsider, who in a game on May 8th with the "Beavers from Schofield, scalped 12 of the twenty batters to face him in six innings, Luke Field winning 10 to 5. Up until the time of the Fleet Air - Luke Field game, played May 16th, the Fliers were pasting the old pill for a team average of .326. "Chucker" Powell's .466 and Ball's .397 do a good bit toward pushing runs across the home plate. Back in 1930, when "Chucker" put on long pants, he went to Columbia to join the Air Corps. Even today he looks no older and could get by on two shaves a week. A mighty man is he, this youthful looking short stop from the sand beds of South Carolina.

Bolling Field, D.C.

The members of the soft ball teams are still trying to gain supremacy in the league. The officer team in its inimitable manner still holds the top position. Games are played almost every afternoon at 3:00 o'clock, and

a capacity crowd is always on hand to add a bit of cheer to the performance. Captain S.K. Robinson holds first place on the pitching staff.

Hamilton Field, Calif.:

Claiming their home turf as the best and most meticulously maintained diamond in Marin County, the baseball team is going "great guns" in local circles. Under the tutelage of Captain John O. Roedy, Q.M. Corps, its coach - incidentally an officer well known to Army ball tossers by virtue of his long service as player and coach in both domestic and foreign climes, the team is progressing to the point where it will be a leading contender for independent and semi-pro honors in the San Francisco Bay area.

Handily winning the first two games on its schedule, aided by the great fielding of second-baseman R.J. Elliott and the heavy stick work of J.P. Shadko, local home run king, the boys show a world of promise, and a banner season seems to be in order. Frank Contreras, Station Complement, the assistant coach, is a ball player with a wide and varied background with Army ball players.

Practicing and playing on their own time has proved to be no deterrent to the Air Corps ball tossers, as they display keen interest in the game, showing a quality of team work which ought to bring them far along the road to success. "Doing things brown" is a hobby with the flying soldiers. After the game the visiting team is entertained at dinner at one of the various mess halls and then bidden Godspeed with this friendly gesture.

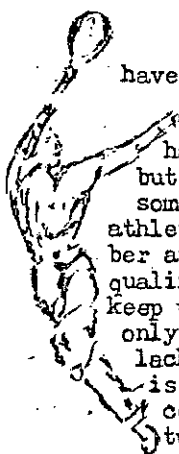
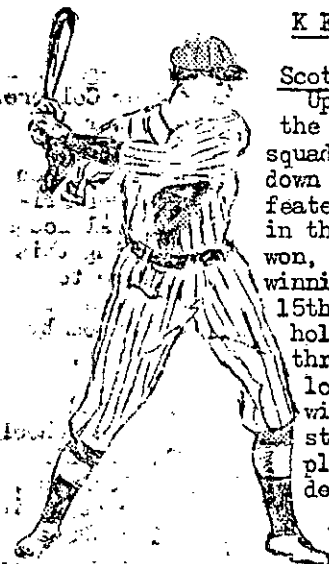
Bolling Field, D.C.

As we all know, athletics have always been an outstanding function of the Air Corps. Athletics at Bolling Field have always been quite popular, but somewhat at a standstill for some time past. However, the athletes, and there is a goodly number at Bolling who have proved their qualifications, have endeavored to keep up with the many sports, but only on a lesser scale due to the lack of athletic facilities. This is being remedied. Six new cement courts, four tennis and two volley ball, are nearing completion, not to mention a splendid court in the post gymnasium. They are ideally located adjacent to the new athletic field. It is believed that both officers and enlisted men will take full advantage of the new courts when completed, and several members of the command are earnestly looking forward to a tennis team. There are several promising players who will compete for the team. Captain S.K. Robinson, Air Corps, high ranking tennis player of the District of Columbia and the Army and Navy Country Club, who is Athletic Officer at Bolling Field, will undoubtedly lend a helping hand to make the team a success.

Hamilton Field, Calif.

Hamilton Field recently triumphed over Letterman General Hospital in Tennis by a score.

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Portable Automatic Aerial Film Dryer.

A portable automatic aerial film dryer has been received from the Philadelphia Air Transport Company, Norristown, Pa. This dryer was developed for the express purpose of obtaining drying equipment which would be compact and self-contained for use in drying of aerial film under field conditions. Drying is accomplished by passing the film over a series of small wooden rollers suspended around a periphery of approximately 28 inches. As the film is traveling over these rollers, 104 jets of air are projected against the surface. The speed of travel of the film can be varied from 1 to 5 feet per minute, and as it becomes dry it is rolled onto a standard film spool. Complete drying of one roll of film, 9½ inches by 75 feet long, can be accomplished in from 20 to 80 minutes, depending on the humidity of the air. Experimental tests of this dryer proved satisfactory, and action has been initiated to procure a quantity for service test to determine its suitability for Air Corps use.

Photographic Developing Compound.

Tests are being conducted on a developing compound, which has all the ingredients mixed up in a single unit container. Preliminary tests indicate that this developer may be suitable for use in the development of aerial films and photographic prints. This method of procuring a developer will greatly facilitate the preparation of a developing solution, inasmuch as it will obviate the necessity of weighing and measuring quantities of various chemicals prior to mixing of solutions. At the present time, each unit container of one pound weight is sufficient to prepare one gallon of stock solution from which three gallons of developing solution can be made. Further tests will be conducted on this developer to determine its suitability for use in connection with Air Corps photographic projects.

Navigation Case (Dead Reckoning).

An Engineering Section Memorandum Report furnishes information for standardization of the Type A-4 navigation case (dead reckoning). This navigation case consists of a Lawyer type, 4-pocket, brown brief case with an insert receptacle for pencils, erasers, dividers, protractor, etc.

Argon Glow Lamps.

An Engineering Section Memorandum Report covers the results of tests conducted to determine the feasibility of using argon glow lamps for contact printing on chloride paper. It was stated that the chloride paper photographic efficiency of the argon glow lamp is the highest of any of the lamps tested and is recommended for use where a light weight and compact contact printing machine is needed. The high photographic efficiency of these lamps eliminates the need for forced ventilation in a printer using them. The argon glow

lamp was tested in comparison with five types of 100-volt incandescent lamps.

Crash Fire Trucks.

An Engineering Section Memorandum Report touches on a conference of a Materiel Division representative with representatives of the Office of the Quartermaster General. The Quartermaster Corps was informed that the equipment now carried on the crash fire truck is inadequate in the event of a crash in which large quantities of gasoline are involved, and the following recommendations were made:

- a. Provide an additional 200 pounds of CO₂ and another hose reel on the crash fire truck.
- b. Make provisions for two 1½-inch foam lines.
- c. Install a larger engine in order that the unit will be capable of towing the trailer as listed under d, below.
- d. Provide a trailer on which is installed approximately 1,000 pounds of CO₂ and two hose reels, the unit to be towed by the crash fire truck.

High Tension Ignition Cable.

A representative of the General Cable Corporation, Rome, New York, recently visited the Materiel Division regarding high tension ignition cable. This Corporation has developed a type of high tension ignition cable which will, in addition to meeting all the requirements of the present ignition cable specification, No. 95-28003, successfully withstand considerably higher dry heat temperatures. A sample will be submitted to the Materiel Division for test in the near future.

Winter Flying Shoes.

An Engineering Section Memorandum Report was prepared May 15, 1936, closing out the experimental order on the Type A-6 winter flying shoes and recommending that 200 pairs be procured for service test. The Type A-6 flying shoes consist of a sheep shearling lining 10 inches high with a rubber foxing and sole. The sole is designed to prevent slipping by a non-skid bar on the rubber sole and heel. Fastening of the shoe is accomplished by an interlocking fastener attached on the front. This type shoe is also provided with a sheep shearling insert for additional warmth, to be worn without the regular dress shoe.

Field Shelter Equipment.

An Engineering Section Memorandum Report furnishes information relative to the completion of development of field shelter equipment. This equipment consists of the Type A-2 field shelter tent (This is a one-man tent 72 inches long by 48 inches wide by 48 inches high, constructed with a water and mildew-proof body of mercerized cotton fabric to which is attached a heavy rubberized cotton duck bottom); the Type A-2 sleeping bag (this bag is down-filled and cotton fabric-covered) provides for greater warmth and less bulk. The bag is in the form of a robe 90 inches by 90 inches, containing an outer shell of cotton duck and an all-wool blanket

lining. The down is contained within a cotton sheeting cover and held in place by means of a diaphragm and a series of equalizers. Lift-the-dot fasteners are provided on the sides and end for closing the bag, and the Type A-2 pneumatic mattress (75 inches long by 30 inches wide) is constructed of rubber-sized cotton fabric vulcanized at all joints and contains five longitudinal diaphragms. A pillow valve is provided at one corner and a hand pump for inflation.

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KEEPING FIT (Continued from Page 21)

of 7 matches to 2. Letterman won one singles and one doubles match. This is the second match of the season, Hamilton winning the first over the Petaluma Tennis Club recently, six matches to three.

In the contests with Letterman General Hospital, the Hamilton Field racquet men who won their sets were Brosius, Lewis, Johnson, Clark and Ditter. Winners for Hamilton Field in the Doubles were Lewis and Clark and Walker and Ditter.

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MARCH FIELD AMPHIBIAN MAKES LONG SEA FLIGHTS

Far out over the blue Pacific a giant Douglas amphibian plane drones its way. At 6,000 feet there is still no land fall for these air soldiers and land fighters to use as a basis for calculating their bearings and position.

But these flying khaki-clad seafarers know what they are about. Under the instruction of such pilots as Major Westside Larsen and Major Albert F. Hegenberger, navigator and co-pilot of the first successful flight to Honolulu, March Field pilots proceed with confidence in guiding their amphibian plane through such flights as the recent ones to southern Pacific waters and to Hamilton Field, Calif., as well as projected flights to Seattle and Panama.

Why are they doing these things? What is the purpose of these flights over water when the natural medium of soldiers is the land?

Lieut. Colonel Davidson, commanding officer of the 19th Bombardment Group, explained that while the principal mission of Army aviation is the protection of land, it must also be prepared to engage the "enemy" at points several hundred miles out to sea.

Three amphibian planes are at the disposal of the 19th Bombardment Group. They are used to train pilots and navigators in order that the element of risk be kept down to the lowest possible degree. Pilots trained in the three amphibians should have no difficulty in finding their bearings while piloting Bombers over the ocean. It is the ultimate aim of Brigadier General Henry B. Clagett, commanding the First Wing, GHQ Air Force, to train every Bombardment pilot in the First Wing in piloting and navigating planes over water. To this end, considerable equipment has been furnished by the Government to train West Coast pilots in piloting and navigating planes

over water. This includes sextants, octants, amphibian airplanes, compasses, drift sights and similar instruments, as well as hundreds of technical books dealing with related aspects of the subject.

During all of the past winter, pilots of the 19th Bombardment Group have been going on short flights and practicing with sextants on the ground. This Spring and Summer they are putting their training to practical tests by long flights with the Douglas Amphibian OA-5 plane, which has been lent to March Field by Langley Field, Va., for this purpose.

The larger Amphibian, the YOA-5, carries a normal crew of six officers and two enlisted men. One officer pilots and commands the plane; another is co-pilot. The remaining officers practice as celestial navigators, while the two enlisted men work as engine mechanic and radio operator, respectively.

For the proposed Seattle flight, the plane will fly at least 200 miles out to sea from Point Firmin. At that point, the navigator selected for the mission will instruct the pilot to change his course to the north to a point about 200 miles at sea opposite Seattle. He will also determine the turning point near Seattle. These points are determined by celestial observations.

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THE 31ST BOMBARDMENT SQUADRON AT MATHER FIELD

Officers and men of the 31st Bombardment Squadron regretfully tore themselves away from their respective Sunday dinners, threw their camping equipment into the bomb bays of the new B-10B Bombers, and took off for Mather Field, Sacramento, Calif. The trip became necessary when the 31st Squadron was chosen to test the new tentative Training Regulations, 440-40, concerning bombing, for the 7th Bombardment Group located at Hamilton Field, Calif.

Early Monday morning, pilots and bombers climbed into airplanes with high hopes of a successful but rapid completion of the Squadron mission. But unforeseen obstacles were soon encountered. High winds prevented the officers operating the azimuth instruments on the observation towers from accurately locating the shots, so activities were suspended until the wind subsided. According to the natives thereabouts, this wind-storm was the last of the season, but it would be hard to convince members of the 31st that the rest of the month was anything but "unusual weather."

The bright spot of the first two weeks in camp was the farewell party tendered Captain J.G. Moore by the entire Squadron. This event took place in the dining hall of one of Sacramento's leading hotels, and will be long remembered by all who attended.

During the third week, bombing continued with grass fires throwing a pall of smoke over everything. Fires started by exploding bombs kelt all personnel well occupied and brought bombing almost to a standstill. Finally, when all the grass was burned off the field, missions once again went off as scheduled.

It was about this time when previously undiscovered talents of Major H.D. Smith, Squadron V-7040, A.C.

commander, became self evident. With practically no previous experience, he became the champion bull frog "snatcher" of the Squadron, a real menace to the bull frog colony in the vicinity of Mather Field. At the present time it is understood that Major Smith is grooming a couple of "dark horse" entries for the annual Jumping Frog Contest at Calaveras, held in memory of Mark Twain. However, the rest of the frog hunters were not so successful; they brought home more blisters than frogs.

The Squadron's latest newlyweds, Lieut. and Mrs. Brugge, finished their honeymoon at a hotel adjoining the field after an "extended" trip in Southern California.

This year, chiefly because of weather conditions, gold mining did not pan out so well. Even the most hardy of the junior officers

and enlisted men gave up after a few attempts to panning in the cold waters of the American River.

However, despite the numerous interruptions because of bad weather and other unforeseen circumstances, the Squadron managed to drop its quota of bombs with a reasonable degree of accuracy. A total of 1441 one-hundred-pound practice bombs was dropped, in accordance with the tentative Training Regulations 440-40. The News Letter Correspondent expresses the opinion that the requirements for qualification are a little too exacting, considering our present equipment."

Hamilton Field was a welcome sight to the Squadron as it came roaring home late in the evening of May 29th, thus marking the end of another successful field trip for the 31st Bombardment Squadron.

