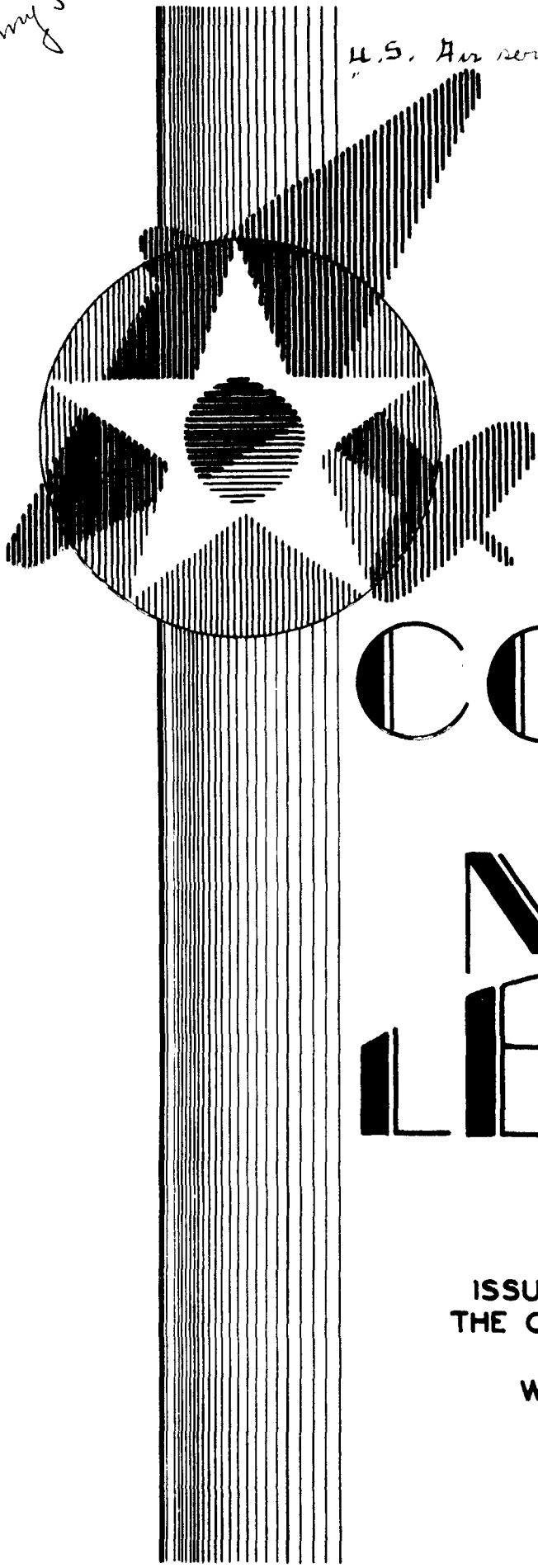


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AIR CORPS NEWS LETTER

ISSUED BY THE OFFICE OF
THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
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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WE RESUME PUBLICATION

A year ago last October we announced regretfully that circumstances were such as to make it necessary to discontinue the News Letter for the time being. This state of affairs no longer obtains, so now, after a lapse of 14 months, we are happy to announce that, to use an every-day expression, "we are doing business at the old stand", the Chief of the Air Corps having given his approval to the resumption of the News Letter.

There were also several other factors which influenced the decision to resume publication, first and foremost of which was the reorganization of the tactical elements of the Air Corps into the General Headquarters Air Force. With the creation of this new organization, it is naturally to be expected that many problems will arise, the nature of which will be unfamiliar to most officers in the field. It is felt that a publication such as the News Letter can serve a very valuable purpose in maintaining solidarity and community of interests in the Air Corps. With the restrictions upon publicity, the public press cannot be expected to serve as an adequate medium for acquainting Air Corps personnel with the true aspects of incidents transpiring in the Air Corps from time to time. It will be the endeavor to make the News Letter constitute the needed agency for setting forth a true interpretation of Air Corps problems and of disseminating information on matters of vital concern.

Following the suspension of the News Letter, as time went on there was a growing sentiment that there is a real need for a publication of this character to serve the purpose, not only of keeping each Air Corps station in touch with the functions and accomplishments at other stations, but, in thus knitting together the widely separated activities of the Air Corps, prove a moral factor in promoting the interest of its personnel - by strengthening the feeling that they are an integral part of one system, all interested in the same objects and striving towards the same end. The problems of the Air Corps are many and varied. For many of them no precedent can be found upon which to base the solution. Since one person's ideas may inspire ideas in others, a round-table discussion on aviation matters carried on in the pages of the News Letter will, perhaps, afford a source of aid in the practical solution of our Air Corps problems.

It is hoped to start the new year with a News Letter which will prove of maximum interest and benefit to all Air Corps personnel. This is its primary purpose, but experience has also shown that the News Letter can serve as an excellent medium of information to civilians interested in aviation. The people have a right to know what progress is being made in the air arm of the military forces of this nation, and such interest on their part should by all means be encouraged.

Among the material which will appear in the News Letter will be late changes of policy in aviation; the latest orders on changes in personnel or stations; projected activities; new types of airplanes being contracted for; items of interest in technical developments at the Materiel Division; outstanding flight achievements; developments in Congress with respect to the

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Air Corps, and notes of interest regarding activities at Air Corps fields and stations.

Having thus set forth the aims and purposes of the News Letter, let it be said here as emphatically as words can convey the meaning that cooperation is a prime necessity. It is absolutely essential to have the whole-hearted and enthusiastic cooperation of all Air Corps personnel - post commanders, other officers and enlisted men - in order that the News Letter can accomplish what it is setting out to do. Our aim is to serve you, but in order to do so we must have your assistance.

Every officer or enlisted man in the Air Corps, Air Reserve or National Guard Air Corps who has new ideas on operation, supply, maintenance, or anything else having to do with flying units is cordially invited to take advantage of the News Letter as the medium for presenting his ideas. For example, any officer who believes he has an outstanding maintenance system should write about it in the News Letter, thereby giving others the benefit of his experience for the good of the service generally. Many a post commander at an Air Corps field thinks he has the best organization ever assembled. Why? Everybody wants to know. Perhaps some crew chief thinks his crew is the best that ever rustled a wing or hefted a wrench. Why? Tell it in the News Letter, and perhaps someone else will wake up and try to steal his stuff, which is what we want them to do for the sake of efficiency.

The News Letter requests every commanding officer to assign to a suitably qualified officer the task of preparing and forwarding regularly material for the Air Corps News Letter. This material should be prepared in narrative form to attract and hold the attention of the reader. Endeavor will be made to issue the News Letter twice a month, and correspondents should forward their contribution of material for this publication to the Office of the Chief of the Air Corps on the 5th and 20th of every month.

It is desired to make every page of the News Letter informative as well as interesting, and it is far better to have a small and snappy publication with good, juicy meat in it than a bulky one which is merely skimmed over by the reader and then cast aside as being unworthy to spend any time to give it a thorough reading.

The success of the News Letter will depend in a large measure on the whole-hearted endeavors of its correspondents in the field, and with their cooperation, as well as that of every post commander and all other Air Corps personnel, it will be possible to produce a publication of value and interest which will reflect real credit on the Air Corps.

We extend to all Air Corps personnel best wishes for a most happy and prosperous New Year and close with the hope that 1935 will prove a banner year in the history of the Air Corps.

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RADIO COMMUNICATION ON LONG DISTANCE FLIGHTS

Radio communication on the special flight from the West to the East Coast incident to the Command Post Exercise at Fort Monmouth, N.J., which is mentioned elsewhere in this issue of the News Letter, was mainly with the airways radio stations of the Department of Commerce. The flight was never out of communication with at least one of these stations. Fine cooperation was extended by the personnel furnishing this communication service. The flight was able to obtain all the weather information available several hundred miles in advance. It was possible to arrange for servicing, parking, hotel accommodations, transportation, meals, etc., while in flight. This was important, as the destination was sometimes changed en route or just a few minutes prior to take-off.

The Department of Commerce airways radio stations guard 3105 Kilocycles (96.15 meters), and this frequency was used throughout the mission. During a practice flight in the vicinity of March Field, the flight communicated with an Air Corps station in Panama on 4220 Kilocycles (71.05 meters).

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REETINGS FROM GENERAL FOULOIS TO ALL AIR CORPS PERSONNEL
Through the medium of the Air Corps News Letter

I desire to extend the heartiest and best wishes for 1935 to each and everyone of the Air Corps personnel.

I have had the publication of the Air Corps News Letter resumed, in order to promote a continuation of the same fine spirit of cooperation that has always existed in our organization as a whole.

The prospects for success in attaining many of the objects for which we have labored together for many years have never appeared brighter. With the organization of the General Headquarters Air Force, we may hope to secure a closely knit, uniformly trained fighting force capable of carrying out, under the direction of the Commanding General in the field, the strategical mission of the Air Corps to meet and repel air attacks against the continental United States, and to participate with other Army forces in meeting and repelling attacks of ground and naval surface forces against our coasts and borders, or within our territory.

With the added funds included for the Air Corps in the 1936 Fiscal Year budget recommendation of the President, more ample and suitable equipment can be secured for all our units and activities. The year ahead offers splendid opportunities for great accomplishments in the Air Corps, and I invite all our personnel to participate therein by the fullest display of proper initiative and devotion to professional duties.

B. D. Foulois,
Major General, Air Corps,
Chief of the Air Corps.

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NEW ASSISTANT TO CHIEF OF THE AIR CORPS

Lieut. Colonel Augustine W. Robins, Air Corps, was named last week for appointment to the rank of Brigadier General and Assistant Chief of the Air Corps.

Col. Robins is a native of Virginia and was born at Gloucester on September 29, 1882. He attended high school at Richmond, Va., and was then appointed to the United States Military Academy, West Point, N.Y. Upon his graduation on June 14, 1907, he was appointed a second lieutenant and was assigned to the 12th Cavalry. He was promoted to first lieutenant on September 15, 1913, and to Captain on January 26, 1917. He graduated from the Mounted Service School, Fort Riley, Kansas, in 1916.

On August 5, 1917, he was appointed Major (temporary) Signal Corps, and assigned to duty at Scott Field, Belleville, Ill., on September 23, 1917. On December 19, 1917, he was transferred to Park Field, Millington, Tenn., where he continued the flying training he began at Scott Field. He completed the prescribed tests for the rating of Reserve Military Aviator and, on August 9, 1918, he received the advanced rating of Junior Military Aviator. He was promoted to Lieut. Colonel on August 20, 1918.

On October 9, 1918, Col. Robins took station at Indianapolis, Ind., and assumed the duty of District Supervisor for the Northern District. Transferred to the Office of the Director of Air Service, Washington, D.C., January 30, 1919, he served in various capacities, such as Assistant to the Chief of the Property Division, Chief of the Requirements Division and Assistant to the Chief of the Supply Group until August 2, 1921, when he was transferred to Fairfield, Ohio, and assumed the duty of Commanding Officer. He remained at Fairfield until June, 1926, when he was

transferred to the Advanced Flying School, Kelly Field, Texas, as student for the Special Observers Course. He completed this training on September 7th and was rated Airplane Observer, effective September 30, 1926.

Returning to Fairfield, he remained on duty there until his assignment as student officer at the Air Corps Tactical School, Langley Field, Va., in August, 1928. Upon his graduation in June of the following year, he was assigned to the command of the San Antonio Air Depot at Duncan Field, Texas. In November, 1931, he was assigned to duty at the Materiel Division at Wright Field, Dayton, Ohio, and served there for nearly two years, when he was detailed as student at the Army Industrial College, Washington, D.C. Graduating therefrom in June, 1934, he was detailed to his present duty as student officer at the Army War College, Washington, D.C.

Colonel Robins reverted to the rank of Major, Regular Army, on July 1, 1920, and was promoted Lieut. Colonel, Regular Army, January 4, 1931.

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NEW AIR CORPS MAPS

Two new maps are planned for use of Air Corps Pilots. These maps will cover the following areas: Map No. 30A, will combine 5 present Air Corps Strip Maps as follows: No. 17, Yuma to Los Angeles; No. 31, Nogales, Tucson to Phoenix; No. 32, San Diego to Phoenix; No. 38, San Diego to Tucson; and No. 39, Los Angeles to San Diego. The new map will be on a scale of 1/750,000 and will include all the area formerly covered by the 5 strips.

Map No. 59 will be a new compilation covering the route from Washington, D.C. to Charleston, S.C. and Savannah, Ga., via Richmond, Va., Ft. Bragg, N.C. This new map will serve the route to Miami, Fla. which at the present time necessitates using 4 maps from Washington, D.C. to Savannah, Ga.

I welcome the opportunity afforded to me by the Air Corps News Letter to extend in this first issue a New Year's Greeting to the units of the G. H. Q. Air Force, as well as to all Air Corps personnel, all of whom will play an essential part in making the Air Force a success.

The period until March 1st, the effective date of the organization of the Air Force, will be utilized in organizing a staff and preparing a general plan of operation. The Air Corps personnel to be assigned to the various station complements will naturally have the very closest relations with our Air Force people. The complete cooperation of the station complements will be an important factor in securing successful operation.

The relationships with all Air Corps activities not included in the G. H. Q. Air Force will not differ in essential details from those which have always obtained. It will be my constant effort to promote the fullest understanding on the part of all concerned in working out our mutual problems and responsibilities. The Chief of the Air Corps has assured me of his cooperation to secure this result, so that there is every reason to believe that teamwork in the Air Corps, as a whole, will be maintained at its present high standard.

I can not say very much at present as to my plans. However, one of the early objectives to be attained will be to equip and train all Air Force units so that they may be able to be self-supporting for more or less extended periods of time separated from their bases. Eventually our wings and groups should become familiar, as organizations, with operating conditions throughout the whole United States.

F. M. Andrews,
Lt. Colonel, G. S.

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ARMY AIR CORPS WINTER TEST FLIGHTS

The Secretary of War, Honorable George H. Dern, upon recommendation of the Chief of Staff, General Douglas MacArthur, has approved plans covering a series of mid-winter test flights by the Air Corps in the North-central section of the United States. Major Ralph Royce, Air Corps, Commanding Officer of the First Pursuit Group, Selfridge Field, Michigan, will lead a group of 18 airplanes of the latest types during the latter part of January in flights extending over a period of about one month. It is planned to establish the base of operations at Duluth, Minnesota, conduct various test flights in that locality for about three weeks, and terminate the tests with an extended flight to Great Falls, Montana, and return to Selfridge Field. As the characterization of these flights indicates, their purpose will be to make a thorough test of Air Corps equipment to determine its suitability while conducting operations under sub-zero weather conditions. The airplanes to be utilized in this flight are the newest types and representative of the various classes of Air Corps flying equipment.

Five years ago, in January, 1930, the First Pursuit Group participated in what was termed the "Arctic Patrol Flight", also under the command of Major Royce. 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.

Based upon the data obtained as a result of this flight, experiments with new equipment designed to improve cold weather operation

were carried on at the Materiel Division at Wright Field, under the Equipment Branch and the Airplane Branch, with 1st Lieutenant Alden R. Crawford, Air Corps, acting as Project Engineer in most cases. The equipment thus developed was service-tested by the First Pursuit Group during the winters of 1931-1932 and 1932-1933 with Major Adlai H. Gilkeson, Air Corps, in charge of many of the tests. As a result of these tests and the information gained, further improvements were incorporated in the experimental equipment which is now ready for a further test.

While the previous tests were restricted to Pursuit airplanes, the forthcoming mid-winter expedition to the Northwest will include tactical airplanes of all the classes, organized into a skeletonized composite group, comprising 3 Boeing P-26 Pursuit planes and 3 Boeing F-12K Pursuit planes, 4 Martin B-12 Bombers, 3 Douglas C-43 Observation planes, 3 Curtiss A-12 Attack planes and 2 Bellanca C-27 Transport planes.

Among the equipment which will undergo a thorough test under conditions approximating that of the Arctic regions will be wheel skis, a landing gear combination of a wheel and a ski adapted for landing on both bare and snow covered ground; devices for starting engines in zero weather, such as fire pots, blow torches and engine heaters; engine covers; flying clothing, such as jackets, trousers, vests, boots, helmets, etc.; power plant installations; priming fluids, gasoline and oil. Field shelters will also be provided for the personnel.

The personnel of the flight, including the Commanding Officer and a Flight Surgeon, will consist of 20 officers and 27 enlisted men. Of the Officers, all but two, the Flight Surgeon and the photographer, will pilot airplanes.

A number of the airplanes will be equipped with radio transmitting and receiving

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sets, and all of them will have the required number of standard flight instruments, supplemented by such other instruments as may be decided upon by the Air Corps Material Division at Wright Field, Dayton, Ohio.

The War Department has arranged the forthcoming tests in order that the equipment may be perfected as the result of practical operating tests under severe conditions of cold weather.

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THE CATERPILLAR CLUB

There is at least one organization whose progress is always up ards, the famed mythical Caterpillar Club, composed of men and women who made forced parachute jumps. The end of the calendar year 1934 saw 678 names on the Caterpillar Club Register, comprising personnel classified as follows: Air Corps officers, 134; enlisted men, 67; Air Reserve officers, 71; Medical Reserve Corps officers, 1; officers of other branches of the Regular Army, 4; Flying Cadets, Air Corps, 29; National Guard officers, 11; National Guard enlisted men, 6; officers of the U.S. Navy, 38; enlisted men, U.S. Navy, 22; Naval Reserve officers, 6; Naval Reserve enlisted men, 2; officers, U.S. Marine Corps, 20; enlisted men, U.S. Marine Corps, 11; Marine Corps Reserve officers, 3; civilian air rail pilots, 30; other civilians, 204.

Included in the list of 678 names are 23 Caterpillars, each of whom made two jumps; Captain Frank G.D. Hunter, Air Corps, made three jumps, and the Chief Caterpillar of them all, Colonel Charles A. Lindbergh, carries four degrees, so that altogether a total of 721 life-saving jumps have thus far been made in this country. These figures have been compiled from reports of jumps gathered from various sources but there is no guarantee that they are correct, since it has not been possible to make an accurate check on emergency jumps made by civilian flyers.

The Register of the Caterpillar Club shows jumps by calendar years, as follows:

1919 - 22	1926 - 17	1931 - 99
1920 - 1	1927 - 40	1932 - 91
1922 - 2	1928 - 46	1933 - 92
1924 - 10	1929 - 92	1934 - 79
1925 - 12	1930 - 134	

In perusing reports which have been made on recent parachute jumps, incidents are noted which warrant their being passed on to the author of the daily "Believe It or Not" cartoon. Flying Cadet Anthony G. Eubank, recently initiated into the Caterpillar Club when forced to jump from a Bomber which was rapidly losing altitude when the left motor cut out while flying over mountainous country, stated that he remembered nothing from the moment he bailed out of the plane until he regained consciousness lying on the ground. He had no recollection of pulling the rip cord of his parachute nor of landing in the small clearing which met his gaze when he came to.

This would seem to add testimony to any assertion which may have been made that the mind works subconsciously at times.

Lieut. Julius T. Flock, flying in the vicinity of Powlerton, Texas, and forced to jump when his motor started to disintegrate, set sail with his parachute for terra firma only to view with alarm that cactus plants were everywhere below him. He had to make the best of a bad situation, and the injuries he sustained upon landing were minor but very uncomfortable. Caterpillars have landed on barbed wire fences, one of them being Col. Lindbergh. Whether barbed wire is more painful than cactus thorns is a moot question, but it is said that cactus thorns cause infection.

Second Lieut. LeRoy A. Rainey and Pvt. Arthur Prestridge had a rather exciting experience when they were forced to jump from an Attack plane due to the failure of the engine crankshaft. Long streams of fire burst from all around the engine and especially from the exhaust stacks and from the bottom portions of the engine. Lieut. Rainey started rocking the wings as a signal for his passenger to jump and at the same time began rolling both flaps and stabilizer. The passenger did not jump, and when the pilot could no longer stick to the controls because of the heat and smoke he stood up in the cockpit, pushed back his goggles and waved the passenger to get out. As Pvt. Prestridge started over the side, flames seemed to burst from all over the ship.

Lieut. Rainey got out on the left side, placing his foot on the top of the cockpit and jumping far and high enough to lead him to believe that he would clear the vertical fin and the landing wires. His jump was not high enough and he hit the landing wires with his stomach and right leg. Crawling out on the wing in preparation for another jump was impossible, as streams of fire completely engulfed the wings and the side of the fuselage.

When Lieut. Rainey hit the landing wires, he said that everything went black and he was trying to get his breath. When he saw the ground rushing at him, he pulled the ripcord of the parachute. A moment later he received a hard jolt and he settled in the top of a large tree where he relaxed for some time until he could get rid of his nausea and regain his breath.

He learned later that his passenger had been riding with the cover over the rear cockpit closed; that when he heard the engine trouble and noticed the rocking of the wings he pushed the cover back and started to jump, but the wind caught under the cover and blew it shut, knocking him flat in the bottom of the cockpit.

Pvt. Prestridge stated that the flames burned his left hand and face. When he pushed the cockpit cover forward again, he dived to the right side of the cockpit, head down, right hand in front, left hand holding the cockpit cover forward and his back towards the front of the airplane. As soon as he was in mid-air the force of the wind turned him around in the air and his legs were struck by the leading edge of the stabilizer. As soon as he turned a few somersaults he pulled the rip cord.

"I was suffering from the burns", he stated. "Every movement of my body seemed automatic and without effort. The blow on my legs did not seem to hurt, and it was a pleasant sensation, such as I experienced when diving from a springboard into a swimming pool. After I pulled the rip cord and was coasting towards the ground the sight of the pilot, who had not opened his parachute yet did not look so pleasant. As soon as his chute opened I glanced back to the flaming and roaring airplane that crashed through the trees to the ground."

Flying Cadet Fay W. Olmstead chose an unusual way of leaving his airplane when the time came for him to make a forced jump. The ailerons of the Boeing airplane set a very bad fluttering after hitting very rough air currents. At the time he was riding in the "jump" seat just forward of the co-pilot. When the airplane started the violent fluttering or vibrating, he got down from the seat and watched the ailerons through the side windows in the radio operator's compartment. The entire airplane was vibrating badly and he saw a section of the right aileron tear off. Making his way forward from the radio operator's compartment to the front of the bomb bay, he stood on the bomb bay doors and grabbed the emergency release cable leading from the pilot's cockpit. When he pulled the cable, the bomb bay doors fell open and he fell out of the airplane, feet first, and turned over so that when the parachute opened he was falling head down. The opening of the parachute corrected his position, though not very gently.

At the time the ailerons started fluttering, the airplane was at an altitude of 9,500 feet. Cadet Olmstead stated that while descending after the parachute opened he had a feeling of "dangling in the air" until close to the ground, when it seemed to come up at him very rapidly.

Twice 2nd Lieut. Sydney D. Grubbs, Jr., attempted to leave his Pursuit plane, which failed to respond to the controls during a spin, and each time he was thrown back into the seat. Finally, by bracing both elbows on the side of the cockpit and placing his heels on the edge of the seat, he was able to pull himself over the left side of the airplane.

"After freeing myself from the airplane," Lieut. Grubbs stated, "I remember reaching for the rip cord. I remember nothing more until I came to later in the presence of a farmer. The tail surfaces hit me a hard blow on the side of the head. Yellow paint was found on the helmet and, although the helmet wasn't torn, my ear was split open severely."

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GUARDING THE 3105 KILOCYCLE FREQUENCY

An announcement was made in a recent issue of the Air Commerce Bulletin, published by the Bureau of Air Commerce, Department of Commerce, to the effect that beginning January 1, 1935, a continuous receiving watch will be maintained on 3,105 kilocycles by all Department of Commerce stations where facilities for radio communication with air-

craft are available, and that it is contemplated that each radio station will be provided with a spare radio receiver on or before January 1, 1935, which will be utilized to guard the day and night air transport companies chain frequencies which are in use on the airway where the station is located. The announcement goes on to say:

"On airways where more than one air transport radio chain frequency is in simultaneous use, the radio receiving watch shall be alternated between them to coincide with the transmitting frequency being utilized by the aircraft nearest to the station. Transport companies desiring their chain frequency channels to be thus guarded should keep airways district offices informed concerning the frequencies in use, the time of the daily shifts from day to night frequencies, etc. All arrangements shall be effected with the express understanding that the listening watch on 3,105 kilocycles is continuous and will be accorded preference in the event of failure involving one of the radio receivers at the radio station.

"It is contemplated that all two-way plane-to-ground communications with Department of Commerce airway stations will be conducted on 3,105 kilocycles as soon as all aircraft are equipped for use of this national calling frequency. It is felt, however, that ground personnel should also follow as closely as possible all radio communications involving aircraft in flight over their own sector of the airway. By so doing, they may trace the progress of flights and thereby anticipate the pilot's requirements both as to weather information and ground service."

According to the December 26th issue of the "Weekly Notices to Airmen", published by the Bureau of Air Commerce, the plan to have Bureau of Air Commerce Radio stations stand continuous listening watches on 3,105 kilocycles after January 1, 1935, has been deferred to a later date pending the acquisition of the necessary additional equipment. The present system of maintaining listening watches on air transport chain frequencies and on 3,105 kilocycles on request will be continued until further notice.

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ARMY AERONAUTICAL MUSEUM RECEIVES MCCOY PAPERS

Mrs. Florence L. McCoy, the widow of former Major James C. McCoy, has just presented to the Army Aeronautical Museum at the Materiel Division, Wright Field, Dayton, Ohio, a valuable collection of war medals, aeronautical documents, and photographs pertaining to early days of the American Air Service.

Among the large number of photographs one of particular interest was taken in October, 1907, and shows the Balloon Detachment of the Signal Corps at that time. One of the men in the picture, Private Vernon L. Burge, is still in the Army now holding the rank of Major, Air Corps.

Major McCoy played an important part in the development of aeronautics in the Un-

ited States. He was one of the founders of the Aero Club of America. He received his balloon training in France and later received the American Spherical Balloon Pilot license No. 1. He was prominently identified with aeronautics for a number of years and when the United States entered the World War he was commissioned Major, Aviation Section, Signal Corps.

Major McCoy's papers are a valuable addition to the historical manuscript collection of the Army Aeronautical Museum.

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BILL INTRODUCED FOR CONSTRUCTION WORK AT CHANUTE FIELD

A Bill, calling for a total appropriation of \$5,205,500 for construction work at Chanutte Field, Rantoul, Ill., was introduced on January 3, 1935, in the House of Representatives by the Hon. D.C. Dobbins, Member of Congress from Illinois.

This Bill (H.R. 2012) reads as follows:

"A BILL

To authorize appropriations for construction of buildings, utilities and appurtenances thereto, for the Air Corps Technical School at Chanutte Field, Illinois.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is authorized to be appropriated, to be expended under the direction of the Secretary of War, for the purpose of necessary construction work for the Army Air Corps Technical School at Chanutte Field, Illinois, the following sums: \$955,000 for barracks; \$417,000 for noncommissioned officers' quarters; \$1,012,000 for officers' quarters; \$120,000 for hospital; \$345,000 for hangars; \$30,000 for paved aprons; \$748,500 for central heating plant; \$101,000 for improvements in landing field; \$25,000 for telephone construction; \$50,000 for fire and guard house; \$40,000 for garage; \$45,000 for quartermaster's warehouse; \$5,000 for quartermaster's gasoline storage; \$40,000 for quartermaster's maintenance building; \$400,000 for mechanics' school and test stands; \$150,000 for communications school; \$150,000 for photographic school; \$116,000 for armament school; \$30,000 for photographic installations; \$70,000 for Air Corps warehouses; \$59,000 for officers' mess; \$10,000 for paint, oil, and dope warehouse; \$15,000 for bomb storage; \$5,000 for machine gun range; \$75,000 for gymnasium; \$100,000 for headquarters administration building; and \$20,000 for gasoline-storage system; in all, \$5,205,500."

This Bill was referred to the Committee on Military Affairs.

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WAR DEPARTMENT ORDERS

1st Lieut. Dixon M. Allison to Selfridge Field, Mich., upon completion of tour of duty in Panama Department.

2nd Lieut. John W. Darragh, Jr., Cavalry, relieved from detail in the Air Corps, to 1st Cavalry Division, Fort Brown, Texas.

Captain Philip Schneeberger to San Francisco, Calif., as Air Corps Procurement Planning Representative for San Francisco District upon completion of tour of duty in Hawaiian Department.

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OKLAHOMA FAMILY HOSTS TO AIR CORPS PILOT

In fog and rain of sufficient intensity to delay all airplane movements in the vicinity of Burksdale Field, La. and Texarkana, Texas, for two days, an Air Corps pilot found himself nose-in into very dangerous flying conditions in Southeastern Oklahoma. Possibly he had not watched the weather actions carefully enough but, at any rate, he found his retreat to emergency fields completely cut off, so he looked around a bit and landed in an open hay field, evidently glad to get down anywhere.

The field proved to be a good one, and Lt. Mills, the pilot, reported that with a little care an entire Group could be safely landed there. It is located about two miles southeast of Williant, Oklahoma, and about four miles north of the Red River. Now a most important feature of this location is the presence of the home of the farmer, Mr. Roy Roberts. For two days while the fog persisted, Mr. and Mrs. Roberts and the four younger Roberts, sheltered, fed and entertained the Lieutenant, while Joseph Popelson, right hand man, faithfully guarded the plane. Each morning the pilot would march bravely to the plane, shoot off the curiously-inclined big red bull, take a look at the dim outline of the fence a few rods away, and rush back to a comfortable chair in front of a blazing fireplace to listen to Indian and ranch stories of early Oklahoma.

Such hospitality among the dwellers of the great open spaces is not unusual, but in each case a real service has been rendered the Air Corps, and a little closer bond between the Army and the civilian population has been formed. Everything the farm afforded, from its telephone to its eight white mules, was placed at the command of the visitor, who gained four pounds during his stay.

P.S. The writer reported to us that the tool-kit and the pair of big rabbits he always carries on extended trips were worth their weight in platinum to him.

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DISTRIBUTION OF THE NEWS LETTER

The Information Division, Office of the Chief of the Air Corps, invites suggestions from Commanding Officers of Air Corps fields as to the most advantageous distribution of the News Letter to the personnel of their commands. Strict economy is necessary in the publication of the News Letter and suggestions are desired as to the minimum number of copies which should be allotted to each organization at a field to insure satisfactory circulation of the News Letter to all personnel.

IN MEMORIAM

Fourteen Air Corps officers departed to the Great Beyond during the past calendar year, among whom were a number of veteran pilots who were well known not only throughout the Air Corps but also in the field of aviation generally. They have left a void in the ranks of the Air Corps which it will be hard to fill and, in some instances, impossible to fill.

The officers who passed away were Lieut.-Col. Horace M. Hickam, Captains Wendell H. Brookley, Robert E. Selff, John G. Whitesides, 1st Lts. William H. Doolittle, John A. Kase, Frederick I. Patrick, Otto Wienecke, 2nd Lieuts. Frank L. Howard, Arthur R. Kerwin, John W. Stribling, Jr., Durward J. Lowry, Robert A. Brunt and Herbert C. Gibner. The veteran flyers who were with the Air Corps during and since the war were Colonel Hickam, Captains Brookley, Whitesides, Selff, Lieuts. Patrick and Kase.

Captain Brookley, who spent a considerable part of his commissioned service at the Air Corps Materiel Division at Wright Field, and for some years was test pilot, was generally considered one of the most expert pilots in the Air Corps. He was on duty in the Materiel Division Liaison Section, Office of the Chief of the Air Corps, at the time of his death. Captain Selff had also served a tour of duty in the Liaison Section, following which he was assigned to duty on the west coast.

Lieut.-Colonel Hickam, whose last assignment was that of Commanding Officer of the Third Attack Group at Fort Crockett, Galveston, Texas, was the first Chief of the Information Division upon the creation of the Office of the Director of Air Service. He was the father of the Air Corps News Letter and, perhaps because we knew him so well, his untimely death came as a very great shock. A gentleman in the full sense of the word and of an extremely lovable disposition, he made friends wherever he went, and those friends now sadly miss him. He was kind and considerate at all times and invariably had a cheerful word for everyone. Let it not be assumed that he was above issuing reprimands where they were deserved. He did this to the Queen's taste and in a highly colorful fashion, but whenever he took anyone to task his words bore no sting and, best of all, he would dismiss the incident from his mind almost instantly, and if he saw you shortly afterwards he would have the same kindly, cheerful word for you. One remarked about him that "He's the only man who could cuss me out and make me like it."

Of a keen, alert mind, Colonel Hickam, a most outstanding officer, who commanded the utmost respect and the highest admiration of all with whom he came in contact, was the type of leader whom men would follow and fight for to the last gasp. It is not given to every man to possess all these admirable attributes, and the high esteem in which he was held by everyone who was fortunate to know him may readily have been surmised by an outsider had he been present at the Arlington National Cemetery on November 10th, that sad day when his remains were laid to rest, and observed the very large gathering present to pay him their last

respects.

As a token of their esteem, the Galveston Chapter of the Reserve Officers' Association drafted the following Resolution:

"WHEREAS, Our Supreme Commander in Chief has summoned from our ranks for duty on the Eternal Staff Lt. Col. Horace M. Hickam, a gallant officer of the Air Corps, a man who exemplified in every degree the highest attributes of the American gentleman who gives his all to his Country and

WHEREAS, His departure leaves us impressed with the greatness of his leadership, the kindly and considerate care he exercised for the men of his command and his untiring efforts to be of service to his community as well as to his nation

THEREFORE, The Galveston Chapter, Reserve Officers Association, in meeting assembled, do draft this resolution of respect and of sympathy and commend our members to follow the example of this brother officer so that when the Sublime Celestial Bugler rings out his cheery notes we may find ourselves prepared, as he was, to report to Supreme Headquarters ready for duty - and

We direct our Secretary to spread a copy of this resolution on the minutes of our meeting, that the original be sent to the bereaved family, a copy to the Secretary of War, a copy to the Chief of Air Corps and copies to the Commanding General, Eighth Corps Area, and the Adjutant, Fort Crockett.

Ed. L. Owens,
Capt. O.R.C., President."

The Galveston Chamber of Commerce by a standing vote unanimously adopted the following resolution:

"WHEREAS, It has pleased Almighty God in His Infinite Wisdom to call unto Him our friend and associate, Horace M. Hickam, Lieut.-Col. Air Corps, United States Army - a man of highest military ability and accomplishment and sterling personal integrity - a patriot, leader and soldier.

AND WHEREAS - during his association with this body he was at all times untiring in his efforts in behalf of all civic activities and betterments, and always extended his cooperation and that of his command,

AND WHEREAS, the fading note of taps brings the realization of an irreparable loss to the City of Galveston,

NOW THEREFORE BE IT RESOLVED, that the Galveston Chamber of Commerce, acting by and through its Military Affairs Committee, officially records its deep sympathy and regret for his untimely death.

AND BE IT FURTHER RESOLVED that sympathy be extended to the members of his family, and copies of this resolution be delivered to them, to the Commanding Officer, Fort Crockett, Texas; The Commanding General, Eighth Corps Area, Fort San Houston, Texas; the Chief of Air Corps, United States Army, Washington, D.C.; and the Secretary of War, Washington, D.C.

GALVESTON CHAMBER OF COMMERCE,
G. G. Moore,
President."

This compendium of information relating to the Army Air Corps and covering the past year is issued for the information and convenience of those desiring to compile special articles upon any of the subjects contained therein. It is not intended to be comprehensive on any of the subjects treated, but merely to form a summary of the topics of information available. It is also intended to be sufficiently comprehensive to form basic information in any popular write-up concerning the history of the Air Corps.

THE ARMY AIR CORPS FOR 1934

Improved flying efficiency, marked development of aircraft and accessories thereto, aids to flying, outstanding flight performances, construction of barracks, quarters, warehouses and other buildings at fields and stations, improvement of landing fields, etc., were among the leading factors which contributed to the substantial progress made by the Air Corps during the year 1934.

PERSONNEL ✓

At the close of the Fiscal Year ending June 30, 1934, there were 1298 officers commissioned in the Air Corps, Regular Army. In addition to the above, there were 58 second lieutenants of the Regular Army of other branches of the service who were detailed to the Air Corps and undergoing flying training at the Air Corps Training Center. The Air Corps was still 351 officers short of its authorized strength of 1650 commissioned officers.

The enlisted strength of the Air Corps at the end of the Fiscal Year was 14,450, including 313 Flying Cadets, this figure comparing favorably with the strength allotted by the Secretary of War at the end of the Five-Year Air Corps Expansion Program of 14,532.

ORGANIZATION

New Units:

New Air Corps units organized during the year were the 29th, 58th and 74th Pursuit Squadrons. In addition, 10 new Air Corps detachments were established, thus providing one for each of the nine Corps Areas, one for Fort Lewis, Wash., and one for the United States Military Academy at West Point, New York. The detachment for the 8th Corps Area was in existence prior to the past fiscal year.

The First Bombardment Brigade Headquarters and the 28th Communications Section at Langley Field, Va., were demobilized on September 30, 1933, the personnel thereof transferred to the Headquarters G.H.Q. Air Force, organized at that field the following day and transferred to Bolling Field, Anacostia, D.C., on February 28, 1934.

The G.H.Q. Air Force:

The Secretary of War, on December 27, 1934, announced his approval of a test organization of the General Headquarters Air Force, effective at once. At the same time it was announced that Lieut. Colonel Frank M. Andrews, Air Corps, had been designated as the Commander of this centralized air force, with headquarters at Langley Field, Va.

The new General Headquarters Air Force will consist of practically all the combat

elements of the Air Corps in continental United States, together with certain Observation and Service units. There will be very few immediate changes of station of Air Corps units incident to the creation of the new organization, the announcement stated; that the various elements of this force will be at several Army flying fields throughout the country, but will be subject to the orders of the Commander of the central organization and in an emergency will be prepared to concentrate at any point without delay. The head of the General Headquarters Air Force will be directly under the Chief of Staff.

The announcement further stated that "the organization now created is a tentative one. After approximately a year of test, it is hoped that the lessons derived will permit of improvement over the present plan. Although several years may be necessary to achieve a final solution, it may be said that the initial step, alone, constitutes by far the most important and evolutionary step towards modernization of the forces of the United States that has been taken since the World War. The principles involved in this step are transcendental in their full implications, and will doubtless influence the development of other arms as well as of the Air Corps. Opportunity has not yet been given the other arms to modernize to the extent considered necessary for the Air Corps. When such opportunity is accorded, whether in peace or war, it will be necessary to provide for the full mobility and power of all arms necessary in a future war of major extent. The effect on all military organization is likely to be marked.

"While the bulk of the Air Corps organizations are included in the new Air Force, certain elements, such as some observation and administrative units, will remain under Corps Area Commanders. The units assigned to the Central Air Force may be reorganized by the Force Commander so far as may be necessary for the conduct of the test. It is hoped that, in general, there will be a minimum of shifting of personnel to effect the reorganization. The change will be largely a shifting of control."

The General Headquarters Air Force will consist of the following units:

Headquarters of the General Headquarters Air Force and the Headquarters Squadron of the G.H.Q. Air Force - Langley Field, Va.
1st Wing, Headquarters Hamilton Field, Calif.
The 7th Bombardment Group, Headquarters and the 8th, 11th and 21st Bombardment Squadrons - Hamilton Field.

The 19th Bombardment Group, Headquarters and 30th, 32d and 93d Bombardment Squadrons - Rockwell Field, Calif.

The 17th Attack Group - Headquarters and 34th, 73d and 95th Attack Squadrons - March

Field, Calif.

The 88th Obs. Squadron, L.R. Amph. at Hamilton Field, the 38th Obs. Squadron, L.R.L.B. at Rockwell Field and the 89th Obs. Squadron, L.R.L.B. at March Field.

Note: The 88th Squadron is to remain at Brooks Field, Texas, for the present, and the 95rd, 38th and 89th Squadrons will be organized at a later date to be fixed by the War Department.

2nd Wing, Headquarters Langley Field, Va.

The 2nd Bombardment Group - Headquarters and 20th, 49th and 96th Bombardment Squadrons - Langley Field, Va. (The 54th detached from G.H.Q. Air Force to Air Corps Tactical School, Maxwell Field, Alabama.)

The 8th Pursuit Group - Headquarters and the 33rd, 35th, 36th Pursuit Squadrons and the 37th Attack Squadron (attached) - Langley Field, Va.

The 9th Bombardment Group - Headquarters and the 1st, 5th and 99th Bombardment Squadrons - Mitchel Field, New York. The 14th Bombardment Squadron to be organized at Bolling Field, D.C.

The 1st Pursuit Group - Headquarters and the 17th, 27th and 94th Pursuit Squadrons - Selfridge Field, Mich. The 30th Pursuit Squadron now at Selfridge Field to be rendered inactive.

The 18th and 21st Observation Squadrons, L.R. Amph. at Mitchel Field, New York, and Bolling Field, D.C., respectively, and the 41st Observation Squadron, L.R.L.B. at Langley Field. The last named organization to be organized from the 41st School Detachment now at Kelly Field, Texas.

3rd Wing, Headquarters Ft. Crockett, Texas.

The Headquarters and the 9th, 13th and 90th Attack Squadrons - Fort Crockett, Texas. The 51st Attack Squadron, now the 51st School Detachment, Air Corps Tactical School, Maxwell Field, to be organized as Attack Squadron and detached from G.H.Q. Air Force to Air Corps Tactical School. The 3rd Attack Group is to be moved to Barksdale Field before June 30, 1935.

The 20th Pursuit Group - Headquarters and the 56th, 77th and 79th Pursuit Squadrons - Barksdale Field, La. The 87th Pursuit Squadron, when organized, to be detached from G.H.Q. Air Force to Air Corps Tactical School, Maxwell Field.

The 42nd Bombardment, 49th Attack and 43d Pursuit Squadrons to be detached from G.H.Q. Air Force to Advanced Flying School, Air Corps Training Center, Kelly Field, Texas.

The 48th Pursuit Squadron to be detached from G.H.Q. Air Force to Air Corps Technical School, Chanute Field, Ill.

The 21st Airship Group will be assigned as a G.H.Q. Air Force unit. Headquarters and the 9th Airship Squadron, Scott Field, Ill.; 19th Airship Squadron, Langley Field, Va., (attached to 2nd Wing).

The stations of various Service squadrons will be as follows:

70th and another Service Squadron to be organized later, at Hamilton Field, Calif.; 70th at Rockwell Field; 64th at March Field; 58th and 59th at Langley Field; 61st at Mitchel Field; 57th and another to be organized later, at Selfridge Field; 60th at Ft.

Crockett (to be moved to Barksdale Field before June 30th, 1935); 71st at Barksdale Field and 24th at Scott Field.

FLYING TRAINING

Flying Cadets:

An important change affecting Flying Cadets was the approval by the War Department of a plan to continue them under that status for an additional year of training with Air Corps tactical units following their graduation from the Advanced Flying School. This plan went into effect with the advanced class which graduated from Kelly Field, Texas, in February, 1934. The practice of awarding students the rating of "Airplane Pilot" upon their graduation from the Advanced Flying School continues in effect, but Flying Cadets are not commissioned in the Air Reserve until after they have completed their additional year of training with tactical units, and provided the proficiency they have attained as military pilots warrants their being so commissioned. At the end of that time they are given another year of active duty under their Reserve commissions with Air Corps tactical squadrons, if funds are available.

Students Matriculating and Graduating From the Air Corps Training Center:

Commissioned officers, enlisted men and candidates from civil life, are selected each four months to attend the Primary Flying School at Randolph Field, near San Antonio, Texas, since there are three entering classes each year. During the calendar year 1934, a total of 60 officers of the Regular Army and 371 Flying Cadets, or a grand total of 431 students, started training at the Air Corps Training Center; 145 Flying Cadets entering the March, 1934, class at Randolph Field, 150 Flying Cadets the July, 1934, class, and 60 officers and 76 Flying Cadets the October, 1934, class. There were graduated from the Air Corps Advanced Flying School at Kelly Field, Texas, during the calendar year 1934, a total of 203 flying students, comprising 56 officers of the Regular Army, 10 graduates of the U.S. Naval Academy who were not commissioned in the Navy because of lack of vacancies and who received Flying Cadet appointments, and 140 Flying Cadets. The March, 1934, class graduated 7 officers and 63 Flying Cadets; the July, 1934, class, 5 officers and 57 Flying Cadets, and the October, 1934, class, 44 officers and 30 Flying Cadets.

Instrument Flying:

The Air Corps completed and placed into practical use the only instrument landing system which proved itself by actual performance. Experiments in instrument or blind landings had been conducted by the Air Corps for a long period of time. The system reached such a degree of practicability that it warranted the training of pilots in its use, and some of them had been so trained. When the Army Air Corps took over the operation of the Air Mail, it was afforded the opportunity of extending the training of its pilots in instrument landings. Steps were initiated looking to the eventual installation on all airplanes of the Transcontinental

Route between Newark, N.J., and Oakland, Cal., of instrument landing equipment, as well as the establishment of ground installations for instrument landings at the main terminals of that route.

Twelve of the new Martin P-10 bombing planes were equipped for instrument landings, six of them being sent to the Western Zone of the Army Air Corps Air Mail Operations, to operate out of Oakland, Salt Lake City and Cheyenne, and the remaining six to the Eastern Zone for operation over various routes in that area. Officers who had been trained in instrument landings were assigned the duty of piloting these airplanes. The first instrument landing station for Air Mail use was completed at Newark, the eastern terminal of the transcontinental route, on May 3d, the day before the Army inaugurated its fast air mail schedule across the continent. Tests of this installation were conducted on May 8th, under the direction of Captain Albert F. Hegenberger, Air Corps, of the Materiel Division at Wright Field, Dayton, Ohio. The actual instrument flying and landing at Newark on that day was performed by Captain James E. Parker, Air Corps, former test pilot at Wright Field, who received training in instrument landing in 1933. These tests proved highly successful.

The Air Corps system of instrument (fog) landing was successfully applied to high speed tactical airplanes, especially the Martin Bomber (B-10), as previously stated. In service tests at Wright Field, over 300 instrument landings were made, in which 26 pilots from various stations throughout the service received instruction and training in fog landing procedure. Upon completion of these tests, the Air Corps landing equipment was turned over to the Department of Commerce where it received, after extensive tests by that Department, the unqualified indorsement of the Director of Aeronautics, and has been adopted for the commercial airways of the country.

The officers who qualified in instrument landings will later be sent to various Air Corps posts, as soon as instrument landing equipment can be completed and furnished at those posts. A total of 43 trucks for instrument landing and guiding stations are now being purchased out of Public Works Funds for the various tactical units in the Air Corps.

THE AIR CORPS TECHNICAL SCHOOL

During the Fiscal Year ending June 30, 1934, 30 Air Corps Regular Army officers, 335 Air Corps enlisted men and 4 National Guard enlisted men graduated from the Air Corps Technical School at Chanute Field, Pantoul, Ill. At this school various courses are taught students in the trades allied to aviation, such as airplane or engine mechanics, aircraft armorers, radio mechanics and operators, aircraft machinists, aircraft welders, parachute riggers and aerial photographers. Student officers usually pursue the courses in aerial photography, aircraft maintenance, aircraft armament or radio communications.

AIRPLANES

Purchase of New Airplanes:

Announcement was made by the Secretary of War on January 4, 1934, that the sum of

\$7,500,000, allotted by the Public Works for the Army Air Corps, will be spent for purchasing various types of combat airplanes, including radio equipment, machine guns, spare parts, spare engines, and other necessary equipment.

In June, 1934, the Assistant Secretary of War, Hon. Harry H. Woodring, approved the award of contracts to the Glenn L. Martin Co., of Baltimore, Md., for 81 Bombing planes at a total cost of \$3,195,450, and to the Wright Aeronautical Corporation, of Paterson, N.J., for 280 airplane engines at a total cost of \$1,705,733.

In the month of December announcements were made of the award of contracts for new airplanes for the Army Air Corps as follows:

A contract in the total amount of \$1,993,700 to the Consolidated Aircraft Corporation, Buffalo, New York, for two-seater Pursuit type airplanes.

A contract for 71 Observation type airplanes to the Douglas Aircraft Company, Inc., of Santa Monica, Calif., in the total amount of \$1,655,394.

A contract for 35 Basic Training airplanes to the Seversky Aircraft Corporation, New York City, in the total amount of \$754,733.

A contract for 110 Attack type airplanes to the Northrop Corporation, Inglewood, Calif., in the total amount of \$1,896,400.

Development of New Airplanes:

Several types of military aircraft having outstanding performance characteristics were produced during the year, these being the P-29 (Boeing) single-seater Pursuit, equipped with a supercharged Pratt & Whitney (R-1340) engine, and the 2-place Pursuit, Consolidated Aircraft Corporation (P-30), equipped with a supercharged Curtiss-Wright (V-1570) engine. The P-29 is a low-wing monoplane of all-metal construction with enclosed cockpit and retractable landing gear. This is the first airplane of the Pursuit type to possess both of these features. This airplane, which is extremely clean in streamlining and design, is equipped for installation of a radio receiver and transmitter. The P-30 is also a low-wing monoplane of all-metal construction, having a monocoque fuselage, side-type supercharger and retractable landing gear.

Two Bombardment type planes, the Glenn L. Martin (B-10) and (B-12), were placed in service, and development work continued through designs, studies and improved types of engines.

Development work on the Attack airplane centered around single engine, low-wing monoplane types. A satisfactory model was developed which meets present requirements for this type, and its procurement was undertaken.

There were no new developments in connection with the Observation type airplane, save that one B-10 Bombardment plane was converted into an air force observation type for service test, and work was continued on an Amphibian type airplane, the Douglas (YOA-5), for delivery in the near future.

Development of Accessories:

In aerodynamics, improved methods were evolved for making controllable-propeller computations and performance calculations of airplanes with supercharged engines. A study of lift-increasing devices indicated that a substantial decrease in the landing distance an airplane normally requires could be made by the use of flaps.

A marked advance was made in the design of cantilever landing gear, and new methods were devised for testing the landing gear of large, heavy aircraft for which the existing testing apparatus proved inadequate.

Considerable progress was made in the study of the cause and elimination of propeller vibration and propeller cone troubles. The welded hollow steel propeller blade was perfected and produced in a greater variety of sizes than heretofore. Development of the solid steel propeller blade was also initiated.

Activities were directed towards the development of spot welding as a means of fabricating aircraft structures. For this purpose special equipment was installed at Wright Field, Dayton, Ohio, for welding aluminum alloys and stainless steel by both the spot and seam processes, and specifications were prepared to enable contractors to install this equipment and conduct the experimental manufacture of low stressed parts.

In the matter of lubricating oils, suitable grades having a flat viscosity curve and low pour point were developed for service test to permit the starting of engines at low temperature without excessive consumption.

Synthetic rubber was developed and adopted for several articles of standard equipment, such as refueling hose, fuel connections in gasoline lines, balloon valve seats and segregator gaskets. Tires and tubes made of this material were also submitted for service test.

Streamline casings for landing wheels were made standard for all new equipment, and other types of tires and tubes reduced to substitute standard for use on older equipment.

Development of Engines:

In aircraft engine development, efforts were devoted principally to refinements therein as well as accessories, embodying new features. Thus, new models of older type engines, but with increased power outputs and with supercharging to higher altitudes, were placed in service. In connection with supercharger development, a new alloy was developed for turbine buckets which in laboratory tests proved superior to the previous materials used.

CONSTRUCTION WORK AT FIELDS AND STATIONS

During the year, construction work was in progress at many of the Air Corps fields and stations in the United States, this having been made possible through the allocation for that purpose of Public Works funds and funds appropriated in the Relief Bill. Under Public Works funds, construction work was initiated at Berkeley Field, La.; Hamilton Field, Calif.; Langley Field, Va.; Maxwell Field, Ala.; Marshall Field, Kansas; Middletown Air Depot, Pa.; Mitchel Field, New York; Patterson Field, Ohio; Phillips Field, Md.; Pope Field, N.C.; Post Field, Okla.; Randolph Field, Texas; Selfridge Field, Mich.; and Wright Field, Dayton, Ohio. This construction work embodied such projects

as barracks, quarters, hangars, warehouses, gasoline storage systems, roads and walks, drainage systems, heating plants, and the grading and improvement of landing fields. All of these projects were in various stages of completion prior to the close of the fiscal year, and, in the majority of instances, were more than 50% completed.

AIDS TO FLYING

The development of avigational aids to flying resulted in the procurement of improved calculating machines, a small experimental pendulous sextant, and a new drift meter of design superior to that now in use.

Instrument development has produced improved types of gyro-driven instruments capable of reliable operation in extremely cold temperatures, altimeters, automatic pilots, de-icers, electric fuel gauges, and a reserve-and-main tank fuel switch-over signal device which also prevents vapor lock in fuel lines.

New night flying equipment was procured for one field, and the lighting system of seven other fields was revised. Two large day-and-night wind indicators were set up for service test.

A new method of towing targets, using Manila rope in place of steel cable, was initiated, permitting greater flexibility of operation and resulting in reduced expense.

A new type of tow target was developed by the Materiel Division, which is capable of being towed at speeds up to 200 miles per hour, or double the speed of previous types. This increased speed is due to a change in target design, the new type being almost a straight sleeve, opened at each end, imposing very little drag other than the frictional drag of the fabric. The former design was a semi-dirigible type, cone-shaped, closed at the rear, and the mouth held open by a large ring. The weight of air imprisoned in the cone reduced the speed of the plane considerably. This new target was developed in two sizes, one 3 ft. in diameter and 30 feet long for anti-aircraft practice, and one 2 ft. in diameter and 15 feet long for aerial gunnery practice.

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:

Captain Albert F. Hegenberger, Air Corps, in recognition of his most valuable contribution to the science of aviation in connection with instrument flying, was, on May 16, 1934, presented the Distinguished Flying Cross Oak Leaf Cluster by the Secretary of War at the Army War College Parade Ground, Washington, D.C. It was at Wright Field, under Captain Hegenberger's supervision, that the instrument landing system previously mentioned had reached its present efficiency and practicality. This officer made the first solo instrument landing on May 9, 1932, flying in an airplane with a hooded cockpit which excluded all vision of outside surroundings.

A formal military ceremony featured the presentation of the decoration to Captain Hogenberger. He previously received the Distinguished Flying Cross for his participation with Captain Lester J. Maitland in the non-stop flight from California to Hawaii in the Spring of 1927.

Captain Russell L. Meredith, United States Army, Retired, was presented the Distinguished Flying Cross on April 24, 1934, at Governors Island, N.Y., for heroism while participating in an aerial flight on February 7, 1923. Upon learning that an injured man was lying at the point of death on Beaver Island in Lake Michigan, Captain Meredith (then 1st Lieut., Air Service) voluntarily made a hazardous flight from Selfridge Field, Mich., for the purpose of taking medical aid to the patient, no other means of transportation being possible owing to the frozen condition of the lake. Extremely dangerous flying conditions were encountered, blinding snow and mist destroying the visibility, thus making it necessary to land along the shore in order to determine the location of the island. In so doing it was discovered that the compass had an error and that the supply of gasoline was limited. Due to the urgency of the mission, however, Lieut. Meredith continued the flight, thus enabling a doctor to reach the patient in time to be of service.

First Lieut. Cornelius W. Cousland, Air Corps, was awarded the Distinguished Flying Cross for heroism and extraordinary achievement displayed while piloting a Douglas amphibian airplane over Panama Canal Zone on May 31, 1934. When about 400 yards from the edge of Gatun Lake, at an altitude of approximately 1400 feet, mechanical failure caused a portion of the right motor to penetrate the pilot's cockpit with such force that the copilot was fatally injured and fell across Lieut. Cousland and the controls. The plane started into a spin, but Lieut. Cousland disregarding his own serious injuries from flying glass, ordered his passengers to retain their seats and by his courage, presence of mind and complete mastery of the art of piloting, maneuvered the disabled aircraft to a safe landing on the surface of the stum-studded lake.

Major William E. Kepner, Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, were awarded the Distinguished Flying Cross for extraordinary achievement while participating in an aerial flight. Major Kepner was pilot and commander, and Captains Stevens and Anderson, Scientific Observers of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight, which took off from the vicinity of Rapid City, South Dakota, July 28, 1934, and landed near Loomis, Nebraska, that same day. Each officer assisted in piloting the balloon into the stratosphere to an altitude of 70,315 feet, and in making continuous scientific observations en route, and when the balloon became disabled through circumstances beyond human control, did attempt, under most adverse and hazardous conditions, to land successfully the disabled aircraft in order to preserve the scientific records that had been obtained. By the exercise of cool judgment and foresight under those conditions, certain scientific records were saved and the disabled aircraft was abandoned only when it was clearly evident that not to do so would prove disastrous to human life.

The Cheney Award:

The Cheney Award, established by the mother and sister of the late 1st Lieut. William E. Cheney, Air Service, who was killed in an air collision at Foggia, Italy, during the World War, as a perpetual memorial to him, was presented for the year 1933 to 2nd Lieut. William L. Bogen, Air Reserve; Staff Sergeant Doy D. Dodd and Sergeant Thomas J. Rogers, Air Corps. This award, which is bestowed annually by the Chief of the Air Corps for an act of valor or 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, consists of a bronze plaque with the name of the recipient engraved thereon and a substantial cash award derived from the interest accruing annually from a trust fund of \$15,000 set aside by the donors. The acts of valor and self-sacrifice for which the presentation of the Cheney Award was made occurred at Fort Clark, Texas, on May 4, 1933. Lieut. Bogen, pilot of an Army Transport plane, was en route from Fort Crockett to March Field, Calif., with Master Sergeant Joe Grant, Staff Sergeant Doy D. Dodd, Sergeants J.M. Dunlavy and Thomas J. Rogers, and Corporal Leo E. Maupin as passengers. While attempting to make a landing at Fort Clark, in order to refuel the plane, a treacherous gusty wind jeopardized a safe landing. The pilot opened the throttle to try another landing, but the plane was sluggish in regaining its flying speed, the landing gear dragging through the trees and the propeller chopping the highest branches. The airplane continued flying for several seconds, gaining a little altitude, but finally crashed head-on into a grove of tall pecan trees, immediately bursting into flames, crashing 50 feet to the ground and finally exploding.

Sergeant Rogers, without regard for safety of his own life and limb, delayed his exit from the burning wreckage in order to assist Sergeant Dunlavy, who was stunned and in a dazed condition as a result of the crash. After aiding Sergeant Dunlavy, and perhaps because of having aided him, Sergeant Rogers himself became entangled in the wreckage and was extricated only because of the efforts of others present, and then only after receiving severe burns. Lieut. Bogen and Sergeant Dodd, after extricating themselves from the wreckage of the burning airplane, observing the plight of Corporal Maupin who, caught in the wreckage, appeared unable to free himself, reentered the flaming mass of the wrecked airplane without regard to their own personal safety, liberated the imperiled passenger and led him to safety.

The Soldier's Medal:

Lieut. Bogen and Sergeants Dodd and Rogers also were awarded the Soldier's Medal by the War Department in recognition of their heroic conduct, which was characterized as measuring up to the best traditions of the military service.

The Mackay Trophy:

The Mackay Trophy, presented to the War Department in 1912 by Mr. Clarence Mackay and since that time, except during the World War, awarded annually to Air Corps officers for each year's most outstanding flight, was for the year 1933 tendered to Captain Westside T. Larson,

Air Corps, in recognition of his pioneering flights in connection with the development of methods and procedure of Aerial Frontier Defense. The flights performed by Captain Larson involved instrument take-offs from and landings on both land and water, proceeding to designated points at sea and returning therefrom under instrument flying conditions. Through his efforts and untiring zeal, as exemplified by his flights, various obstacles incident thereto were surmounted and the way was paved for the training of a number of Air Corps pilots in the technique of this highly important art.

FLIGHTS

The Alaskan Flight:

The most outstanding achievement credited to the Army Air Corps in recent years was the flight of ten Martin Bombers (B-10) from Washington, D.C., to Fairbanks, Alaska, and return, which involved a total distance estimated at approximately 8,290 miles. Led by Lieut. Colonel Henry H. Arnold, Air Corps, Flight Commander, the flight, which comprised 14 officers and 28 enlisted men, took off from Bolling Field, D.C., on the morning of July 19, 1934, and reached Fairbanks, Alaska, at 11:30 a.m., July 24th. The total flying time for this trip was 25 hours and 30 minutes, the B-10 airplanes averaging a speed of approximately 157 miles an hour over the distance of 4,000 miles.

Stops on route to Fairbanks were made at Dayton, Ohio; Minneapolis, Minn.; Winnipeg, Manitoba, Canada; Regina, Saskatchewan; Edmonton, Alberta, Prince George, British Columbia and White Horse, Yukon Territory. During the stay in Alaska, over 20,000 square miles of territory was photographed from the air by the Army airmen.

The return journey was made via Juneau, Alaska, and Seattle, Washington, the start from Fairbanks being made on the afternoon of August 16th. The trip from Juneau to Seattle, involving a distance of 990 miles, was made in a flying time of 5 hours and 40 minutes, or at an average speed of 175 miles an hour. It was the longest leg of the entire journey and was made over the water, following the coast line. Thus for the first time in aviation history, Alaska was linked with continental United States by a non-stop flight of American airplanes. The flight reached Washington on August 20th. The return trip from Fairbanks to Washington, a distance of 4,290 miles, was made in a flying time of 26 hours or at an average speed of 165 miles an hour. Thus, for the entire journey, the total flying time was 51 hours and 30 minutes, and the average speed approximately 161 miles an hour.

Only one minor accident marred the otherwise perfect performance of the new bombing planes. Motor failure necessitated a forced landing in the water at Cook Inlet. The plane was towed ashore, promptly repaired, and placed in perfect flying condition.

Personnel participating in the flight in addition to Lieut. Colonel Arnold, were Majors Ralph Royce, Hugh J. Knerr, Malcolm C. Grow;

Captains Harold M. McClelland, Ray A. Durr, John D. Corkille, Westside T. Larson; 1st Lieuts John S. Griffith, Ralph A. Snavely, Charles H. Howard, Rex McClellan, Lawrence J. Carr; 2nd Lieut. Leonard T. Harman; Master Sergeants Walter E. Berg, Artie L. Revert; Technical Sergeants William B. Moorehead, Gregory A. Mitchell, Adolph Cattarius; Staff Sergeants Plato R. Miller, Anton F. Gill, Ruz C. Hayes, Marlin Eddy, Roy White, Gustav Sonneburg, Lynn H. McQuiston, Henry V. Puzenski; Sergeant Edward W. Cushing; Corporals Arthur R. Loftus and Vance E. Larr.

Two advance officers, Captains Ross G. Hoyt and Edwin B. Bobzien, Air Corps, preceded the flight to Fairbanks. Both pilot d C-38 Observation planes, the former being accompanied by Corporal Wilmer B. Hoffman and the latter by Private Lewis Krause. Upon the arrival of the Alaskan Flight at Fairbanks, these four men were picked up as flight members and used as photographers and navigators on photographic missions.

Captain Carlyle H. Ridenour, Air Corps, was the advance Supply Officer, but did not arrive at Fairbanks until July 30th. He was used as navigator during the photographic missions, in addition to assisting the Supply Officer.

Captain George W. Goddard, accompanied by Technical Sergeant Samuel T. Bush and Sergeant Anton Hansen, traveling as did Captain Ridenour, by rail and water, arrived at Fairbanks on July 27th with photographic equipment, and set up a field photographic laboratory. He acted as photographer during photographic missions.

The personnel above named returned to their home stations shortly following the departure of the Alaskan Flight on their homeward-bound journey.

Flights in a Humanitarian Interest:

Army airmen in the Panama Canal Zone early in the year were called upon to perform one of those flying missions in a humanitarian interest which they had often accomplished on many occasions in the past. Personnel from the American Legation, Republic of Panama, were the victims of a serious automobile accident which occurred near Rio Hato, 80 miles southwest of Albrook Field, on the Pacific side of Panama. Notified of the accident, the Commanding General of the Panama Canal Department ordered the Commanding Officer of Albrook Field immediately to dispatch an airplane to the scene of the accident and transport the injured persons to the Gorgas Hospital.

The airplane, a C-29 Transport, departed from Albrook Field at 4:20 p.m., landed at Rio Hato at 5:30 p.m., and again made the trip in 40 minutes. The persons involved in the accident were three men, three women and a baby. It is estimated that it would have required four hours to transport the injured persons by automobile, the road connecting Rio Hato with Panama City being rather rough. The passengers traveled in perfect comfort during the 40-minute flight.

On June 13, 1934, Army airmen in the Panama Canal Zone again performed an errand of mercy. Cootapeque, a city in Honduras, was visited by a destructive flood, as a result of which many people were left homeless. There were no tents or material for their creation available, and

the Honduran Minister wired the American Minister at Panama, requesting that Army tents be rushed by airplane from the Canal Zone to Tegucigalpa, Honduras, for the use of the survivors of the flood. Eleven bombing planes, manned by 13 officers and 25 enlisted men, promptly transported fifty tents to the stricken community. Needless to say, the Government of Honduras was warmly appreciative of the prompt aid rendered by the Army Air Corps.

A month later, an Army airplane carried more than 800 pounds of clothing from San Jose, Costa Rica, to San Salvador, where a tornado caused much suffering among the inhabitants. The American Minister to Costa Rica stated that the act of generosity on the part of the United States in placing the Army airplane at the disposition of the Costa Rican Red Cross had attracted considerable attention.

Intercepting an Army Transport at Sea:

Intercepting an Army Transport about 130 miles out at sea under conditions of limited visibility was a routine air navigation problem accomplished by Air Corps personnel, stationed at Rockwell Field, Coronado, Calif., during the month of May. The flight was made in an Amphibian plane, with Captain Westside T. Larson as pilot, Lieut. B.W. Goez as aviator and Lieut. Roger V. Williams as radio operator. A radio message was received by the Commanding Officer of Rockwell Field from the Transport REPUBLIC, bound for San Francisco, giving its estimated position at 4:00 a.m., the following day. The interception problem was handled by dead reckoning. After the necessary computations were made, the airplane took off from Rockwell Field at 7:00 a.m., and in slightly more than an hour and a half was circling over the Army Transport amidst the cheers and hand-waving of the passengers who swarmed the decks of the vessel.

The Air Races at Cleveland, Ohio:

One Squadron of 18 Pursuit planes from Selfridge Field, Mt. Clemens, Mich., and three Pursuit planes from the Air Corps Tactical School at Maxwell Field, Montgomery, Ala., participated in the National Air Races at Cleveland, Ohio, August 31 - September 3, 1934. The Squadron, led by Captain George F. Tourtellot, Air Corps, gave demonstrations daily of maneuvers in race formation. The three pilots from Maxwell Field, who were termed the "Men on the Flying Trapes" performed wing-to-wing maneuvers which are difficult and hazardous for a single acrobatic plane. Led by Captain C.L. Chennault, the trio, whose two outboard fliers were Lieuts. H.S. Hansell and J.E. Williamson, did loops, Immelman turns, wingovers, inverted maneuvers and finally two-thirds of a spin as if one hand only were on a single stick.

National Elimination Balloon Race:

Two free balloon teams, representing the Army Air Corps, participated in the National Elimination Balloon Race, which started from Birmingham, Ala. July 31, 1934, viz.: Captain William J. Flood, Air Corps, pilot, with 1st Lieut. E.R. Gillespie as aide, and 1st Lieut. Haynie McCormick, Air Corps, pilot, with 1st Lieut. J.P. Kirkendall, Air Corps, as aide. The balloon piloted by Captain Flood finished in second place, a distance of 189.1 miles being covered.

The Army Corps took over the operation of the Air Mail on February 10, 1934, pursuant to an Executive Order of the President of February 9th. The actual carrying of the mail began on February 19th, and terminated on June 1st. Three territorial zones were established, the Eastern Zone, with Headquarters at Newark, N.J.; the Central Zone, with Headquarters at Chicago, Ill., and the Western Zone, with Headquarters at Salt Lake City, Utah.

Nine air mail routes were established in the Eastern Zone, four of which were with Newark as the starting point and terminals as follows: Boston, Chicago, Miami and St. Louis. The five others were from Washington to Cleveland; Cleveland to Memphis, Tenn.; Atlanta, Ga. to St. Louis, Mo.; Detroit, Mich., to Toledo, Ohio, and Chicago to Jacksonville, Fla.

The four routes of the Central Zone were from Chicago to Dallas, Texas; Chicago to Cheyenne, Wyoming; Memphis, Tenn., to Fort Worth, Texas, and St. Louis to Kansas City, Mo.

The four routes of the Western Zone were from Salt Lake City to San Diego, Calif., Salt Lake City to Seattle, Wash.; Cheyenne to Pueblo, Colo.; and Cheyenne to San Francisco, Calif., via Salt Lake City.

The mileage of the above-named routes totalled 13,294. Taking into consideration the number of trips flown daily, there were a total of 40,630 miles scheduled to be flown each day.

Air Mail operations were suspended on March 10th and resumed on March 19th, with the number of routes reduced, viz.: three for the Eastern Zone, two for the Central and four for the Western Zone. One route was added to the Central Zone on April 8th (Chicago to St. Paul, Minn.) and this route later extended to Fargo, North Dakota. The above routes totalled 7,249 miles. Taking into consideration the number of trips flown daily, there were a total of 25,622 miles scheduled to be flown each day.

Air Mail operations by the Air Corps on these ten routes were terminated as follows: four on May 7th, one each on May 8th, 9th, 12th, 16th and 17th, and the last one on June 1st.

The total amount of mail flown was 777,389 pounds; the mileage on scheduled trips flown totalled 1,690,185, and the hours of scheduled trips flown totalled 12,897.44. In addition to the hours flown actually carrying the mail, 29,458 hours were flown on such missions as mail administration, mail engineering and mail training.

There was a unanimity of opinion in all circles that the winter of 1934 was the most severe this country had experienced in many years. Despite the difficulties which beset the Air Corps during the air mail operations, principally due, as before stated, to a most unusual and prolonged stretch of bad weather, not a single pound of mail was lost. In this connection, it might be interesting to note that the mail lost or destroyed by commercial firms carrying air mail amounted to 4,365 pounds in 1930; 2,807 pounds in 1931; 1,640 pounds in 1932, and 2,807 pounds in 1933, or an average per month of 388 pounds in 1930, 234 pounds in 1931, 111 pounds in 1932 and 172 pounds in 1933.

On the last air mail trip from the Pacific

to the Atlantic Coast, that is, from Oakland, Calif. to Newark, N.J., on May 8, 1934, a remarkable record of 14 hours and 8 minutes elapsed time was established. Six Army pilots relayed the load of mail across the American continent, flying Martin Bombers (B-10) and Curtiss (A-12) Attack planes, at an average speed for the entire trip of 2,718 miles, of 191 miles per hour, including stops. Martin Bombers were used in the Western Zone from San Francisco to Cheyenne, and in the Eastern Zone from Chicago, Ill., to Newark, N.J. The A-12 Attack planes were utilized in the Central Zone from Cheyenne to Chicago. First Lieutenant Robert L. Schoenlein, Air Corps, in a Martin Bomber (B-10) started the record run from San Francisco at 3:20 a.m., Eastern Standard Time, and covered the distance of 671 miles to Salt Lake City, Utah, at an average speed of 200 miles per hour. First Lieut. Carl B. McDaniel, Air Corps, also flying a B-10, made the next leg of the flight to Cheyenne, a distance of 415 miles, at the same rate of speed as Lieut. Schoenlein, arriving at 8:30 a.m.

Picking up the rail at Cheyenne, an A-12 Attack plane, piloted by 2nd Lieut. Craven C. Rogers, Air Reserve, covered the distance of 482 miles to Omaha, Nebraska, at an average speed of 165 miles per hour. At 11:23 a.m., Captain John D. Corkille, Air Corps, piloting an A-12 Attack plane, resumed the journey and covered the distance of 426 miles to Chicago at an average speed of 157 miles per hour. Both Captain Corkille and Lieut. Rogers were handicapped by headwinds in their flight across the Central Zone.

Departing from Chicago at 2:15 p.m., Lieut. Murl Estes, Air Reserve, piloting a Martin Bomber (B-10), covered the 318 miles to Cleveland at an average speed of 208 miles per hour. The last leg of the transcontinental trip from Cleveland to Newark was covered by 1st Lieut. Elwood R. Quesada, Air Corps, also piloting a B-10, in the remarkably fast time of one hour and 40 minutes, or at an average speed for the distance of 406 miles, of 243 miles per hour. Lieut. Quesada arrived at Newark at 5:23 p.m., Eastern Standard Time.

The previous record for a transcontinental air mail trip, made by a commercial company, from Los Angeles to Newark, via Albuquerque, New Mexico; Kansas City, Mo., and Columbus, Ohio, a distance of 2435 miles, was 13 hours and 5 minutes, or at an average speed of 136 miles per hour. In this case the same airplane was used during the entire trip, and hence the mail cargo was not transferred from plane to plane, only changes of pilots being made en route. The transcontinental air mail trip flown by the Air Corps was 247 miles longer than that covered by the commercial airplane and involved five intermediate stops where mail was transferred despite which fact an average speed of 191 miles per hour was maintained for the entire distance.

On a speed test mail flight on May 14th, from Jacksonville, Fla., to Newark, N.J., a distance of 865 miles, 1st Lieut. Charles W. O'Connor, Air Corps, accomplished the jour-

ney in a flying time of 4½ hours, or at an average speed of 192 miles per hour. Stops en route were made at Charleston, S.C., and Pope Field, Fort Bragg, N.C.

SCIENTIFIC FLIGHTS

In addition to the National Geographic Society-Army Air Corps Stratosphere Flight, previously mentioned in connection with the award of the Distinguished Flying Cross to Major Kepner and Captains Stevens and Anderson, the Air Corps at various periods of the year undertook special flights for scientists of the Massachusetts Institute of Technology and the California Institute of Technology, for the purpose of aiding them in the study of meteorology, cosmic rays, and the development of new systems to be employed in the future study of meteorology.

RADIO COMMUNICATIONS

The increased employment of radio communication in conjunction with Air Corps operations was occasioned by new and improved equipment, consisting of new frequency meters, radio equipment test sets, radio receiver oscillators, airplane microphones, and the standardization of long range universal frequency transmitters. Improved aircraft radio reception was accomplished through the localizing and neutralizing of radio interference and the use of a two-wire ungrounded system.

MANEUVERS

Due to budgetary limitations, no combined Air Corps maneuvers were held in the Calendar Year 1934.

For a period of two weeks, from August 26th to September 8th, inclusive, a General Headquarters Command Post Exercise, purely theoretical in nature, was held by the War Department for the purpose of affording field training to higher commanders and staffs and to check existing plans and determine the practicability of the Four Army Organization.

The participation of the Army Air Corps in this Exercise from September 2nd to 8th was intended to bring the General Headquarters Air Force into action for the first time and to serve to develop its mobility and striking power.

The Headquarters G.H.Q. Air Force was located at Eggen Air Arsenal, N.J., and consisted of 12 officers from the Office of the Chief of the Air Corps, Washington, D.C., with Brigadier General Oscar Westover, Assistant Chief of the Air Corps, as commander. Staffs of higher Air Corps units which met at this locality to discuss and plan the functioning of the G.H.Q. Air Force in war were as follows:

Headquarters of the Third Attack Group, Ft. Crockett, Galveston, Texas, represented by 6 officers, assisted by 5 enlisted men.

Headquarters of the First Pursuit Wing, Selfridge Field, Mich., represented by 6 officers, assisted by 6 enlisted men.

Headquarters of the Second Bombardment Wing, Langley Field, Va., represented by 6 officers, assisted by 6 enlisted men.

Headquarters of the Ninth Observation Group, Mitchel Field, N.Y., represented by 6 officers, assisted by 5 enlisted men.

Headquarters of the Twelfth Observation Group, Brooks Field, Texas, represented by 5 officers, assisted by 5 enlisted men.

Headquarters Squadron, G.H.C. Air Force, with one officer and 12 enlisted men from Bolling Field, D.C.

This Command Post Exercise was intended to develop clearly the teamwork that is so essential for carrying on successful operations against an enemy whose operations may combine every modern agency or weapon of warfare. The experience gained by commanders and staff officers in the formulation and execution of plans for the employment of the General Headquarters Air Force throughout the various phases of warfare was believed to be of incalculable benefit, particularly at this time when the Army is organizing this highly mobile and powerful fighting unit and must know more about its powers and limitations.

The only flying incident to the Command Post Exercise was that performed by the personnel of the Alaskan Flight. With a few minor changes in personnel, the flight of 10 Martin Bombers (B-10) under the leadership of Lieut. Colonel H.H. Arnold, flew across the continent from March Field, Riverside, Calif., to Mitchel Field, N.Y., to demonstrate the rapidity with which the movement of Air Corps combat units from coast to coast could be accomplished. In this trip across the continent, excellent progress was made as far as Kansas City, Mo., but unfavorable weather conditions eastward necessitated a change in the course to a southerly direction via Shreveport, La.; Montgomery, Ala., and Atlanta, Ga. Bad weather also delayed the flight at Atlanta.

When the flight landed at Langley Field, Va., it remained there for about an hour to simulate the loading of bombs, and then proceeded to Mitchel Field, from which point flights were made to several localities on the East Coast, including Baritan Arsenal to simulate bombing operations.

Minor maneuvers in which the Air Corps participated during the calendar year 1934 were as follows:

Combined Maneuvers at Fort Humphreys, Va., May 16, 1934.

General Field Exercises at Fort Sill, Okla., June 5-9, 1934.

Cavalry Maneuvers at Fort Riley, Kansas, April 10-20, 1934.

Army pilots from Langley Field, Va., flying in 11 Bombardment, 20 Pursuit and 3 Transport planes were in attendance at the All-American Air Races, held at Miami, Fla., January 11-13, 1934, this trip enabling them to receive valuable aviation training.

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ADVANCED AVIGATION TRAINING AT ROCKWELL FIELD

Orders were recently issued by the War Department directing 20 Air Corps officers to proceed from their proper stations to Rockwell Field, Coronado, Calif., for the purpose of receiving instruction in advanced aerial navigation, commencing January 11, 1935, and

extending over a period of six weeks.

These 20 officers include Major Charles B. Oldfield, 1st Lieut. Milton J. Smith and 2nd Lieut. Samuel O. Redetzke from Brooks Field, Texas; Captain Edward D. Jones, Randolph Field, Texas; 1st Lieut. John S. Griffith, Kelly Field, Texas; 1st Lieut. Robert F. Tate and 2nd Lieut. William C. Mills, Fort Crockett, Texas; Captain Moz McClellan, Bolling Field, D.C.; Captain Caleb V. Haynes, Langley Field, Va.; 2nd Lieut. Hugh A. McCaffery, Aberdeen Proving Ground, Md.; Captain Frank D. Hackett, 1st Lieut. Benjamin E. Kelsey and 2nd Lieut. Merrill D. Burnside, Wright Field, Ohio; Captain Harold H. Carr, Scott Field, Ill.; 1st Lieut. James E. Parker, Selfridge Field, Mich.; Major Junius W. Jones and Captain Samuel M. Connell, Chanute Field, Ill.; Captain Charles M. Cummings, National Guard Bureau, Washington, D.C.; 1st Lieut. George R. Acheson, Mitchel Field, N.Y.; and Captain Edwin B. Bobzien, Logan Field, Baltimore, Md.

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NEW METHOD OF DISSEMINATING WEATHER INFORMATION

According to a recent issue of the Air Commerce Bulletin, published by the Bureau of Air Commerce, radio transmission of the facsimile of a typed or handwritten message may be a future method of disseminating weather information on the Federal Airways System, if experiments now under way by the Department of Commerce prove successful. A system of radio facsimile transmission has been given a preliminary test by the Bureau of Air Commerce with favorable results.

The Bureau also has under consideration other methods of transmitting radio messages in such a way that they can be received in recorded form, but will not make any change in the present communications system of teletype machines operated over land wires until all of these investigations have been completed.

Facsimile transmission, as tested by the Bureau, is based on the scanning-beam principle. In the tests conducted here messages were transmitted from the Washington, D.C., airways radio station at Silver Hill, Md., to the Department of Commerce Building in Washington, D.C.

Both the transmitting and receiving machines are compact, and can be set up for operation by plugging them in, respectively, in a transmitting set in place of the microphone and in the receiving set as a substitute for the headphones or loud speaker.

The message to be sent is typed or written on a strip of paper tape. The typewriter characters should be bold, or if handwriting is sent, a pencil with a broad lead is preferable. The tape with the message is led into the transmitting set where the scanning beam passes rapidly over the letters, and causes radio impulses to be broadcast. At the receiving end the impulses are translated into extremely narrow black lines which make up the separate letters of the words. The scanning beam passes over each letter numerous times; thus, the character appearing on the tape in the receiving machine is made up of a similar number of tiny black lines.

The system sent 78 words a minute during the tests. Its peculiar advantage over other systems of radio transmission in which written or typed messages are reproduced automatically is that the message can be sent through static or heavy background noise, and still be legible at the receiving end. Static will not produce errors,

LIEUT. THEISEN DIES IN CRASH

While enroute to his home station, Bolling Field, D.C., 1st Lieut. Carl F. Theisen, Air Corps, piloting a P-26A airplane, crashed in the vicinity of Lawrenceville, Va., at about 6:30 p.m., January 13th, and was instantly killed. At this writing the cause of the accident has not been determined, and it is not known whether the pilot attempted to use his parachute.

Lieut. Theisen was born at Meriden, Conn., on September 18, 1903. He attended grammar school for eight years; high school, four years, and the Massachusetts Institute of Technology, Cambridge, Mass., for four years, graduating as Chemical Engineer and following this profession in civil life. While attending the M.I.T., he was a member of the R.O.T.C. Unit of this institution, and upon his graduation he received a commission as 2nd Lieutenant in the Air Reserve, June 8, 1926. He was placed on active duty to undergo flying training at the Primary Flying School at Brooks Field, Texas, and he completed the eight months' course February 26, 1927, receiving the rating of Junior Airplane Pilot. He then reverted to inactive status.

In June, 1927, Lieut. Theisen took the examination for appointment in the Regular Army, and was found qualified. His application to take the full flying course at the Air Corps Training Center being approved, he began refresher flying training at Brooks Field, completed the primary course in June, 1928, and the advanced course at Kelly Field the following August, specializing in Pursuit flying. He was thereupon rated "Airplane Pilot," effective October 30, 1928, and placed on extended active duty with the First Pursuit Group at Selfridge Field, Mich.

On February 19, 1929, Lieut. Theisen was commissioned 2nd Lieutenant, Air Corps, Regular Army. He remained at Selfridge Field until September, 1931, when he was assigned as a student at the Massachusetts Institute of Technology to take advanced work in Physics, Chemistry and Metallurgy. Upon the completion of this course of study, he was assigned to duty at Bolling Field, his last station.

The untimely death of this promising young officer is keenly regretted and is a distinct loss to the Air Corps, and its heartfelt sympathy is extended to his bereaved family.

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BILLS INTRODUCED IN CONGRESS

The following Bills were recently introduced in the House of Representatives:

H.R. 2830 by Mr. John W. McCormack, of Massachusetts. "That an Air Corps bombardment group be established in the vicinity of Boston, Massachusetts: Provided, That sections 2 and 8 of the Act approved July 2, 1926 (44 Stat. 720), are hereby amended to authorize in the Air Corps one thousand seven hundred and forty-five officers in grades from colonel to second lieutenant, inclusive; sixteen thousand nine hundred and twenty enlisted men; and one thousand eight hundred and sixty-one serviceable airplanes: Provided

further, That the increases over previously authorized personnel and equipment necessitated by this Act shall be made July 1, 1935.

H.R. 3835 by Mr. Theodore A. Poyser, of New York, "That there is hereby authorized to be appropriated out of any money in the Treasury not otherwise appropriated, a sum not exceeding \$2,500,000 for the purpose of increasing the flying-field area of Governors Island, New York, by about seventy acres, more or less; and the Secretary of War is hereby authorized to expend such money, when appropriated, in such manner as may be necessary to accomplish this purpose: Provided, That no money hereby authorized to be appropriated shall be expended until and unless the State of New York shall grant to the United States the title to the land under the water proposed to be filled in and raised above the surface of the water, and shall cede to the United States concurrent criminal and civil jurisdiction over and upon such area of land."

H.R. 3457 by Mr. John J. McSwain, of South Carolina, "That there is hereby authorized to be appropriated not to exceed \$200,000, to be expended for the creation of a public airport for purposes of national defense and as a national shrine to pioneer aviators, at College Park, Maryland, now privately owned and operated and known as 'College Park Airport', College Park, Maryland, being the location of numerous and historical pioneer discoveries and developments in the art and science of aviation, for such use and purpose and for other purposes, as follows:

The sum of \$100,000 be appropriated for the creation, purchase and development of College Park Airport, College Park, Maryland.

The sum of \$50,000 be appropriated to construct an administration building for the airport, which shall contain a memorial hall having paneled upon its walls the names (with brief biographical notices) of such pioneer flyers as can be authenticated as having flown or experimented at College Park Airport.

The sum of \$50,000 be appropriated for the construction of an airplane hangar at College Park Airport suitable for the storing and servicing of airplanes, all of such appropriations, or so much thereof as shall be necessary, not to exceed \$200,000.

Sec. 2. That this airport shall be developed for amateur and sport-flying uses, for private experimental flying where reasonably possible under such rules and regulations as may be promulgated, and for military uses where military crises or emergencies call for the use of same. That this pioneer memorial airport be under the supervision of the Secretary of War, it being understood that it shall be open to visitors and reasonably permitted to users at all times when not in actual military service. The Secretary of War shall have authority to have appraised and to condemn, if necessary, the land comprising the site of the original airport, to complete full Government ownership."

V-6714, A.C.

SOME OF THE MORE INTERESTING BOOKS AND DOCUMENTS RECENTLY ADDED
TO THE AIR CORPS LIBRARY

January 15, 1935

Available for loan to Air Corps Organizations only upon request to
the Air Corps Library, Munitions Bldg., Washington, D.C.

- A 10 Ide, John Jay.
Germany Chronology of German Aircraft Control. Washington, D.C.
28 National Advisory Committee for Aeronautics, Nov. 10, 1934.
Caption title, 4f. 27cm. Gives brief history of the organization
of the German Aviation.
- C 13 U.S. Information Service.
Libraries in the United States Government, Washington, D.C.
Wash. U.S. Information Service, Dec. 1, 1934.
Caption title, 12f. 27 cm.
- C 53/157 U.S. Air Corps Tactical School, Maxwell Field, Ala.
1933-34 Staff Duties. Maxwell Field, Ala. Air Corps Tactical School, 1934.
Vol. 5 Cover title, 98p. incl. Charts. 32cm.
- 610 Livre jubilaire publie en l'honneur du Doctor Paul Derache
L76 Lieutenant General Medicin inspecteur general du Service de
Sante. Bruxelles, J. Vromans, April 1933.
148p. Front. 25½ cm.
English Title: Jubilee book in honor of Doctor Paul Derache,
Lieutenant General, Medical inspector general of the Medical
Service.
Consists of articles by different Medical officers on Military
surgical subjects.
- 623.74 Fradkin, Mrs. Elvira Thekla (Kush).
F 85 The air menace and the answer. N.Y., The Macmillan company,
1934.
XVIII, 331p. fold. map, diagr. 22½cm.
This book is not a tirade against the chemical industry or avia-
tion as being especially guilty, nor does this book aim to human-
ize war. It does aim to prove to the non-combatant his or her
immediate interest in disarmament through world organization.
- 639.133 Luftverkehr uber dem ozean... Berlin, E.S. Mittler, 1934.
L96 142p. Ills. (maps, charts) plates, diagrs. 23cm.
English title: Air Traffic over the ocean.
- 940.449 Voisin, Andre Paul.
787 La doctrine de l'aviation francaise de combat au cours de guerre
(1915-1918). Paris, Berger-Levrault, 1932.
172p. illus., plates, fold. map. 23cm.
English Title: The doctrine of French combat aviation during the
War. (1915-1918)

INSPECTION DIVISION NOTES

The Inspection Division, Office of the Chief of the Air Corps, will take advantage of the opportunity afforded by the resumption of the Air Corps News Letter by furnishing certain information which, it is believed, will be of interest to the Service, particularly to Engineering Officers and pilots.

A few words relative to the organization and officers assigned for duty in this Division are given below:

The Chief of the Inspection Division, Captain Max F. Schneider, Air Corps, functioning directly under the Chief of the Air Corps, directs the inspections and other activities. From time to time, the Chief of the Division makes extended trips for direct conferences with Commanding Officers and Engineering Officers of the various service activities for the purpose of talking over various difficulties encountered in supply and general aircraft maintenance. An effort is made to speed up necessary action to eliminate any difficulties encountered.

The direct inspection of the engineering activities at the various fields is conducted by four commissioned officers, known as Technical Supervisors, each aided by a noncommissioned officer as assistant. To facilitate such inspections, the country has been divided into four inspection areas, with one Technical Supervisor and one assistant conducting the inspections of all Air Corps and National Guard Air Units in his area.

Captain Hugh A. Bivins, with headquarters at Fairfield Air Depot, Patterson Field, Ohio, assisted by Staff Sergeant Frank D. Blair, conducts the inspections for the central area.

Captain B.J. Tocher, assisted by Staff Sergeant Oliver E. King, with headquarters at the Middletown Air Depot, Pa., inspects the stations of the eastern area.

Captain Ames S. Albro, assisted by Staff Sergeant Elliott Scott, with headquarters at the San Antonio Air Depot, inspects the stations of the southwestern area.

Captain Charles W. Sullivan, assisted by Staff Sergeant Ross P. Peck, with headquarters at the Rockwell Air Depot, Calif., inspects the stations of the western area.

Reports of all inspection trips are promptly made and forwarded in order that a close contact may be maintained between the Chief of the Air Corps and the various stations.

During the past year it has been noted that several forced landings have probably been the result of a failure in the fuel system due to the ports of the fuel cock not being in complete register. Careful investigation has shown that sometimes the play between the fuel cock control handle and the valve itself gives the appearance to the pilot that the fuel is fully turned on when, in reality, the openings may not be in full register. Although probably understood by all pilots, it is believed in order to call attention again to the fact that when ^{the} control handle, one should feel a "settling into place" and then try the handle to see that a very small amount of play is observed on either side. The following little verse may aid in remembering this important point:

An airplane looks mighty fine
When you approach it on the line,
But if gas valves were set by eye
'Twere better you don't try to fly
Until you check by feel!

Difficulties in this respect have been noted, particularly on various models of the Keystone Bomber, as due to the presence of a universal joint in

the control shaft, a greater amount of play is usually noticed. Some interesting and useful research along this line was accomplished some months ago by Captain Paul Richter, then Engineering Officer at Langley Field.

A recent Unsatisfactory Report from one of the service activities has called attention to the presence of an excessive number of blow holes in wheel castings on one of the smaller airplanes.

From one of the fields comes word that trouble has been encountered in O-38E airplanes when the excess gasoline drain becomes plugged by dirt falling from the top of the air scoop. At such times as excess gasoline fails to drain out properly, an additional fire hazard is present.

---oOo---

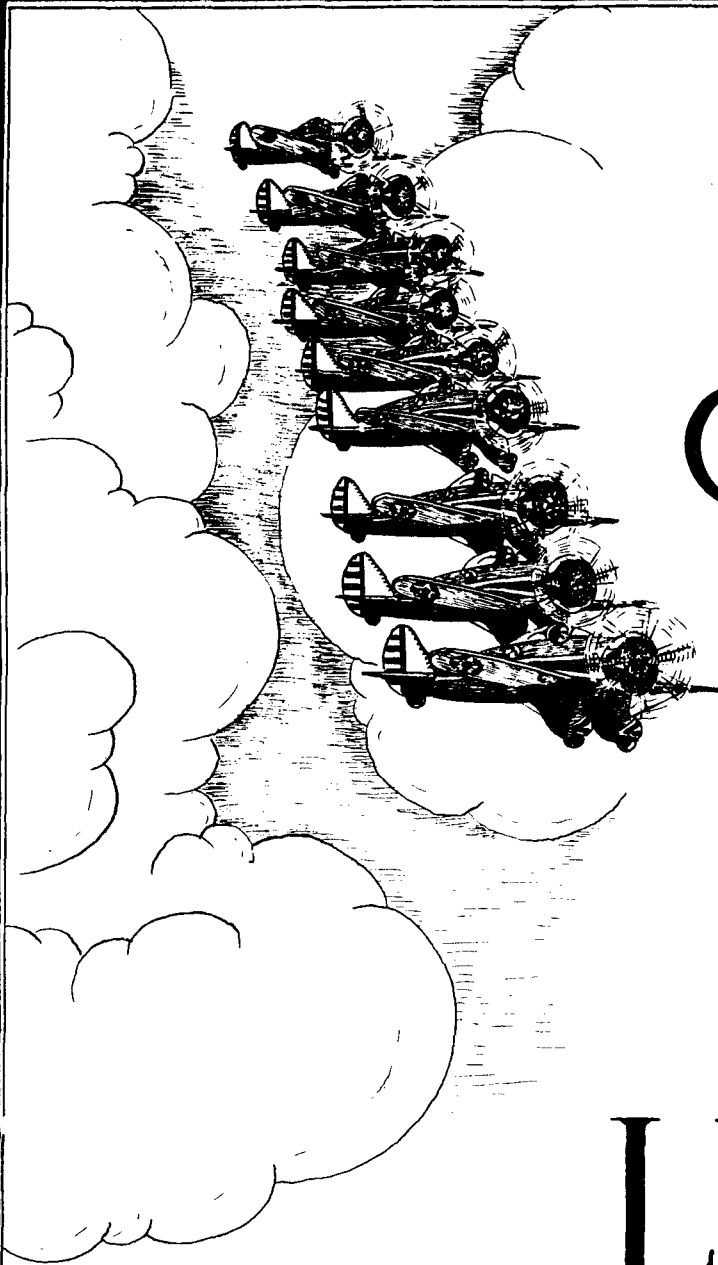
OUR NEXT ISSUE

Desirous of avoiding delay in its publication, this issue of the News Letter is, of necessity, devoid of any items covering activities at Air Corps fields and stations. It is hoped that the contribution of articles and news items from Air Corps activities will be received from now on and that the next issue of the News Letter will be fairly representative of these activities as a whole. It is also hoped to publish in the next issue developments with reference to the General Headquarters Air Force, possibly including the assignment of officers to the staff of the G.H.Q. Air Force Commander and the designation of the Wing Commanders. The items of especial interest to Air Corps officers in the report of the President's Federal Aviation Commission are expected to be available for release.



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AIR CORPS

NEWS LETTER

ISSUED BY
OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D.C.

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VOL. XVIII

FEBRUARY 1, 1935

NO. 2
Dunnington



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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MODERN PURSUIT VERSUS MODERN BOMBARDMENT

A series of tactical operations have been carried out during the past few months by the First Wing stationed at March Field, Riverside, Calif., under the direction of Lieut.-Col. E.E. Arnold, Commanding Officer, utilizing Pursuit and Bombardment tactical units equipped with the latest types of aircraft now in service. The units employed in these tests were the 3th, 73rd and 9th Pursuit Squadrons of the 17th Group, with Boeing P-26A airplanes, and the 9th, 11th and 31st Bombardment Squadrons of the 7th Group with B-12 Martin Bombers.

In general, the operations were conducted with the planes either carrying actual standard armament loads or equivalent. In all problems it was either assumed that there was a well trained ground observation unit which would report the approach of "hostile" aircraft or scouting planes were actually employed for this purpose. Observation points on the ground were selected to conform as nearly as possible to those that would be selected under actual war conditions and "hostile" airplanes were required to radio their positions when passing over these points in certain types of interception problems; several minutes were permitted to elapse before the messages were delivered to the intercepting units, as there would necessarily be a small delay in war time due to the operation of the network and the time necessary for the issuance of field orders, although all units are "on the alert". Once in the air, however, all position reports were given direct by radio to the unit commanders and, likewise, succeeding orders were given direct to the pilots by radio by the various unit commanders.

The following phases of serial operations were covered:

a. Interception of Bombardment by Pursuit, when Pursuit is located at or in the immediate vicinity of the objective:

- (1) When Bombardment approaches in a direct line at an altitude of 18,000 feet.
- (2) When Bombardment approaches in a direct line at an unknown altitude (high, intermediate and low).
- (3) When Bombardment approaches on an unknown course at an unknown altitude.

b. Interception of Bombardment by Pursuit, when Pursuit is located to one flank of the objective and of the attacking Bombardment.

- (1) When Bombardment approaches in a direct line at a known altitude.
- (2) When Bombardment approaches on an unknown course and unknown altitude.

A total of 26 interception problems were

carried out. Tactics and types of formations used were those best suited for Pursuit in the attack of Bombardment, and the planes used the following types of armament:

- (1) Single-seater Pursuit, armed with synchronized .30 caliber machine guns.
- (2) Single-seater Pursuit, armed with fixed synchronized .50 caliber machine guns or small cannon.
- (3) Pursuit armed with bomb-dropping gear with a capacity of from 15 to 40 bombs of from 5 to 10 lbs. weight.

In preparing the interception problems, an attempt was made to secure operations over all kinds of terrain. Thus, in some of the problems, the Bombardment started their mission over the ocean, in others, far out over the desert, and still others over the mountains. Accordingly, the Pursuit was given an opportunity to work over very varied terrain at varied altitudes. In as many problems as possible, the Bombardment started from dispersed areas and assembled over a known point before continuing to their objective. In all cases, the Pursuit was given such information as they would normally receive from ground look-out stations and the position of these observation stations was varied to assure front lines at varying distances from the objective of the bombardment attack.

The time required to issue orders and clear the airdrome, the time to reach various altitudes, the many echelonments and altitudes used for attacking elements, their relative positions with respect to the bombardment, and the order of attack by the elements forms an extremely interesting and instructive study. All this data will be compiled by the Information Division, Office of the Chief of the Air Corps, and sent to the Air Corps Tactical School, the overseas departments and, at the request of the Commanding Officer of the General Headquarters Air Force, to Wing and separate Group Commanders of the Air Force. This information will be for official use only. Still further data relating to armament, equipment and technical functioning, will be furnished to the Chief of the Materiel Division.

These upper air laboratory tests are to be continued at March Field, it is understood. Undoubtedly, as the later types of airplanes are furnished to other Pursuit and Bombardment units, they will desire to carry out similar tests. It is to be hoped there can be made available complete equipment of camera guns for both Pursuit and Bombardment, so that still more realistic data may be secured.

THE NEXT STUDENT CLASS AT FORT LEAVENWORTH

In an announcement recently issued by the War Department regarding the composition of the next class of student officers to pursue the course at the Command and General Staff School at Fort Leavenworth, Kansas, the names of 17 Air Corps officers are noted, as follows:

Major Carl Spatz	Washington, D.C.
Major Gerald E. Brower	Manila, P.I.
Capt. Chas. C. Chauncey	Ft. Crockett, Texas
Capt. John D. Corkille	Ft. Crockett, Texas
Capt. Wm. S. Gravely	San Antonio, Texas
Capt. Fred'k Von R. Kimble	Maxwell Field, Ala.
Capt. Caleb V. Haynes	Langley Field, Va.
Capt. Chas. M. Cummings	Washington, D.C.
Capt. Warren R. Carter	Maxwell Field, Ala.
Capt. Victor H. Strahm	Wright Field, Ohio.
Capt. Leland R. Hewitt	Maxwell Field, Ala.
Capt. Clarence P. Talbot	Maxwell Field, Ala.
Capt. Edgar E. Glenn	Maxwell Field, Ala.
Capt. Morton H. McKimmon	Rockwell Field, Cal.
1st Lt. Hoyt S. Vandenberg	Maxwell Field, Ala.
1st Lt. Ralph F. Stearley	Maxwell Field, Ala.
1st Lt. Walter L. Wheeler	Maxwell Field, Ala.

The School starts the first week in September and extends for a period of ten months.

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APPOINTMENT OF NEW OFFICERS FOR THE AIR CORPS

A preliminary examination will be held on February 2nd, and a final examination on April 2, 1935, of applicants for appointment as second lieutenants in the Air Corps, Regular Army, in accordance with the provisions of AR 605-5 and special conditions as set forth in Circular No. 2, War Department, January 16, 1935, viz:

1. Applications from eligibles desiring to compete in the announced examinations should be submitted to the corps area and department commanders in accordance with Section III, AR 605-5.

2. Eligibility to compete in the examination will be confined to candidates, who are qualified flyers, falling within the scope of the following classifications:

a. Who fulfill the necessary mental, moral, and physical qualifications for appointment as second lieutenant in the Regular Army.

b. Who have served a minimum of twelve months on active or extended active duty as pilots with a tactical unit of the Air Corps.

c. Who have efficiency ratings of satisfactory or above for every period of active duty, or extended active duty.

d. Who are physically qualified for flying.

e. Who have not yet reached 29 years and 9 months at the time of final examination.

All applicants who have not served as pilots on active or extended active duty within two years from date of making application for examination will be required to demonstrate their proficiency as pilots before the board conducting their examination.

3. Each application should be accompanied by the necessary documentary evidence substantiating the candidate's claims for exemption in educational examination, as well as creden-

tials establishing his practical flying qualifications. Upon receipt and consideration of such documents, accepted candidates will be authorized by the corps area authorities to appear before specified boards and will be granted such exemptions in the mental examination as circumstances warrant. Candidates whose applications may not be approved will be so informed.

4. Graduates of the Air Corps Primary and Advanced Flying Schools who are also graduates of recognized colleges and universities will be exempted from the entire mental examination prescribed by AR 605-5.

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POST FIELD CONSIDERABLY IMPROVED

Post Field, Fort Sill, Okla., the home of Flight 'E,' 16th Observation Squadron and the 1st Balloon Squadron, Air Corps, boasts of several new and modern building projects completed during the past year.

A new Squadron Barracks, Fire Station, Infirmary, nine commissioned officers' quarters and twelve noncommissioned officers' quarters were completed and are now occupied.

Last year the old balloon hangar at Ross Field, Calif., was dismantled and moved to Post Field, and the renovating and reconstruction was completed in December. The aluminum pointed surface of this building reflects the light to such an extent that it makes a landmark visible from a distance of fifty miles on an average day.

Air Corps commissioned personnel stationed at Post Field are as follows:

Lieut.-Colonel J.N. Reynolds, Air Corps Instructor at Field Artillery School.

Captain Ira R. Koenig, Commanding Officer, Air Corps Troops and 1st Balloon Squadron.

Captain W.C. Farnum and 1st Lieut. H. McCormick, 1st Balloon Squadron.

Captain D.G. Stitt, Commanding Officer; Captain F.C. Wilkins; 1st Lieut. W.E. Karnes, and 2nd Lieut. H.F. Gregory, Flight E, 16th Observation Squadron.

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LARGE CLASS AT THE TACTICAL SCHOOL

The Present class at the Air Corps Tactical School, Maxwell Field, Montgomery, Alabama, is one of the largest in its history, comprising 50 Air Corps officers, 5 officers from other branches of the Army, 3 Marine Corps officers, one officer from the Mexican Air Force and two officers from the Turkish Army.

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HEAVY AIR TRAFFIC AT MAXWELL FIELD

The Operations Dispatcher at Maxwell Field, Montgomery, Ala., reports that a total of 119 airplanes arrived at and departed from that station from other Air Corps posts between January 1st and 15th. This heavy air traffic was due to the Air Races at Miami, Fla. The visitors were gladly welcomed and many friendships begun years ago at other stations were renewed.

TEMPORARY PROMOTION AND STANDARDS OF FLYING PROFICIENCY FOR AIR CORPS OFFICERS.

A statement recently issued by the War Department announces that the Hon. George H. Dern, Secretary of War, has now approved a plan submitted by General Douglas MacArthur, Chief of Staff, in accordance with the report of the Special War Department Committee, headed by the Hon. Newton D. Baker, which will inaugurate a system of temporary promotion in the Air Corps based on non-availability of officers of suitable permanent rank, and provide just reward and compensation for those performing duties and bearing responsibilities of higher rank.

Enumerated among the more important positions included in this policy is the Commander of the G.H.Q. Air Force, whose rank will be either that of Brigadier-General or Major-General. His Chief of Staff will have the rank of Colonel, and four General Staff officers the rank of Lieut.-Colonel.

The rank of Brigadier-General will go to the commanders of the 1st and 2nd Wings, and that of Colonel to the commander of the 3rd Wing, and the commanders of the Composite Wings in Hawaii and the Panama Canal Zone. The Chief of the Materiel Division and the Director of the Air Corps Training Center will have the rank of Brigadier-General, as now permanently provided by law. The rank of Colonel or Lieut. Colonel will go to the Directors of Engineering, Procurement, Supply, etc.; Depot Commanders; heads of various schools; senior staff officers on the staff of Department and Corps Area Commanders. Station complement commanders will be Colonels, Lieut.-Colonels or Majors; Group Commanders will be Lieut.-Colonels; Squadron Commanders, Majors, and Flight Commanders, Captains. The policy also includes increased rank for many minor positions.

The War Department statement goes on to say that the reorganization of the Army Air Corps in 1926 and that now under way pursuant to the recommendations of the Special War Department Committee create many occasions where junior Air Corps officers are called upon to perform duties and bear responsibilities of positions normally involving higher rank and compensation. This situation was recognized by the Congress in 1926, when it passed the Air Corps Act, but its provisions with respect to temporary increased rank have heretofore been held in abeyance.

STANDARDS OF FLYING PROFICIENCY

The War Department Committee for the Army Air Corps made the following special recommendations relative to the flying proficiency of the individuals of the Army Air Corps:

"All Air Corps officers of 15 or less years' service should be qualified pilots. A standard qualification should be established administratively for all Air Corps officers of 15 or less years' service in the Air Corps who are placed on flying duty. This standard qualification should include annual flying as pilots of not less than 100 hours, including a reasonable percentage of cross-country, instrument, night and formation flying. Excep-

tions to these requirements should be made only by the approval of the Secretary of War in each specific case. Those not qualified to meet the standard qualifications should be utilized or disposed of in accordance with the following paragraph:

"After 15 years of service, all Air Corps officers should be tested periodically by a qualified board, to determine their qualifications as flying officers. Those capable of meeting the conditions given in (8) above, and others as deemed desirable, should be declared eligible as pilots for flying command duty, that is, to command combat squadrons and groups.

"Those found disqualified as pilots for flying command duty, unless coming within the provisions of existing retirement and Class B laws, should be divided into two groups - (a) those capable and qualified for non-flying duty in the Air Corps; (b) those not capable or qualified for piloting or non-piloting duty with the Air Corps.

"The non-piloting group referred to above should include those deemed qualified for such duties as high command and staffs in the Air Corps, senior officers of the engineer group and procurement-supply group of the Air Corps. They should be required to continue aerial experience and fulfill the legal requirements to draw flying pay.

"Those disqualified for Air Corps duty as per (b) above should be given the option of transferring, if qualified, to a ground branch of the Army, or retiring with $2\frac{1}{2}\%$ of their base pay per year of commissioned service up to 75 percent."

Secretary of War George H. Dern has approved a policy submitted by General MacArthur to carry these recommendations into effect. This policy has been concurred in by General Foulis, Chief of the Air Corps, and Lieut.-Colonel Andrews, designated as Commander, G.H.Q. Air Force.

The plan prescribes a standard of flying proficiency which requires all rated airplane pilots of the Army Air Corps on a flying status to fly --

A minimum of 100 hours per year in compliance with the provisions of the current annual training directive, including a minimum of

(1) 35 hours' aviation, including one flight of at least 500 miles with a minimum of two intermediate landings. Personnel stationed within the continental limits of the United States will make not less than two flights of at least 200 miles each over the Department of Commerce Airways, using the radio avigational aids and communication facilities thereof. Where practicable, flights over the Department of Commerce Airways may be combined with the required flight of 500 miles.

(2) 10 hours' instrument flying, including a minimum of 5 hours under the hood.

(3) 10 hours' night flying, including a night avigation flight of 2 hours' duration.

(4) 5 hours' formation flying.

Commanding Generals of Overseas Departments are authorized to eliminate the 500-mile avigation flights, if the physical and geogra-

phical limitations of their departments are such as to make this requirement unduly hazardous. Any other reasonable aviation requirement deemed desirable by a Department Commander may be substituted therefor. Where such substitution is made, the War Department will be informed of its nature.

The flying indicated in each category above will be in accordance with Technical Regulations prescribed by the Chief of the Air Corps.

In addition to those rated airplane pilots, the following classes of Air Corps personnel will be required to fulfill the requirements of this paragraph in accordance with their flying ratings as to hours and types of missions with the exception of instrument flying under the hood:

(1) Those holding both pilot and observer ratings but flying on observer status.

(2) Airplane observers.

(3) Balloon observers (not on duty with a balloon squadron).

(4) All other personnel on flying status except student personnel at the Air Corps Training Center.

In order to check the degree of compliance with the prescribed standards, the Secretary of War will appoint not later than June 30th annually two boards of three field Air Corps officers each for the administrative examination of Air Corps officers as indicated below. One board will function for all personnel assigned to the G.H.Q. Air Force and the other for all personnel not so assigned these boards to be known as --

Flying Proficiency Board, Office, Chief of Air Corps.

Flying Proficiency Board, G.H.Q. Air Force.

These boards will classify personnel as follows:

Those who have complied with the standard of flying proficiency and are qualified for piloting and flying command duty.

All others grouped into classes as indicated below:

Those eligible for piloting and/or flying command duty, that is, to command squadrons and groups.

Those capable and qualified for non-piloting duty in the Air Corps. This non-piloting group will include those deemed qualified for such duties as high command and staffs in the Air Corps, combat duties other than piloting, and senior officers of the engineer group and procurement-supply group of the Air Corps.

Those not capable or qualified for piloting or non-piloting duty with the Air Corps.

The Boards will also classify the following into the groups indicated above:

Airship and balloon pilots. The standard of flying proficiency for this group will be prescribed by the Chief of the Air Corps.

All officers who on June 30, 1935, have been suspended or removed from flying status for physical or other reasons.

Non-rated officers of the Air Corps not on flying status.

The Boards will make a detailed examination of flight records of Air Corps personnel on flying status and of such other evidence bearing on the individual's flying proficiency as

may be obtainable. The Board will give careful consideration to the availability of flying equipment and other local conditions.

The proceedings will be submitted to the War Department for final action through the Chief of Air Corps and the Commanding General, G.H.Q. Air Force, respectively.

After action by the War Department on the reports of the boards, each individual found to be not capable or qualified for piloting or non-piloting duty with the Air Corps will be so notified.

Where the individual objects to this classification, he will so notify the War Department, when the necessary instructions for a flight test will be issued.

Results of flight tests will be forwarded to the board which recommended the classification of the individual. The board will then, after a complete review of the flight test report, make specific recommendation as to the classification in which the individual should be placed as a result of the flight test. The proceedings will then be forwarded through channels to the War Department for action by the Secretary of War, which action will be final.

No officer will be removed from flying status as a result of the process described above until his case has been acted upon by the War Department. Those officers found finally not capable or qualified for piloting or non-piloting duty with the Army Air Corps will be utilized for ground duty in the Air Corps, or on other duty unless physically or otherwise disqualified.

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AERIAL REVIEW FOR MAJOR GENERAL MALIN CRAIG

On the same day that Amelia Earhart landed at Oakland in her trans-Pacific flight from Honolulu, the entire 17th Pursuit Group of March Field swooped down upon Hamilton Field at 10:40 a.m., for refueling. The absence of the fast Martin Bomber among the 39 Pursuit planes, which is the plane of the First Pursuit Wing Commander, Lieut.-Colonel Henry H. Arnold, was noticeable. The Wing Commander had flown to Crissy Field, where he picked up the Corps Area Commander, Major-General Malin Craig, well known to soldiers of the World War as the Chief of Staff of the Third Army. In less than half an hour, the 39 planes had been serviced at Hamilton Field, and they joined the Wing Commander in a simulated attack on San Francisco, which was really an air review in honor of the the 9th Corps Area Commander, General Craig, who will leave soon on a General Staff assignment in Washington.

As an aftermath of the review came the return of the 17th Pursuit Group to Hamilton Field at 1:15 p.m. The visiting pilots were the guests of honor at a celebration during which the new Officers' Club at Hamilton Field was dedicated. On the following afternoon, at 1:00 o'clock, the entire Group flew back to March Field to be ready for the duties of the coming week.

V-6718, A.C.

ICING OF AIRCRAFT

There is reprinted here excerpts from an interesting article on the above subject, written by Mr. Edward J. Minser, Chief Meteorologist, T.W.A., Inc., and published in the Air Commerce Bulletin of December 15, 1934. Mr. Minser states that two primary conditions must exist in the free air before ice will form on aircraft, namely, that moisture must be present in visible form, and the air temperature must be 34° F. or less. While ice has formed at higher temperatures, instrumental error, or lag in the thermometer is undoubtedly a contributory factor. Where frost has formed in clear air it is due to a cold aircraft entering a warmer air mass of high humidity. In either of these two conditions, ice formation is generally light and of slight hazard.

Ice is classified in three types - clear or glaze, rime and frost. Clear ice, smooth and glassy in appearance, may be rough if formed in the presence of sleet or snow. Very tenacious and difficult to break loose, it has been known to form at the rate of one inch per minute in the presence of snow. Freezing rain always forms as clear ice.

Rime, a white opaque ice forming along entering edges and building out in an irregular sharp-nosed mass, is ordinarily easily removed by vibration and shock, but at very low temperatures its tenacity increases and the formation if prolonged reaches dangerous proportions.

Frost, a light crystalline formation, never assumes any degree of magnitude and generally disappears as soon as the aircraft reaches the same temperature as the air through which it is flying.

From reports on numerous icing conditions, it was noted that clear ice formed in clouds of warm air mass origin while rime generally occurred in cold weather mass clouds. In clouds forming in air with the temperature below freezing, the water vapor available never exceeds 5 grams per cubic meter, this amount decreasing rapidly with decrease in temperature. A cloud forming from warm moist air will be composed of large droplets, densely distributed throughout the cloud, while cold moist air will result in a cloud of small droplets widely dispersed. Therefore, in flying through a warm air mass cloud, considerably more water will be encountered per unit area.

Since ice does not form above a temperature of 34°, the freezing of condensed water presents the most interesting and also puzzling process of ice formation. The change of the water droplet to ice on collision with an airplane appears to depend largely upon the evaporation process of lowering the temperature. It is known that water can be cooled far below the freezing point and still retain its liquid form, but a slight disturbance will immediately change it to ice. The presence of saline substances in free air droplets tends to lower the freezing point, so apparently the state of such a liquid is simply one of reduced freezing point.

When a droplet, which has been super-cooled,

strikes an airplane, a portion thereof immediately changes to ice, and the temperature of the slush mixture tends to rise to the freezing point, since any mixture of ice and water assumes that temperature. To freeze the remaining water, the heat of fusion is absorbed by means of evaporation and/or absorption by the structure of the airplane and/or cooling by the passing air stream.

Since in areas of strong convection, we can expect to find the largest cloud droplets and greatest amounts of liquid water, clear ice will occur if the temperature is below 34°F. To avoid dangerous icing it will only be necessary to avoid such areas. Generally, in winter over level country, except in thunderstorms of marked intensity, vertical convection diminishes rapidly at levels above 10,000 feet, and therefore the size of supported droplets and the cloud density will also diminish rapidly. At these levels also, the temperature is far below freezing and rime ice will be the general form. Certainly this becomes a far safer flight path than at lower levels.

Since a cold aircraft will accelerate ice formation, a climb from a cold air strata through a warmer dense cloud demands caution. On entering such a cloud, every droplet encountered will freeze almost instantly and only several minutes will be necessary to load a plane with ice. If climb is maintained at the maximum rate permissible, the inversion above the cloud may be reached before ice has formed to a dangerous degree.

The fact that ice will accrete in clear air at subfreezing temperatures should always be borne in mind. When ice has formed it can usually be removed by evaporation in the clear air above or below a cloud strata. However, if precipitation in the form of rain occurs, increased ice will result, and this danger should not be lost sight of, as the formation will be rapid. Snow in clear air does not form ice at sub-freezing temperatures.

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ROCKWELL FIELD A BUSY PLACE

The Rockwell Air Depot is now busily engaged in making the necessary changes in the Martin Bombers. Aileron balance weights, controllable pitch propellers, and oxygen equipment are being installed. Two B-12's are being equipped with de-icers equipment for a cold weather test in the north this winter. The work is progressing rapidly, although "unusual" weather conditions have been quite a handicap since the lack of hangar space at Rockwell necessitates most of this work being done out of doors.

Captain S.J. Idzorek arrived at Rockwell Field from Panama and has taken over the command of the field. He found many old friends who have been eagerly awaiting his arrival from the time his orders were published.

Mr. Harold Gatty, until recently on duty in the Office of the Chief of the Air Corps in Washington, reported for permanent duty with the Advanced Aviation Training Unit. The officers of that unit will welcome his help in their pioneer work re. sun curves, stars, etc.

PROMOTION OF NONCOMMISSIONED OFFICERS

A list is given below of noncommissioned officers placed on the respective eligible lists for promotion to Master Sergeant and Technical Sergeant, Air Corps, January 1, 1935.

ELIGIBLE LIST

For Master Sergeant, Air Corps
Effective January 1, 1935

Technical Sergeants

No.		
1	Gail, Charles	73. Jackson, Paul B.
2	Bollinger, John	74. Roberts, Carl C.
5	Nikulaine, Ananias	75. Loijer, Richard E.
6	Cox, Fletcher H.	76. Filkins, Joseph A.
8	King, Benjamin J.	77. Schaeffer, Chris J.H.
9	Whiteside, Don W.	78. Feckham, Russell C.
10	Taylor, Gust A.	79. Valtierra, Leobardo
12	Albee, Lidas H.	80. Gibbins, Stanley K.
15	Rogers, Richard	81. Glasscock, Harry
16	Napier, Wythe J.	82. Fisher, George H.
17	Tingle, Dan W.	83. Howard, Richard C.
18	Bothne, James N.T.	84. Jewell, Arvin B.
19	Adams, Arthur H.	85. Kozibski, Edward A.
20	Riley, William J.	87. Mueller, Charles
21	Arnold, George	88. Merian, August A.
22	Mooney, Harry	89. Fusz, Charles F.
23	Small, Ballard B.	90. Mathews, Daniel A.
24	St. John, Ruben	91. Fimes, Olin C.
26	Maxwell, Edcil C.	92. Dreier, Elmer L.
27	Miller, Edward	93. Maroul, John J.
28	Webster, Edward W.	94. Von Euv, John B.
30	McKnight, Charles H.	95. Fitzgerald, John E.
31	Locher, Joseph H.	96. Moorhead, Wm. B.
33	Howe, Sidney C.	97. Cattarius, Adolph
34	McAndrews, John	98. Thomas, Robert H.
35	Malloy, Stephen A.	99. Tupper, Hobson
36	Hobson, Earl	101. Stolte, Arthur
37	Ceccato, Peter	102. Moore, Virgil
38	Walters, Clyde L.	104. Forrest, James A.
39	McNeely, Ralph	105. Hartley, Ernest N.
40	Wheeler, Adam L.	106. Bandles, Arthur
41	Suggs, John M.	107. Scott, Elliott
42	Leffler, Charles H.	109. Akers, Thornton
43	Kendrick, Bryan J.	110. Hamilton, Robert E.
44	Carpenter, Ross	111. Gray, Henry H.
46	Kohn, Louis	113. Brees, William M.
47	Witsch, Henry A.	114. Dryer, Howard H.
48	Maloney, Philip E.	
49	Gordon, Frederick J.	<u>First Sergeants</u>
51	Moslender, Charles E.	3. Sproesser, George
52	Swanson, Nels E.	4. Hayes, Patrick J.
53	Wing, Richard E.	7. Van Houton, David H.
54	Loyell, Clyde W.	11. Weber, Lee R.
55	McGhee, Loyd H.	13. Dunlap, Roy C.
56	Shepherd, Delana	14. Danie, Thomas
57	Tomberlin, George D.	25. White, Benjamin L.
58	Ritenour, Ervin W.	29. Grimme, John F.
59	Schmidt, George E.	32. Gratsky, Walter
60	Stein, Joseph J.	45. Harrison, George E.
61	Williams, Wallace H.	50. Davids, Ewald
62	Brown, Lee E.	66. Hill, James W.
63	McCartney, George D.	86. Starowich, Steve
64	Herb, Donald F.	100. Jones, William L.
65	Blais, James G.	103. Casey, Patrick T.
67	Cheska, Benjamin A.	108. Miller, Joseph J.
68	Turner, William	112. Hammon, William T.
69	Hepper, Walter S.	
70	Leary, Vernon G.	
71	Williford, Leon O.	
72	Apple, William V.	

ELIGIBLE LIST

For Technical Sergeant, Air Corps
Effective January 1, 1935

Staff Sergeants

No.	
1	Miller, Sidney
2	Moretti, Marcus F.
3	Coultourn, James L.
4	Riffil, George W.
5	Urweider, Edward J.
6	Keogh, John
7	Buryen, Benjamin F.
8	McIntire, Edward J.
9	Burton, George
10	Johnson, Carl L.
11	Teverbaugh, Lafe
12	Fogleman, Harley J.
13	Michler, Herbert
14	Lukowski, John
15	Farrar, Almon S.
16	Reynolds, Mark
17	Connolly, Michael E.
18	Vicsik, Victor
19	Zephiro, Basil
20	Post, Leland
21	Miramontes, Leonard
22	Fitzpatrick, William
23	Morris, James
24	Dennington, Richard
25	Kirby, Henry
26	Srcte, Harvill B.
27	Jusko, Edward A.
28	Newman, Willie E.
29	Bikle, Charles R.
30	Smith, Forest
31	Ankerly, Horace R.
32	Roberts, Fred A.
33	Tockey, Thomas F.
34	McFadden, Arvel
35	Davis, John L.
36	Frotivnak, Michael
37	Cobb, Besola
38	Mauro, John A.
39	Paswaters, Francis M.
40	Jones, George S.
41	Balacke, Harry
42	Capps, Dwight M.
43	Hica, Robert E.
44	McGraw, Mathew A.
45	Zerr, Raymond
46	Hooper, Asa C.
47	Snaw, Carrel L.
48	Richard, George M.
49	Joyner, Charles
50	Renas, Walter E.
51	Roziburski, Michael M.
52	Cheatham, Roy D.
53	Lonroy, Philip P.
54	Cross, Charles M.
55	Shoffield, William K.
56	Gilbert, Claude M.
57	Franklin, Henry L.
58	Vielock, Adam J.
59	Oram, George H.
60	Roeske, Myron

Staff Sergeants (Continued)

61 Falls, Clyde L.	91 James E. Dearborn	121 Kunsch, Perry W.
62 Gardner, Edgar W.	92 Edwin J. McClellan	122 Hansen, Henry P.
63 Moss, Grover C.	93 John A. Marshall	123 Hamzack, Robert W.
64 Barlow, Robert L.	94 Chauncey L. Anderson	124 Chaudron, Norvelle
65 Kirby, Louis A.	95 Harold B. Mannolt	125 Flower, Abraham
66 Langston, Wilbur E.	96 Paul D. Bennett	126 Bathey, George R.
67 Walton, Joseph L.	97 Fredericks, Joseph M.	127 Martini, Henry
68 Peacock, Floyd H.	98 Silva, Manuel	128 Yeager, Adolph C.
69 Morris, Reuben	99 Blunden, Golan R.	129 Carr, George W.
70 Hoffman, Leonard L.	100 Hymes, Sennel	130 Mickey, Everett
71 Malkemus, George D.	101 Brown, Walter D.	131 Criss, Karl W.
72 Yucius, Tony	102 Carlow, Harold F.	132 Huffman, Ernest J.
73 Fagan, Luther W.	103 Platt, Graham	133 Halterman, George W.
74 Greene, Robert E.	104 Lacatira, Leo	134 Purkins, Gerald M.
75 Williams, Leonard	105 Fall, John A.	135 Torney, Thomas P.
76 Harris, James S.	106 West, Henry L.	136 Schuette, Alfred E.
77 Hurst, Frank	107 Richardson, Homer L.	137 MacDermott, William K.
78 Paseman, Edwin	108 Hoppe, Helmar B.	138 Riviere, Jean E.
79 Wolfe, Jack	109 Deming, John B.	139 Witwicki, Kazimir M.A.
80 Barker, Arthur C.	110 Tuffly, Edward W.	140 Chinigo, Joseph
81 Kramberg, Joseph	111 Worthen, Ray E.	141 Peterson, Cayus P.
83 Mehnert, William	112 Boyles, James H.	142 Weeks, Alvin C.
83 Senter, Herman F.	113 Dossett, Elbert	143 Jolly, Arthur
84 Sloan, Miles B.	114 Chatham, Charles W.	144 McKown, Floyd H.
85 Blesh, Earl S.	115 Hampton, Jack	145 McGhee, Lester L.
86 Fisher, Elmer H.	116 Morris, William C.	146 Norris, Walker W.
87 Bright, Clarence	117 Gorman, Andrew J.	147 Hagan, George M.
88 Skelton, Edward F.	118 Mondt, Howard	148 Newland, Gus V.
89 Masterson, John A.	119 Jensen, Oluf T.	149 Shoellhorn, Erhard
90 Benson, Harold P.	120 Leonard, Dale F.	150 Ray, Floyd F.

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FRONTIER DEFENSE BASES FOR THE ARMY AIR CORPS

Under a Bill, H.R. 4130, introduced in the House of Representatives January 17, 1935, by the Hon. J. Mark Wilcox, of Florida, and which was referred to the Military Affairs Committee, the Secretary of War is authorized to locate and establish for the use and occupancy of the Army Air Corps on sites to be selected by him on land now owned by the United States or hereafter, under the authority of this act, to be donated to the United States, ten military posts to be known as "Frontier Defense bases," one such post in each of the following areas as indicated below:

- (a) New England area, in Maine, New Hampshire, Massachusetts, Rhode Island, or Connecticut.
- (b) Southeastern Atlantic area, on the South Atlantic coast in the State of Florida.
- (c) Gulf of Mexico area, in Louisiana or Texas.
- (d) Southwestern Pacific Area, in the southern part of California.
- (e) Central Pacific area, in the State of California, north of San Jose.
- (f) Northwestern Pacific area, in Oregon, Washington, or Idaho.
- (g) Great Lakes area, in New York, Ohio, Michigan, Illinois or Wisconsin.
- (h) Alaskan area, in the Territory of Alaska.
- (i) Panama Canal area, in the Panama Canal Zone.
- (j) Rocky Mountain area, in Utah, Colorado, or Wyoming.

Under this Act the Secretary of War is further authorized and directed to construct, in-

stall, and equip, or complete the construction, installation, and equipment, at each of said posts such buildings and utilities, technical buildings and utilities, landing fields and mats, and all utilities and appurtenances thereto, including removal of existing quarters, grading, drainage, roads, walks, aprons, docks, runways, ammunition storage, sewer, water, power, station and airplane lighting, telephone and signal, fuel storage, and fuel distribution systems, transportation of personnel, and purchase, renovation, and transportation of materials, as in his judgment may be necessary to provide an air base for one wing consisting of one bombardment group and one coast defense group, or the equivalent thereof. The landing fields of each such base shall be constructed so as to be able to accommodate in an emergency at least 1,000 airplanes. The cost of each such base shall not exceed \$19,000,000.

To accomplish this project, a sum not to exceed \$190,000,000 is authorized to be appropriated, and the Secretary of War is authorized to accept on behalf of the United States, free of encumbrances and without cost to the United States, the title in fee simple to such lands as he may deem necessary or desirable at each of said sites to accomplish the purposes of this Act.

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Approximately 1123 Army airplanes were flown on December 17th last to celebrate National Aviation Day.

Although recognizing the worth of several instances of heroic conduct on the part of Air Corps flyers during the past year, the Board of Officers which considers recommendations for awards and trophies in the Air Corps, recommended that the Cheney Award for 1934 should not be made, but that the award fund be permitted to accumulate in the custody of the trustee.

This Award, which is given each year for the outstanding act of valor, extreme fortitude or self-sacrifice in a humanitarian interest in connection with the operation of aircraft, and which carries with it an emolument of \$500, is most highly prized by officers of the Air Corps, Regular Army, Air Reserve officers, and enlisted men eligible to receive it.

"So high a standard of heroic self-sacrifice has been set by the previous winners of the Award, that the Board of Awards 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," stated Major-General B. D. Foulcis, Chief of the Air Corps, who approved the recommendations of the Board. "Heroic acts were performed last year by members of the Air Corps which have been suitably recognized by other awards or citations, but just because the Cheney Award was available for donation was no cause for presenting it without considering the high purpose for which it was established."

The Cheney Award was established in memory of First Lieutenant William H. Cheney, Air Corps, who was killed in an air collision at Foggia, Italy, on January 20, 1918. The donors are Mrs. Mary L. Schofield, of Peterboro, New Hampshire, and Mrs. Ruth Cheney Streeter, of Morristown, N.J., mother and sister, respectively, of the deceased officer.

Thus far, three Air Corps officers, one Air Reserve officer and five Air Corps enlisted men have been recipients of the Cheney Award. The first award was made in 1927 to Master Sergeant Harry Chapman for conspicuous bravery in the airship ROMA disaster which occurred in February, 1922. Lieut. Uzal G. Ent, Air Corps, received the award for 1928 for his heroism during the National Elimination Balloon Race in that year. When the balloon was struck by lightning, Lieut. Evert, the pilot, was instantly killed, and the balloon caught fire. Instead of jumping with his parachute, Lieut. Ent, mindful of the danger of the balloon exploding any minute and unaware of the fact that Lieut. Evert was beyond all help, remained in the basket and endeavored to revive him.

Lieut. William A. Matheny received the Cheney Award for 1929, Private John B. Smith for 1931, Private Arden M. Farley for 1932, and 2nd Lt. William L. Bogen, Air Reserve; Staff Sergeant Toy D. Dodd and Sergeant Thomas J. Rogers for 1933. The circumstances connected with the award for these years were those involving heroism in rescuing imperiled airmen from the wreckage of burning airplanes. The award for 1931 was also presented to the late 1st Lt. Robert D. Moer, Air Corps (posthumously) who, on August 23, 1931, gallantly sacrificed his

life while pilot of an airplane forced down out of control. He gave up his own opportunity to escape by urging and succeeding in getting his passenger to jump with his parachute to safety. That accomplished, it was too late for him to jump. No award was made for the year 1930.

Although the income from the trust fund exceeds \$500 per year, which is the amount of the cash donation, the remainder, including the unawarded sum for 1934, is placed in a sinking fund for possible use in case more than a single individual is recommended for the award, as was the case for the years 1931 and 1933. In addition to the cash consideration, each recipient of the Cheney Award is presented with a bronze plaque with his name engraved thereon, also an engraved Certificate of Award describing the heroic deed performed.

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ENLARGEMENT OF SCHOEN FIELD

The Regular Army field at Fort Benjamin Harrison, Indiana, has been enlarged from 95 to 210 acres, according to an article submitted by Captain Stanton T. Smith, Air Corps, Commanding Officer of that field.

From a rough, rolling, muddy field, of about 95 useful acres, Schoen Field, 10 miles northeast of Indianapolis, Indiana, has been increased to 210 acres, half of which has been graded and tile drained. Though it is still rolling, it is smooth surfaced, and all approaches have been made much safer through tree removals around the edges.

Schoen Field has been made a rectangular field, 3/4 of a mile long and 1/2 mile wide, with no obstacles on the west end, and the nearest obstacle 125 yards on the north, leaving a clear triangle of about 400 yards at the longest approach, varying to zero at the shortest approach at the south edge, and 30-foot telephone lines on the east side.

All types of modern ships, including P-26, P-12 and P-30 Pursuit airplanes, A-8 and A-12 Attack, and several types of Bombardment, Transport, and Observation ships have landed without difficulty from obstacles or mud.

The rolling surface is a great aid to drainage, and at no place is the slope greater than 18 inches to the 100 feet, the average slope being about one foot to the 100 feet, with tiles through the bottoms between slopes to carry away the underground water, which in Spring is about four feet underneath the surface.

This work has been made possible by an average of about 50 men under CWA and FERA control for the past year and at the present time there are about 70 FERA men with shovels and wheelbarrows removing all the small knolls and smoothing out the small hollows, making excellent grass runways that even the softest conditions will safely handle everything but the heaviest Transports and Bombers.

Due to the fact that the commander of the 309th Observation Squadron, Major C.E. Cox,

Air Reserve, is manager of the Indianapolis-100-acre airport, which is equipped with modern 2000 feet by 100 feet runways, arrangements can be made to service any large ship forced down at Indianapolis during the spring thawout that might make concrete runways necessary, as the Schoen Field service truck with gasoline and oil can reach that airport in 45 minutes for any emergency, and a crew with truck and trailer is available to care for any crashes within a hundred miles of Indianapolis.

One Regular Army officer, 8 enlisted men and 2 Civil Service employees are stationed at Schoen Field, which is a Regular Army station on the Fort Benjamin Harrison reservation and serves as the training station for the Indiana Reserve units.

Ten thousand gallons of aviation gasoline and five hundred gallons of both winter and summer oils is the average stock of fuel on hand and accessories for the standard type engines are regular stock. Two hour emergency service from the Fairfield Air Depot at Patterson Field is available.

Field boundary and flood lights are due for installation within 60 days, making both day and night service available for all types of ships, and the Fort Benjamin Harrison water tower and radio masts are clearly lighted by ruby red globes. Officers' quarters in the Schoen Field Officers' Club are available at 25¢ per night per person for visiting officers and their families.

Through the benefits of the Recovery organizations, Schoen Field and many municipal fields in Indiana are very much improved for landing safely. The Army is benefited through tactical efficiency of the Air Corps due to the increased number of auxiliary and municipal fields for maneuvers, and the country through the funds spent in preparing them and the increased safety for the commercial pilot.

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ATTACK PERSONNEL RETURN FROM MIAMI

A flight of 12 airplanes returned to Fort Crockett, Texas, January 16th from Miami, Fla., where demonstrations were given of Attack Formations and other tactical exercises in connection with the All-American Air Races. The flight left Fort Crockett January 7th, going and returning via Baton Rouge, La.; Pensacola, Tallahassee and Lakeland, Florida. Third Attack Group personnel participating were Maj. E.L. Naiden, 1st Lieuts. D.W. Mayhew, T.L. Mosley, 2nd Lieuts. P.H. Robey, K.R. Crosher, L.C. Westley, J.H. Davies, F.E. Calhoun, M.S. Savage, P.G. Meisenholder, G.M. Marchison and Bob Arnold. Major F.C. Venn, Medical Corps, accompanied the flight. The enlisted men were Master Sergeant A.H. Loltzman, Staff Sergeants W.F. Meriweather, S.J. Krovontka, J.J. Licheay, K.A. Huber, L. Mironotes, Technical Sergeant J.A. Filkins, Sergeant J.A. Filkins, Sergeant J.D. Stephenson, Corporals W.C. Grimsley and H.F. Vandergrift.

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Major Martin F. Scanlon, A.C., returned to familiar surroundings on Jan. 15th, and assumed command of Bolling Field, D.C. He previously commanded this field, July 20, 1919 to Aug. 18, '22

NEW CONSTRUCTION AT MIDDLETOWN AIR DEPOT

Construction of the new officers' quarters at the Middletown, Pa. Air Depot has been completed, and the officers of the post have moved into them. These quarters are modern and up-to-date in every respect, and are superlatively comfortable as compared with the temporary wartime constructions previously used as officers' quarters. The new company officers' sets have garages built as separate structures. In the field officers' sets, however, a garage is incorporated as part of the structure of each set of quarters.

The total construction of new quarters completed includes two field officers' sets, six double sets for company officers, and one double set for warrant officers, a sufficient number adequately to house all the commissioned personnel of the Depot.

In addition to the new quarters, a new Officers' Mess has been completed, and is gradually being furnished. A squash court has also been built, and a tennis court is in process of construction.

Other construction projects on the post are proceeding rapidly toward completion. A new Headquarters Building has been constructed and is now occupied. New roads are being built and street lighting installed. A new, very modern, completely equipped Engineering Unit has progressed about 95 percent toward completion, and it is expected that this Depot will eventually have an overhaul capacity of 50 airplanes and 75 engines per month. The old Engineering Unit, which is in the vicinity of the new officers' quarters, will be razed, and the area it now occupies will be graded and landscaped.

Olsted Field has been considerably improved during the past few months. Numerous hazards to flying have been eliminated, and low areas in the field have been filled and graded. An improved night lighting system has been installed, complete with remote controls located in the telephone exchange to permit operation of the system at any hour of the night as needed. After the old Engineering Unit is removed, the field will be further extended.

These new structures fill sorely felt needs, and will add immeasurably to the efficient operation of the Depot. In both design and construction, the new buildings are a credit to the Quartermaster Corps, which was responsible for their erection, and to the Air Corps, which will use them the more efficiently to render service to the G.R.Q. Air Force and other Air Corps activities.

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Three members of the Third Attack Group, 1st Lieut. H.M. Bailey, 2nd Lieuts. H.F. Huglin and P.D. Bunker, Jr., are now under orders to take part in the Cold Weather Test Flight, based at Selfridge Field, using 3 Curtiss A-12 planes. They will proceed to Selfridge Field by way of Wright Field, where special equipment is to be installed. Staff Sgts. R.D. Duggar, N.F. Miltz and Corp. H.N. Scales, Jr., will accompany the pilots.

V-6715, A.C.

CHIEF OF THE AIR CORPS DECLARES G.H.Q. AIR FORCE A FORWARD STEP

The "Minute Man" in its next issue will carry an article on the Army Air Corps, to which, upon the request of the editor of that publication, General Foulcis contributed the following foreword:

The action recently taken by the War Department in putting into operation the plans which have been in course of preparation for a number of years to organize a General Headquarters Air Force, to include all the tactical combat units of the Air Corps stationed in the continental United States, is the most important and forward looking single step ever taken to secure a military air unit of adequate striking power to insure to the United States a proper defense in the air.

This force will be of a strength and have a cohesive control, uniform training, unified command and readiness for active operations which will permit the Chief of Staff, under whom it serves directly, to employ it immediately upon the occurrence of a major emergency, with all the advantages to be secured by observing the principles of war. Of these principles, the concentration of effort, the objective, surprise, the offensive and security are of primary importance, and the mobility of aircraft is such as to permit a skilful leader to apply these principles with telling effect.

The administration of all these tactical units under a single command affords, also, greater facility in peace time operation in all that pertains to technical control and Air Corps supply. It gives to the Chief of the Air Corps, as well as to all others in the War Department who are concerned with the technical control and supply of the G.H.Q. Air Force, a single responsible headquarters to deal with.

It is believed that more rapid progress may now be expected in improving the technical efficiency and completing the equipment of the G.H.Q. Air Force. These developments justify the people in feeling that their home defense in the air is now in process of being placed upon a sounder and more adequate basis than has obtained in the past.

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INSTRUMENT FLYING VERY HELPFUL IN OPERATIONS

The "Stark System" of instrument flying is now being taught at the Air Corps Advanced Flying School at Kelly Field, Texas. The SCR-183 radio sets installed in the BT airplanes at this School are functioning very satisfactorily and local facilities are ample for all pilots and students to obtain training in both beacon flying and radio orientation. "Our limited experience has already helped many of us during the morning 'weather flight' to 17,000 feet," says the News Letter Correspondent, and he then adds: "Another instance was a recent search organized for a missing pilot and airplane. Radio telephone communication with Kelly Field was maintained up to 150 miles from the field and searching airplanes were constantly talking to each other. In all, some 37 airplanes were sent over different routes and all control remained at Kelly Field.

During the air races at Miami, there was among others one flight of seven BT-2B airplanes equipped with SCR-183 sets. On account

of weather conditions the elements of this flight took off at different times and by means of radio assembled in the air for control. One of the most outstanding features of this flight to Miami was the remarkable performance of this SCR-183 set. The performance consisted of approximately 30 continuous radio flying hours without a single failure or interruption of communication all the way from Kelly Field to Miami and return, there being no maintenance or inspection of the radio equipment. Another noteworthy instance of radio communication performance encountered during this flight was that while flying toward the Pensacola Naval Air Station, Selfridge Field was heard giving Maxwell Field an O.K. on signal strength with an R-5."

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A Bill (H.R. 4129) was introduced in the House by Hon. C.I. White, of Idaho, authorizing an appropriation of not to exceed \$4,000,000 for the establishment of an Air Depot near Lewiston, Nez Perce County, Idaho.

LIEUTENANT-COLONEL HORACE MEEK HICKAM

The following brief sketch of the life and service of the late Lieut.-Colonel Horace M. Hickam, Air Corps, has been prepared for the Annual Report of the Association of Graduates of West Point:

On the historic slopes of Arlington, on November 10, 1934, a vast throng of the friends of Lieutenant-Colonel Horace M. Hickam, Air Corps, gathered to pay him the last earthly tribute. His death occurred while performing the duty he so much loved, when his airplane struck a slight embankment in landing at the post he commanded, Fort Crockett, Texas. His untimely death deprived the service of an outstanding and brilliant officer at the very threshold of a still wider usefulness.

Colonel Hickam was born at Spencer, Indiana, August 14, 1885, the son of Willis and Sally Meek Hickam. His father was a lawyer in Spencer, and Horace attended grade school and high school there. Upon completing high school he attended Indiana University for one year, receiving his appointment to the U.S. Military Academy while there, in 1904.

He spent four years at West Point, where he excelled in football, track, and gymnastics, and graduated well up in his class in 1908. He was commissioned 2nd Lieutenant, February 14, 1908, and assigned to the 11th Cavalry. On April 20, 1912, he married Helen Bamber, of Toledo, Ohio, of which union two children were born, Martha Agnes, May 11, 1913, and John Bamber, August 10, 1914. After his marriage he served in the Philippine Islands, where his son was born. Upon returning to the United States he served with General Pershing in Mexico, as a member of the 7th Cavalry, and received the Silver Star Citation for gallantry in action against Cervantes' band of Villistas, at Torochic, Mexico, April 22, 1916.

During the World War he entered aviation as a temporary Major in the Signal Corps, receiving his commission on August 5, 1917. He qualified as a Junior Military Aviator at Rockwell Field, Calif., and was then assigned to the command of Dorr and Carlstrom flying fields, at Arcadia, Florida.

After the Armistice, Colonel Hickam was assigned to duty in Washington, D.C., as Chief of the Information Division of the Office of the Director of Air Service. From then onward his duties became increasingly important and he discharged them in a manner to win the highest praise of every immediate superior and the admiration and affection of all those with whom he served. Just prior to his last command at Fort Crockett, Colonel Hickam served four years as a member of the War Plans Division of the War Department General Staff. When he left this duty in July, 1932, he was given a letter of highest commendation by General MacArthur, Chief of Staff.

One of the thrilling experiences of Colonel Hickam's varied career was a mid-air collision with the plane of Major Geiger, Air Corps, a fellow student at the Air Corps Tactical School, during formation flying on May

10, 1926. Both officers took to their parachutes and landed safely albeit Hickam's airplane had been cut almost to pieces by the propeller of the other ship. This initiation of Colonel Hickam into the famed Caterpillar Club occurred in the presence of a large assemblage of officers, enlisted men and news cameramen gathered to witness the formation flying and tactics of the School.

The passing of Colonel Horace Hickam leaves a gap in the ranks of the Army's flyers which can never be filled. Every man was his friend and admirer, and all are a unit in unstinted praise of his life and accomplishments.

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AIR CORPS OFFICERS AT FT. LEAVENWORTH, KANS.

It is not generally known, or realized, that about 40 Air Corps officers are on duty at the Command and General Staff School at Fort Leavenworth, Kansas. Four officers are members of the school faculty, 16 are students in the second year class, due to graduate in June, 1935, and 17 are in the first year class, due to graduate in June, 1936. The remaining three officers are on duty with the Air Corps Detachment, there being a sizeable airdrome with cinder runways and a modern double sized hangar on the post.

The officers on the faculty of the school are Lieut.-Colonel George H. Brett, Majors Thomas J. Hanley, Jr., George E. Stratmeyer and Captain William E. Farthing.

Air Corps students in the second year class are Majors William O. Butler, Howard C. Davidson, Hubert R. Hamman, Hubert V. Hopkins, John C. McDonnell, Captains Earl DeFord, Idwal H. Edwards, Sam L. Ellis, George F. Johnson, Harry A. Johnson, Frank M. Paul, Lowell H. Smith, Ralph H. Wooster, John R. Morgan, Robert Olds, and 1st Lieut. Kenneth N. Walker.

Air Corps officers in the first year class are Majors Carlyle H. Wash, Donald Wilson, Harry R. Young, Captains Charles Y. Banfill, John DeF. Barker, Roland Birn, Robert G. Breene, Byron T. Burt, Jr., Howard A. Craig, James T. Curry, Jr., James P. Hodges, Arthur B. McDaniel, Vincent J. Mcloy, George M. Palmer, Howard K. Pamey, Charles McK. Robinson and Dayton D. Watson.

Air Corps on duty with the Air Corps Detachment are Captain Younger A. Pitts, Lieuts. Eugene H. Rice and James L. Jackson.

A list of Air Corps officers who are to attend the next class at the Command and General Staff School is given elsewhere in this issue of the News Letter.

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Col. Jacob W. S. Wuest, Air Corps, will shortly assume command of Rockwell Field, Calif., War Dept. orders recently issued relieving him as Military Attache to Germany, Sweden, Norway, Denmark and The Netherlands, from station at Berlin, Germany, and from duty as Asst. Military Attache for Air to Austria, Switzerland and Czechoslovakia, effective on or about April 13th.

BILL CREATES AIR CORPS PROMOTION LIST

The creation of a separate promotion list for the Army Air Corps is the purpose of a Bill (H.R. 4351) introduced in the House of Representatives by the Hon. John J. McSwain, M.C., of South Carolina.

Under the provisions of this Bill, the names of all officers of the Air Corps of the Regular Army below the grade of colonel will be placed on the list and arranged in the same relative order they now have on the Army promotion list. No officer whose name appears on the original Air Corps promotion list shall be considered as having less commissioned service than any officer whose name is below him on this list. All officers commissioned in the Air Corps after the formation of the original Air Corps promotion list shall be placed thereon in accord with length of commissioned service. Any officer whose position on the Air Corps promotion list is changed by sentence of a general court-martial or by law shall be deemed to have the same commissioned service as the officer next below whom he may be placed by such change.

In the matter of promotion, Air Corps officers when credited with 3 years' commissioned service, provided they are flying officers, shall become 1st Lieutenants; after 7 years' commissioned service, Captains; after 12 years' commissioned service, Majors; after 20 years, Lieutenant-Colonels, and after 26 years, Colonels. All flying officers of the Air Corps below the grade of Colonel shall be promoted in the order of their standing on the Air Corps promotion list.

Limitations as to the number of officers in the various grades is prescribed as follows: The number of Colonels shall not be less than four nor more than six per centum, and the number of Lieut.-Colonels not less than five nor more than eight per centum of the total number of officers on the Air Corps promotion list, and the aggregate number of Air Corps officers in the grades of Colonel, Lieut.-Colonel and Major shall not be less than 25 nor more than 40 per centum of the total number of officers on the promotion list. The Bill authorizes promotions to these three grades of Air Corps flying officers of less than the required years of service only insofar as it is necessary to maintain the minimum percentage in the field officer grades. Nonflying officers shall be promoted as provided for other branches of the Army.

When application is made to the President, Air Corps officers may be placed on the retired list after 30 years' service. However, except in time of war, in computing length of service for retirement, credit shall be given for one and one-half the time heretofore or hereafter actually detailed to duty involving flying, and credit shall also be given for all other time now counted towards retirement. The number of such retirements annually shall not exceed six per centum of the authorized strength of the Air Corps.

When a flying officer of the Air Corps reaches 54 years of age, he may, upon application to the President, be placed on the retired

list. Those who may become physically disqualified for the performance of their duties as flying officers shall be eligible for retirement for physical disability.

An Air Corps officer, upon request, may be transferred to another branch of the service, in which event he shall take rank and grade therein in accordance with his length of commissioned service as computed under existing laws governing the branch to which transferred.

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AIR CORPS TROOPS MOVE INTO HAMILTON FIELD

On the crisp afternoon of December 4th, the organizations of the 7th Bombardment Group, with full packs, entrained at March Field to the stirring beat of a drum corps. The guidons told that Hqrs. 7th Bomb. Group, the 9th, 11th and 31st Bomb. Squadrons were evacuating their quarters at March Field for the occupation of their new habitat at Hamilton Field.

The trip terminated on the afternoon of the next day, when the white stucco walls of the new quarters at Hamilton Field amazed officer and soldier alike with the beauty of design and comfort, which was followed by a feeling of complete satisfaction when he stepped within his own quarters. The bunks has been set up for the soldier, and he had only to drag his bedding from the barracks bag to find himself a fit bed for the night. Succulent odors of fresh meats and vegetables coming from the kitchen assailed his nostrils. His appetite showed amazing proportions as he devoured huge portions of steak and spuds.

The columns arrived on the 5th. (The Bombers had been ferried down a few days previously). Organization was perfected in a few days, and the post and group assignments were made. Major Clarence L. Tinker, who brought the Group to the new station and became post commander, selected as his Post and Group Adjutant, Lt. Edgar T. Noyes, who had functioned as the Group Adjutant at March Field. Capt. Don L. Hutchins, commander of the field before Major Tinker's arrival, was appointed Post Executive Officer, and Capt. Lewis E.P. Reese as the Group Executive. Capts. Harold D. Smith and Arthur G. Hamilton resumed their duties as Commanders of the 31st and 11th Bombardment Squadrons, respectively. Capt. John M. Davies was assigned as C.O. of the 9th Bombardment Squadron, and Capt. Levereux M. Myers as C.O. of the 70th Service Squadron.

Situated in beautiful Marin County in the heart of the Redwood Empire, Hamilton Field is accorded the distinction of being the most beautiful of all Air Corps posts. Capt. Howard E. Nurse, Constructing Q.M., designed and built the field on a plan that took advantage of the natural beauty of the locale. For instance, the quarters of the officers, the hospital, the Officers' Club and many of the noncommissioned officers' quarters nestle among the hills, where fine old oaks and sloping grass plots set them off. The surrounding country is also very attractive.

THE MIAMI AIR MANEUVERS
By an Observer

The Miami Air Maneuvers, held on January 10th, 11th and 12th, proved again that the City of Miami appreciates and honors the men whose lives are dedicated to military aviation.

The first arrivals at the Municipal Airport was an organization prepared to welcome and care for the visiting personnel, both civilian and military. There were a number of cars held inside the boundary of the field to provide immediate transportation from the airplane parking area to the locker rooms. Other cars were provided outside of the gates for transportation to and from the hotels. Transportation from the hotels to the field was easily obtained by a telephone call to the Transportation desk. For the safety of the flying equipment there was a check and locker room system installed in the north hangar. This system was operated without the loss of a single article.

Because of the low ceiling and poor visibility north of Miami, there was a delay of arrival of many units, thus the grand aerial review scheduled for the opening day was postponed until Friday, January 11th. The first day's program was not seriously curtailed, however, as each event was allowed more time than originally planned for the program.

The outstanding military event of the opening day was the precision demonstration performed by the so called "Men on the Flying Trapeze." This team from the Air Corps Tactical School, led by Captain C.L. Chennault, Senior Instructor in Pursuit Aviation at the School and Post Operations Officer, with 1st Lieuts. J.H. Williamson and W.E. McDonald, Air Reserve, as wing men demonstrated the ultimate in Element Team Work. Some of the maneuvers executed by this team required timing in terms of tenths of a second, while others required perfect flying technique at high speeds. The application of such timing and technique to the tactical formation exercises should produce an organization of maximum effectiveness in combat.

The team executed Immelmans, half rolls, single snap rolls, roll on top of a loop, spins in formation, the formation roll and a squirrel cage roll starting from a loop in Vee and concluding with a loop in Vee. The last named maneuver required the assembly of the element column during a series of three loops.

The demonstration staged by the Squadron of P-25's of the 1st Pursuit Group was a beautiful exhibition of squadron control and maneuver. Captain George P. Tourtellet, the squadron commander, issued his instructions by radio telephone from the leading airplane and successfully arranged his flights and elements in a number of perfect formations, the most striking of which was the "AC" composed of 17 airplanes. It was extremely regrettable that the bursting bomb maneuvers of this unit resulted in a number of airplanes flying over the grand stand at a very low altitude on the first day of the meet. While the action of the Department of Commerce Official in grounding the Commander and Leader of the Pursuit

unit could be taken easily, the imposition of a fine of \$100 upon our kind host, the City of Miami, left a feeling of regret. The "grounding" of Captain Tourtellet was lifted in time for him to lead his squadron again on the second day of the Races, but Major Ralph Royce, commanding the 1st Pursuit Group, departed from Miami still "on the ground" as far as participating in the show was concerned.

The demonstrations staged by the flight of nine planes from the 3rd Attack Group were very impressive. This flight, under the leadership of 1st Lieut. Don Mayhew, swept down the field in echelon of elements, column of elements and flight line, leaving the spectators very much impressed with the speed and power of low flying aviation.

The Marines arrived during the demonstration of the 3rd Attack Group on the second day. Undaunted by the threat of an advancing line of Attack airplanes, the Marine squadron glided to a graceful landing just ahead of the Attack formation. Taking the air again near the end of the program, the Marine unit demonstrated a number of formations and then staged an interesting exhibition of dive bombing and smoke screen work.

This exhibition was educational as well as extremely spectacular from the viewpoint of the average citizen in the grandstand. Army Demonstration Units might place more emphasis upon maneuvers designed to educate the average citizen to the tremendous power of air force.

While the limited space available in this letter forbids a detailed resume of all the flying and social activities included in this year's program, the nice formation technique displayed by the National Guard Units and units from the Training Center cannot be overlooked. Likewise, the air races for civilian craft were both interesting and exciting. In fact, the entire program was complete with demonstrations and exhibitions worthy of All-American Races.

Entertainment features of the program were extensive and varied. Complimentary tickets to practically every amusement center in Miami were distributed to the visiting personnel upon arrival. Several balls, complimentary to visiting pilots, were held. The ball of the Arsnicker Club witnessed the reunion of old friends separated by years of service and the installation of Colonel Charles H. Danforth, the senior Air Corps officer present at the Races, as Chief War Hawk. The mayor's dinner and ball was enjoyed by many. All pilots were entertained either on the beach or by private parties given by the residents of Miami, and some by both. Several of the visitors enjoyed the annual party of the War Birds.

The City of Miami certainly exerted its best efforts toward making the Air Maneuvers noteworthy events for every pilot who attended. Scores of citizens gave their time to this end, and no one who had contact with the Chairman of the Air Race Committee, Mr. R.V. Waters, can ever forget his unfailing courtesy or his unflagging

zeal for making the 1935 maneuvers an enjoyable and valuable experience to all concerned.

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MAXWELL FIELD PURSUITERS AT MIAMI AIR RACES

By the News Letter Correspondent

Captain Claire L. Chennault, Air Corps, veteran Pursuit pilot at Maxwell Field, again led his wingmen through their usual thrilling performance at the Air Meet at Miami. According to the well known Reginald M. Cleveland, Air Writer, Maxwell Field's Pursuiters, who have been dubbed "The Men on the Flying Trapeze," held the crowd spellbound with acrobatics in formation. He says that the team, led by Capt. Chennault, with 1st Lieuts. John H. Williamson and William C. McDonald, Jr., Air Reserve, as wingmen, from the Air Corps Tactical School, did wing-overs, slow and snap rolls, loops, and finally a turn and a half of a spin with a perfection that seemed as if the three planes were activated by one mind.

This is by no means the first time our Pursuit Team has thrilled great crowds of spectators. They flew in the National Air Races at Cleveland and were featured on the program, following which they participated in the Georgian American Air Show held at Atlanta on Armistice Day. At Cleveland they were dubbed "The Men on the Flying Trapeze."

The original team was composed of Captain Chennault, 1st Lieut. Haywood Hansell, Jr. and 1st Lieut. John H. Williamson, Air Reserve, but Lieut. Hansell was detailed to pursue a course at the Tactical School and was replaced by Lieut. McDonald.

The total flying experience of the three flyers amounts to almost 10,000 hours, with almost thirty years in flying service, which makes for safety and enables the team to perform the most difficult maneuvers with the grace and ease which always characterizes its work.

Captain Chennault is Station Operations Officer at Maxwell Field, in addition to being Senior Instructor in Pursuit Aviation at the Tactical School. He has assembled and trained his Pursuit Team, and is certainly doing himself and the service proud by their remarkable performances.

While the team was at Cleveland, Rodif Loveland, writer for the Cleveland PLAIN DEALER, composed the following which is thought most appropriate:

They float through the air with the greatest of ease,

These three army men called the "Flying Trapeze,"

They loop in formation, do vertical 8's,
And the honors they've stolen away.

Oh, the snap rolls, both single and double,
And the formation roll they complete,
And they constantly court awful trouble,
Though their movements are classy and neat.

A CORRECTION

In the article on the Caterpillar Club in the last issue of the News Letter, the number of jumps for 1919 was given as 22. The correct number is 2.

Oh, they float through the air just as straight as a rule,
These gallant young men from the Tactical School,
They have ten times the kick of the old army mule,
And the fair hearts they've stolen away.

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COLORADO AIRMEN AT MIAMI AIR RACES

The National Air Races at Miami, Fla. were attended by the following members of the 120th Observation Squadron, Colorado National Guard: Major Virgil D. Stone, Captains Charles J. LaGue, William E. Hunter, Nolie Mumme, 1st Lieuts. Virgil W. Vaughan, George E. Batty, Henry S. Houghton and Master Sgt. Jack Burnell. Five airplanes were flown to Miami, and from the standpoint of training it was a wonderful trip. Of course, from all other standpoints it was a trip which will be held in fond memory for many years to come.

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ADVANCED AVIGATION TRAINING AT ROCKWELL

A group of twenty officers from various posts throughout the Air Corps are now at Rockwell Field, Coronado, Calif., taking a short course (six weeks) in avigation training and instrument flying. They started school work on Monday morning, January 14th, and are in class from 8:00 a.m. until noon each day, the afternoons being spent in flying avigation missions over the Pacific or in taking training in instrument flying under the hood in one of Rockwell Field's specially equipped BT-1 airplanes.

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CONSTRUCTION WORK AT MAXWELL FIELD COMPLETED

The 25 new sets of officers' quarters which have been under construction at Maxwell Field, Montgomery, Ala., have been completed and the last set turned over to occupants on January 7th.

This completes the projects for building at Maxwell Field, and with the grading and seeding of lawns nearly completed Maxwell Field will present one of the most beautiful and modern Army posts to sightseers.

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BOLLING LANDING FIELD SHOWS IMPROVEMENT

The second week of January was a busy one at the operations office at Bolling Field, D.C., with many visitors from all over the country passing through the field enroute to and from their home stations. Many favorable comments were received on the improved condition of the landing field, due to the several runways which have recently been installed.

"While not the best of Air Corps landing fields," asserts the News Letter Correspondent, "Bolling Field can no longer be called the worst."

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NEW FLYING CLASS AT RANDOLPH FIELD

A new class of 150 students will begin training at the Air Corps Primary Flying School at Randolph Field, Texas, on March 1st, next. This new class of Flying Cadets comprises 130 candidates from civil life, 16 enlisted men from the Army Air Corps and 4 enlisted men from other branches of the military service.

The course of instruction for Flying Cadets covers a period of one year at the Air Corps Training Center, primary and basic courses of four months each being given at Randolph Field and an advanced course of four months at the Advanced Flying School at Kelly Field, Texas. Upon graduating from the Advanced School, students are presented with their "Wings," given the rating of "Airplane Pilot," and assigned to duty for the period of one year, under their Flying Cadet status, with Air Corps Tactical units. At the end of that time, those Cadets who have demonstrated the required efficiency as military pilots are commissioned second lieutenants in the Air Reserve. They are then assigned to extended active duty with Air Corps tactical units under their status as Reserve officers, provided funds are available for that purpose.

The rivalry between the States of California and Texas in the matter of representation of native sons in the classes undergoing instruction at the Air Corps Training Center still prevails. In this instance, Texas with 21 students takes the lead, followed by California with 19. Los Angeles, as is usually the case, leads the cities represented with five students, the cities of New York, Detroit and Plainview, Texas, being its closest competitors with three each.

A list of the students selected for the March class is given below, as follows:

FLYING CADETS - CIVILIANS

Walter W. Ashworth	Hamilton, Mo.
Arthur W. Ayers	Lebanon, Pa.
Harvey G. Bates	Marietta, S.C.
Dalene E. Bailey	Spokane, Wash.
Willie Barton	Jefferson City, Mo.
William Russell Beemer	Sparks, Nevada
Robert J. Binford, Jr.	Chicago, Ill.
Thomas L. Blalock	Jacksonville, Fla.
Hiram Bower	Carlisle, Pa.
Willard O. Bowman	Berea, Ky.
Glenn E. Brass	Okeah, Okla.
Lawrence K. Brooks	Clayton, N.Y.
Marion Judd Brown	Nevada, Texas
Willis James Brown	Huston, Idaho
W. Robert Browne	Anarillo, Texas
Bertrand B. Bruce	Los Angeles, Calif.
Henry F. Burns	Utopia, Texas
Virgil Burns	Bloomington, Ind.
Wilbur D. Camp	Arlington, Texas
James Richard Campbell	Ontario, Calif.
Kirker Campbell	Champaign, Ill.
Chester W. Cecil, Jr.	Abilene, Texas
Charles W. Coit, Jr.	Palo Alto, Calif.
Alton Combs	Middletown, Ohio
William Edward Creer	Spanish Forks, Utah
Harold F. Cunningham	Franklin, Pa.
Fred Harmon Daugherty	Dalhart, Texas
Maurice Dale	Minneapolis, Minn.
Byron B. Dees	Ararillo, Texas

Harold E. Eads	Greeley, Colo.
Robert E. Eldridge	Los Angeles, Calif..
Bob L. Farmer	Plainview, Texas
Walter F. Fisher	Beebe, Ark.
Russell LeRoy Flolo	Aberdeen, S.D.
Bernhard G. Fortmann	Pearl River, N.Y.
H. Hoyt Freeman	Hartford, Conn.
John Loren Freund	Washington, D.C.
William P. Friar	Florence, S.C.
George A. Fuller	Muscatine, Iowa
Arthur E. Graham	New York City
Carl William Handy	Associated, Calif.
Bela A. Harcos	Los Angeles, Calif.
John Spencer Hardy	Logansport, La.
Bruce L. Harwood	Claremont, Calif.
Fred A. Hatfield	Crawfordsville, Ind.
Forrest Haworth	Fesadena, Calif.
William L. Hayes, Jr.	Sacramento, Calif.
Howard W. Helfort	Sioux Falls, S.D.
Richard M. Hobbie, Jr.	Montgomery, Ala.
Albert Carl Hubbel	Baltimore, Md.
Charles N. Hulvey, Jr.	University, Va.
Paul Clayton Hutchins	Gilmore City, Iowa
Lowell F. Johnson	Lafayette, Ind.
Robert E. Johnson	Omaha, Neb.
Elvin Carl Johnston	Scranton, Texas
Robert L. Johnston	Bellevue, Pa.
Roy A. Kamb	Mount Vernon, Wash.
Dennis William Keef	New Ilymouth, Idaho
Ralph M. Kellogg	Dover, Mass.
Milton C. Keene	Pinckneyville, Ill.
J. Williams Koett	Pittsburgh, Pa.
Charles W. Kyle	Cedarville, Ohio
Charles C. Lancaster, Jr.	Lexington, Ky.
Alfred B. Lathrop	Pasadena, Calif.
Burton D. Lee	Nixon, Texas
Albert W. Lombardini	Detroit, Mich.
Roy M. Long	Hartshorne, Okla.
Clarence K. Longacre	Williamsport, Pa.
Angus MacLachlen	New York City
Romus G. McAllister	Glendale, Ariz.
John J. McCarthy, Jr.	Ogallala, Neb.
William L. McCracken	Osceola, Iowa
George E. McCauley	Los Angeles, Calif.
John J. McIntosh	Carlisle, Pa.
Ronald Curtis Macy	Little Rock, Ark.
Clifford D. Maddox	San Diego, Calif.
George Walter Malagarie	Broussard, La.
Robert Anderson Mann	New Market, Ala.
Charles M. Marion	Detroit, Mich.
Francis J. Martin	Ottumwa, Iowa
Herbert C. Meade	Los Angeles, Calif.
Richard F. Mertin	Multnomah, Oregon
Charles G. Miller, Jr.	University City, Mo.
George E. Mullin	Wollaston, Mass.
Robert Sims Munford	Waynesboro, Ia.
Max Nail	Memphis, Texas
John I. Norris	St. Joseph, Mo.
Fred C. Norton	Bandon, Oregon
Jack Hay Oldham	Kansas City, Mo.
Robert L. Clinger	Angola, Ind.
Patrick C. O'Reilly	Eufaula, Okla.
Jarvis D. Farsley	London, Ky.
Elbert Pello	Whittier, Calif.
Carl L. Peterson	Austin, Texas
Francis Milton Peterson	Newton, Utah
Ernest Q. Petrey	Knoxville, Tenn.
Kenneth Fietch	Anherst, Ohio
Richard E. Purdy	Meeteetse, Wyoming
Simson D. Futtler	San Francisco, Calif
Claude B. Quillian, Jr.	Ocala, Fla.
Chris H.W. Rueter	Waco, Texas

FLYING CADETS - CIVILIANS (Continued)

Harold S. Rumel	Salt Lake City, Utah	Sanford W. Stuck	Kansas City, Mo.
Robert W. Ryder	Minneapolis, Minn.	Russell T. Sutherland	Champaign, Ill.
Philip M. Salaff	Brooklyn, N.Y.	Ferry G. Talkington	Crystal Springs, Miss.
Herbert D. Schultz, Jr.	Alameda, Calif.	David Duval Thomas	Detroit, Mich.
Joseph Selliken	Grafton, N.D.	Joseph H. Tomlinson	El Paso, Texas
Robert Curtis Sexton	Los Cruces, New Mexico	James L. Trew	San Diego, Calif.
Maurice Shannon	College Station, Texas	Audrin R. Walker	University, Ala.
Thomas J. Shelton, Jr.	Plainview, Texas	Dwane Leon Wallace	Wichita, Kansas
Nathan Silversmith	Brooklyn, N.Y.	Beverley Howard Warren	Flainview, Texas
Paul H. Sommers	St. Louis, Mo.	Joseph Welden Westbrook	Brownsville, Texas
Keith Spratt	Fairfield, Iowa	Orville H. Whiteneck	Aline, Okla.
Kernit D. Stevens	Portland, Oregon	Robert Carroll Wood	Haynesville, La.
Marvin Stevenson	Lisco, Neb.	Morris Wuerpel	Kingston, Mass.
Sam B. Stewart	Austin, Texas	Edward E. Yetty, Jr.	Hutchinson, Kansas.
James C. Stormont	Xenia, Ohio		

FLYING CADETS -- ENLISTED MEN, AIR CORPS

Privates

Harry J. Address, Jr.	72nd Bombardment Squadron, Luke Field, T.H. (Albany, N.Y.)
Macon E. Andrews	58th Service Squadron, Langley Field, Va. (Monroe, Va.)
Robert Francis Burnham	1st Pursuit Group, Selfridge Field, Mich. (Battle Creek, Mich.)
Ralph C. Burholt, Jr.	35th Service Squadron, Luke Field, T.G. (Port Clinton, Ohio)
Ira Lee Ellison	Hqrs. Advanced Flying School, Kelly Field, Tex. (Atkins, Ark.)
George M. Eastham, Jr.	Air Corps Detachment, Ft. Leavenworth, Kans. (Lincoln, Neb.)
Wolcott A. Fariss	46th School Squadron, Randolph Field, Texas (Sacramento, Calif.)
Jesse A. Hays	20th Bombardment Squadron, Langley Field, Va. (Acme, Va.)
James R. Howerton	79th Pursuit Squadron, Barksdale Field, La. (Pauls Valley, Okla.)
Strubbe McConnell, Jr.	79th Pursuit Squadron, Barksdale Field, La. (Shreveport, La.)
James H. McDonald	46th School Squadron, Randolph Field, Texas. (Wolfe, Texas)
Charlie McNew	73rd Pursuit Squadron, March Field, Calif. (Eldo, Okla.)
John T. Marshall	Hqrs. Squadron, GHQ Air Force, Bolling Field, D.C. (Kansas City, Kan.)
Roger M. Roberts, Jr.	95th Pursuit Squadron, March Field, Calif. (Menlo Park, Calif.)
William R. Ward	35th Service Squadron, Nichols Field, P.I. (Pittsburgh, Pa.)
John Doyle Whitt	53rd School Squadron, Randolph Field, Texas (Austin, Texas)

FLYING CADETS - ENLISTED MEN, OTHER BRANCHES OF SERVICE

Privates

Laurence Eugene Avery	Hqrs. Battery, 64th Coast Art., Ft. Shafter, T.H. (Bangor, Maine)
Clarence E. Jack, Jr.	Medical Dept., Fitzsimons Gen. Hosp., Denver, Colo. (Newburgh, N.Y.)
Elbert D. Reynolds	Battery B, 15th Field Art., Ft. Sam Houston, Tex. (Beaumont, Tex.)
Earl Willoughby	Battery A, 82d Field Art. Fort Bliss, Texas (El Centro, Calif.)

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BILL PROPOSES REHABILITATION OF CHAPMAN FIELD

Under a Bill (H.R. 4131), introduced in the House of Representatives by Hon. J. Mark Wilcox, M.C., of Florida, a sum not to exceed \$6,556,500 is authorized to be appropriated, to be expended for the construction and installation at Chapman Field, Miami, Fla., of such buildings and utilities and appurtenances thereto as may be necessary, as follows:

Radio station	\$18,000
Officers' quarters	2,550,000
Barracks	1,500,000
Noncommissioned officers' quarters	1,468,200
Fire and guard	50,000
Hospital and detachment barrack	160,000
Post Exchange	55,000
Railroad spur	20,000
Incinerator	10,000
Quartermaster maintenance	30,000
Theater and gymnasium	100,000
Sewage disposal	50,000
Enlisted men's service club	58,000
Officers' mess	75,000

Laundry	\$70,000
Garage	40,000
Beathouse	40,000
Bakery	15,000
Water system	75,000
Magazines	24,000
School for children	45,000
Reservation fence	15,000
Street lighting	25,000
Roads	100,000
Telephone construction	68,300
Quartermaster warehouse	65,000
Ordnance warehouse	30,000

The Secretary of War is authorized, when directed by the President, to accept in behalf of the United States, free of encumbrances and without cost to the United States, the title in fee simple to such land as he may deem necessary or desirable in the vicinity of Miami, Fla., as a site for such increases in the aviation field and /or the building area as he may deem necessary.

Under Section 2 of the Bill, there is au-

thorized to be appropriated not to exceed \$4,758,000, to be expended for the construction and installation at Chapman Field of such technical buildings and utilities and appurtenances thereto as may be necessary, as follows:

Improvement to landing field and building area	\$1,750,000
Runways	100,000
Hangars	2,200,000
Air Corps Warehouse	80,000
Headquarters and operations building	83,000
Parachute building	30,000
Gasoline storage and distribution	55,000
Paint, oil and dope storage	25,000
Field shops	250,000
Paved aprons	100,000
Photo building	50,000
Camera obscura	5,000
Night lighting	25,000
Machine-gun butts	5,000

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✓ BILL PROPOSES CREATION OF AN AIR RESERVE

The creation of an Air Reserve, for the purpose of promoting the national air defense, is proposed in a Bill (H.R. 4348) introduced in the House of Representatives by the Hon. John J. McSwain, M.C.

Section 1 of the Bill outlines a declaration of policy, as follows:

"It is hereby declared to be the policy of Congress to make adequate provision for the Air Reserve that it may be immediately available for effective use as a supplement to the Air Corps should national emergency demand."

In the creation of the Air Reserve, the Bill provides that it shall consist of all Reserve officers now holding commissions in the Air Reserve and who hold an aeronautical rating recognized by the War Department, and all who may hereafter be appointed in the Air Reserve under regulations now existing or hereafter issued by competent authority.

The Air Reserve, to be administered as a separate department of the Air Corps, will be under the charge of a Reserve officer, to be known as the Chief of Air Reserve. He shall be appointed by the President and serve for a term of four years unless sooner relieved. He shall serve under the Chief of the Air Corps, and during such service shall hold the temporary rank of field grade in the Air Reserve on active duty, being entitled to the same pay, allowances and flying privileges as such officer in the Air Corps.

Pending appropriations by Congress, the cost of activities of the Air Reserve shall be paid from funds heretofore appropriated for the Air Corps Reserve.

The Chief of Air Corps shall furnish the Chief of Air Reserve such assistants from the regular personnel of the Air Corps, or from civilian employees under his jurisdiction, as may be necessary to effectuate the purposes of this Act.

The duty of the Chief of Air Reserve will be to formulate plans for the supply and training of the Air Reserve, including the provi-

sion of airplanes and aeronautical equipment suitable for the training of the Air Reserve; to foster the establishment of suitable air-dromes for use of the Air Reserve; to organize the Air Reserve into tactical and administrative units; to prepare regulations for appointments and promotions in the Air Reserve and to prepare estimates of appropriations necessary to provide facilities, equipment, supplies, and training for the Air Reserve, for submission through appropriate channels to Congress.

Qualified Air Reserve pilots shall be eligible to make practice flights at any air-drome of the Air Corps or Air Reserve under such regulations as the Chief of Air Reserve may promulgate with the approval of the Chief of Air Corps. Provision shall be made for flying practice of not less than six hours per month for any qualified Air Reserve pilot applying therefor.

For injuries sustained in practice flights the Air Reserve pilots shall be entitled to the same pay, hospitalization, medical, or other benefits as allowed pilots of the Air Corps for injuries sustained in line of duty. In the event of death from injuries sustained in practice flights, the dependents of the deceased Air Reserve pilot shall be entitled to the same burial, indemnity, or other benefits as allowed dependents of Air Corps pilots fatally injured in line of duty.

Provisions shall be made to order all Air Reserve pilots who may apply therefor, on such terms as the Chief of Air Reserve may designate, with approval of Chief of Air Corps, to periods of active duty from time to time, which periods of active duty shall embrace intensive instruction in latest Air Corps developments, to the end that Air Reserve pilots may be kept informed of military aeronautical progress.

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RADIO EQUIPMENT FOR AIRPLANES

The policy of the Chief of the Air Corps pertaining to radio equipment for various types of airplanes will no doubt be of general interest to the Air Corps. This policy in general provides for airplanes to be equipped as follows:

Bombardment; Observation, Long Range; and Cargo - Command Set, Long Range Liaison Set, Radio Compass, Instrument landing equipment and Interphone.

Attack - Complete Command Set, Radio Compass, Instrument landing equipment and Interphone.

Observation, Corps and Army - Short Range Liaison, Radio Compass, Instrument Landing equipment and Interphone.

Pursuit - Command set.

Basic Training - Command Set, Radio Compass, Instrument landing equipment and Interphone.

The consummation of this plan depends, of course, upon funds made available. Funds are included in the Budget estimates for the Fiscal Year 1936.

ENLISTED PILOTS OF THE AIR CORPS

The Air Corps at the present time numbers among its piloting personnel 60 enlisted men who hold flying ratings in the Regular Army, 54 being Airplane Pilots and 6 Airship pilots and Balloon Observers. Included among these 60 enlisted pilots are 17 Master Sergeants, 3 Technical Sergeants, 13 Staff Sergeants, 3 Sergeants, 2 Corporals, 9 Privates, 1st Class, and 8 Privates.

The 6 Airship Pilots and Balloon Observers are:

Mr. Sgt. Albert C. Gamble	Ft. Bragg, N.C.
Mr. Sgt. Arvin E. Miller	Langley Field, Va.
Mr. Sgt. Ronald H. Short	Langley Field, Va.
Mr. Sgt. Olin Brown	Scott Field, Ill.
Sgt. Harrison C. Finley	Scott Field, Ill.
Staff Sgt. Joseph F. Murray	Fort Sill, Okla.

The 54 Airplane Pilots are enumerated below, as follows:

Master Sergeants

Stewart C. Smink	Aberdeen, Md.
*Samuel J. Davis	Barksdale Field, La.
John L. Waugh	Barksdale Field, La.
Carlton P. Smith	Brooks Field, Texas
*Chester F. Colby	Chanute Field, Ill.
*Cecil B. Guile	Fairfield A.D., Ohio
*Peter Biesiot	Kelly Field, Texas
Raymond Stockwell	Fort Lewis, Wash.
Boyd R. Ertwine	March Field, Calif.
Julius A. Kolb	Panama Canal Zone
*James A. Lee	Philippines
Ezra F. Mendell	Randolph Field, Tex.
Bernard Wallace	Randolph Field, Tex.

Technical Sergeants

Frank J. Siebenaler	Selfridge Field,
Paul B. Jackson	Panama Canal Zone
Douglas M. Swisher	Panama Canal Zone

Staff Sergeants

Paul S. Blair	Brooks Field, Texas
Julian M. Joplin	Chanute Field, Ill.
Tracy K. Dorsett	Duncan Field, Texas
Opal E. Henderson	Duncan Field, Texas
Maurice M. Beach	Hawaiian Department
Jerome B. McCaulley	Hawaiian Department
Fred O. Tyler	Langley Field, Va.
Ray W. Clifton	Maxwell Field, Ala.
John H. Williamson	Maxwell Field, Ala.
Thomas W. Rafferty	Randolph Field, Tex.
Arthur Hanson	Rockwell Field, Cal.
Gilbert E. Layman	Mitchel Field, N.Y.

Sergeants

Loren Cornell	Ft. Crockett, Texas
*John H. Price	Duncan Field, Texas
Charles C. Cunningham	Hawaiian Department
Randolph L. Wood	Langley Field, Va.
William C. McDonald	Maxwell Field, Ala.
Frederick H. Wilson	Panama Canal Zone
*George E. Holmes	Randolph Field, Tex.

Corporals

John D. Fitman	Barksdale Field, La.
Daniel I. Moler	Middletown A.D., Pa.

Privates, 1st Class

Noel F. Parrish	Fairfield A.D., Ohio
Cornelius K. Dunbar	March Field, Calif.
Lloyd L. Sailor	March Field, Calif.
Robert S. Angle	Philippines
Henry O. Bordelon	Randolph Field, Tex.
Thomas S. Davis	Randolph Field, Tex.
Marvin F. Stalder	Rockwell Field, Cal.
Arnold T. Johnson	Scott Field, Ill.

Privates

Vernet V. Poupitch	Brooks Field, Texas
Hamish McLelland	Aberdeen, Md.
Lawrence O. Brown	Fairfield A.D., Ohio
Vernon M. Byrne	Hamilton Field, Calif.
Russell L. Waldron	Maxwell Field, Ala.
Harry Coursey,	Middletown A.D., Pa.
John Gebelin, Jr.	Randolph Field, Texas
Edgar R. Camp	Randolph Field, Texas

Addendum - Private, 1st Class

James M. Troweck	Fairfield A.D., Ohio.
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*Completed flying training prior to 1921

Four of the enlisted men listed above are members of the famed mythical Caterpillar Club, namely, Technical Sergeants Siebenaler, Swisher, Privates Gebelin and Troweck. The last named is a second degree member.

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SIGNAL CORPS RADIO REPAIR SECTIONS

With the purpose in view of securing maximum service from Signal Corps aircraft radio equipment, to insure that such equipment is in first class operating condition prior to the delivery of reconditioned airplanes to tactical organizations, and in general to assist in the maintenance of Signal Corps radio equipment pertaining solely to the Air Corps, Signal Corps Radio Repair Sections have been established at the Middletown, Fairfield, San Antonio and Rockwell Air Depots. These sections are an integral part of these Depots and function under the Depot Engineering Officers.

The officer in immediate charge of the Section will normally be a Signal Corps officer assigned to that specific duty by War Department orders.

Circular No. 1-8, issued by the War Department, Office of the Chief Signal Officer, January 10, 1935, prescribes that radio equipment received at Signal Corps radio stations will be installed, tested in flight if necessary, and removed from airplanes by Air Corps personnel. Radio equipment requiring only minor repairs which cannot be satisfactorily and economically performed locally will be shipped by airplane transportation to the Signal Corps property officer of the Signal Corps Radio Section serving the control area in which the property is located. The equipment will be tested, adjusted, calibrated, repaired or replaced, as may be required by conditions and circumstances.

The work performed by Signal Corps Radio Sections will be in strict conformity with specifications and instructions issued by the Signal Corps Aircraft Radio Laboratory and/or the Materiel Division of the Air Corps governing the particular equipment undergoing repair or alteration.

The repair of aircraft radio equipment belonging to the National Guard or to the Organized Reserves will be handled in the same manner as that belonging to the Regular Army.

The Circular above referred to prescribes the method of disposing of equipment requiring repairs by major disassembly or rebuilding, the invoicing of unserviceable equipment, the storage of equipment, the preparation of re-

quisitions therefor, the keeping of records, the rendition of reports and the maintenance of property accounts.

Recommendations have been made by the Chief of the Air Corps to extend the Signal Corps Radio Repair Service by establishing similar sections at the Air Depots in Hawaii, Panama and the Philippine Islands.

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COL. ANDREWS ADDRESSES WOMEN PATRIOTIC ORDERS

With the new air program of the Army as his theme, Lieut.-Colonel Frank M. Andrews, Air Corps, Commander of the General Headquarters Air Force, in an address before the Women's Patriotic Conference on National Defense, held in Washington, January 31st, stated that he knew of no subject which at present is of greater importance from a national defense viewpoint than air power, and that the constantly increasing range of action and striking power of the airplane insures for it a rapidly and continually increasing importance in our scheme of national defense.

Touching upon the conception held by many that the next war will see the destruction of great cities by sudden attacks from the air, using both explosive and poison gas bombs, Col. Andrews stated that in Europe, where the countries are small, densely populated and border upon or are very near each other, the fear of such operations is great. Large scale air bombardment has never had the test of war, and no one can now accurately predict its ultimate effect. We do know, however, that it produces a terrific psychological effect as well as enormous material destruction. It may be that in war of the distant future, air attack on a large scale will alone suffice to subdue even a major power. Whether or not the United States would sue for peace because of air attack alone, such attacks against our vital areas would be a major catastrophe, and we must be prepared to prevent them. An adequate air force of our own is the only agency which can meet effectively a threat from the air.

Asserting that the War Department, after a very careful study of the various phases entering into an attack from the air against the United States by possible enemy nations, taking into consideration the strength of their air organization, the characteristics of their aircraft at present and of those to be developed in the immediate future, the conclusion was reached that only by basing aviation upon ships or upon territory near our own could an enemy make such attacks upon us. After full consideration of the strength of our Naval aviation, of the possibilities of the aircraft carriers of the world powers, and of other ships which might be used as floating airplane bases; and after consideration of land areas near our borders which might under any reasonable estimate be made available for air bases, the War Department decided upon the strength and character of military aviation we should have to prevent the development of any situation which would produce a real threat.

This airplane strength, submitted to the President, received his approval, subject to the availability of funds to purchase the air-

President, received his approval, subject to the availability of funds to purchase the aircraft and to procure the personnel.

The War Department study divides our Army aviation on the assumption of a total of 2320 airplanes into a General Headquarters Air Force, to consist of approximately 1,000 tactical airplanes, the bulk being of the combat type, bombardment, attack and pursuit, with some long range observation; also airplanes sufficient for the defense of our overseas possessions, principally of combat type; Observation airplanes to accompany the corps and armies, and Training and Transport airplanes for use in rear areas.

Characterizing the General Headquarters Air Force as the great striking element of our military aviation, Colonel Andrews concluded his address with the statement that we expect this air force to attack any enemy approaching our coasts if the fleet cannot, for any reason, operate in that area in sufficient strength to cope with the situation alone. We expect the General Headquarters Air Force to attack such enemy ground installations as he may try to establish near enough to our borders to attack us. We believe this air force will have a tremendous influence in preventing the effective development of any type of hostile attack within its range of operation.

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REPORT OF FEDERAL AVIATION COMMISSION

The President of the United States submitted to Congress on January 31st a report of the Federal Aviation Commission which carries various recommendations for permanent Federal aviation policies.

The recommendations of the Commission with respect to the Army Air Corps are quoted below, as follows:

40. The modification in air force organization now being put into effect should be continued until the merits or otherwise shall have been proven by experience. The employment of air force as an independent striking unit should continue under constant study, both in the Army and in the Navy, and should be developed to its limit by tactical maneuvers and through the procurement of material best suited to such independent operations.

41. The personnel and equipment of the air forces should be further developed, and where necessary expanded, in accordance with fixed programs of regular growth based upon the current plans of the Army and Navy. The effectiveness of the forces should be kept at the highest pitch by constant attention to superior quality of equipment and of personnel, and by the conduct of training exercises under widely diversified climatic and geographical conditions offering the greatest possible variety of operating problems.

42. Intense study and prompt remedy should be given to the inter-relationship of the national defense Services.

43. The budgetary practices of the Army and Navy in respect of aeronautical matters should be standardized for easy comparison. In both Services the funds for equipment

to be used on aircraft should be directly allocated to the authorities in charge of aeronautical development, and subsequently transferred to other branches of offices if necessary.

44. A number of officer pilots of the Regular Army and Navy should be assigned annually to the other Service, and given duty with other active air units.

45. The experimental and development work of the Army and Navy should be carried on on an increased scale. The funds provided for such work should be materially increased, as the necessary consequence of the increasing complexity of aircraft and engine construction. Special allocations should be made by both Services for a particularly vigorous developmental campaign on high-powered and highly supercharged engines, and on power-plants of diesel type.

46. Funds appropriated for experimental purposes and not paid out when expected because of a failure of an article to meet the contractor's guarantees or a failure of any contractor to come forward with an article meeting a Service specification under which funds had been set aside, should remain available until used.

47. There should be a closer coordination of Army and Navy experimental and developmental work, and the National Advisory Committee for Aeronautics should be more largely used as an agency for such coordination. A much higher degree of uniformity than now exists should be attained in auxiliary material and the methods for its development, and also in the practices of the Army and Navy in such technical matters as the analyzing of aircraft for strength, testing for performance, and so on.

48. Arrangements should be made for the temporary attachment of a few officers of the Army and of the Navy to civil activities, and especially to air transport, for study in order that the armed Services may secure the greatest benefit from civil aeronautical experience.

49. The War and Navy Departments should adopt the practice, where possible without increase of cost to the government, of making reasonable use of the facilities of approved civil aircraft repair stations for repair and service work on military and naval aircraft.

50. There should be immediate and positive action to improve the promotion situation in the Army, with special reference to the Air Corps. The authority to provide temporary rank in the Air Corps, to make the rank commensurate with the responsibilities held, should be broadened and then used.

51. The authority to select a Chief of Air Corps from among all the officers of long service in that arm, which has now expired, should be renewed.

52. The maximum term of active service with regular forces on the part of Reserve pilots graduated from the Army and Navy training schools should be increased, at least to three years and perhaps further. A cash payment should be given upon termination of this duty to ease the shock of transference to civil life.

53. Cadets accepted for training in either the Army or Navy flying schools should be required to take a definite obligation to perform a definite period of active duty after graduation, except as their resignations may be ac-

cepted in the discretion of the War or Navy Departments.

54. The aviation Reserves both of the Army and Navy should be materially strengthened, and should receive a higher priority than they at present enjoy in the allotment of funds. Consideration should be given to the establishment of Assistant Secretaries of War and of the Navy for Reserve or personnel matters. Their duties would include the encouragement and maintenance of a more effective Reserve force in both Services, particularly with regard to the fields requiring a specialized combination of technical ability and military training.

55. The Army and Navy should organize special classifications in the Reserve for essential personnel of air line organizations, and every effort should be made to secure the enrollment of such personnel in one or the other of the Reserve forces.

56. The War and Navy Departments should give serious study to measures of securing a general enrollment in some category of the Reserve of private pilots and commercial pilots other than those employed in air transport, to the maintenance of an appropriate check on the individual qualifications of civil pilots, and to the establishment of special training courses to supply highly trained civil pilots with such specifically military training as might be necessary to make them immediately effective members of a reserve.

57. There should be created a new type of government insurance for Reserve officers, covering the aviation hazard exclusively, available in amounts substantially beyond the present \$10,000 limitation, and with premiums arbitrarily maintained on a very moderate scale. The personnel of the aviation Reserves should receive the same protection in case of injury or death in line of duty as would be given to Regular officers under the same circumstances.

58. The provision for officer personnel of special engineering ability and industrial experience in the aviation field should be reconsidered both by the Army and by the Navy. An adequate number of such officers should be developed and given assurance by legislation of attractive careers in the Service. In the case of the Navy at least, we recommend the commission of such officers in a staff corps to insure continuous employment on duties connected with their specialty.

With respect to the procurement of military and naval aeronautical material, the Commission recommends that explicit authority should be granted to the Secretaries of War and Navy to negotiate contracts for quantity purchase of aircraft and other aeronautical material, full report thereof being made to Congress in each case.

Further extracts from the report of the Federal Aviation Commission will be given in the next issue of the News Letter.

Hamilton Field, San Rafael, Calif., Jan. 18.

Group training schedules emphasize ground training. This is due to the fact that only nine Bombers are at this station and they must be sent to Rockwell Field for the installation of controllable pitch propellers, before they can be used. The other planes here at this time are 12 FT-3A's (4 to each squadron), 1 BT-2A (Hqrs. Flight) and 1 C-14 (Hqrs. Flt.) Hence the flying training now consists only of individual proficiency flights with an occasional avigation flight. This Group now has 27 Bombers, four of which will soon be flown to Selfridge Field for cold weather tests.

Two of the Bombers at Rockwell Field were badly damaged when Cadets Edward W. Virgin and Alexander W. Bryant nosed over after landing.

It is expected that our Bombers will be ready for flight by March 1st, except for those four used on the special project by the Chief of the Air Corps.

Captain Junius I. Smith, Medical Corps, has been assigned to this station.

Officers recently reporting to this station were assigned as follows: 2nd Lieut. Richard T. King and 2nd Lieut. Allen L. Erickson (Air Reserve) to the 9th Bombardment Squadron.

Major C.L. Tinker, Commanding Officer, has designated Major Fabian L. Pratt, M.C.; 1st Lieuts. James W. Spry, Engineering Officer; and John G. Moore, Operations Officer, as the Aircraft Classification Committee for this station.

The Secretary-Treasurer of the Officers' Club is 2nd Lieut. Roy H. Lynn.

Capt. Devereux M. Myers has taken up a new game here which he calls Badminton. The idea, according to the captain, is to knock a shuttlecock back and forth over a net with a small racket.

The Public Relations Officer, 2nd Lieut. Eugene H. Beebe, and the Provost Marshall, Police and Prison Officer, 1st Lt. Walter R. Agee, have as their assistants, 2nd Lieuts. James E. Roberts and Joel L. Crouch, Air Reserve, respectively.

120th Observation Squadron, Colorado N.G.

At present we are taking delivery of 8 C-19E airplanes from the Regular Army through the San Antonio Air Depot. Four planes were received to date, and Lewry Field personnel are highly pleased with their performance.

Two of our C-38's were ferried to the S.A.A.D. for overhaul and will be assigned to the Arkansas National Guard. One C-38 and one C-38E will be turned over to the Minnesota and Missouri National Guard, respectively.

Four new men were commissioned in our Squadron recently, viz: 2nd Lieuts. Baxter L. Ireland, Eugene Cunningham, Daniel F. Burns and William C. Calhoun. The Squadron now has a total of 20 officers..

Fort Crockett, Texas, January 17th.

Six Air Reserve officers were assigned to and joined the Third Attack Group for a six

months' tour of extended active duty beginning the first of the year, viz: 2nd Lieuts. C.C. Harris, Jr., of Galveston, Texas; C.O. Miller, Connorsville, Ind.; S.V. Payne, Fannin, Texas; E.V. Robnett, Jr., San Antonio, Texas; Clayton Stiles, Chicago, Ill. and W.E. Waters, Millen, Ga.

Air Corps Tactical School, Maxwell Field.

The Commandant, officers and men of Maxwell Field were hosts to the City of Montgomery on Monday evening, Jan. 14th, on the occasion of the Governor's ball, celebrating the inauguration of Governor Bibb Graves into office. Some 5,000 people from Montgomery and surrounding cities were present for the grand march at 9:00 p.m. The scene of the ball was Hangar No. 4, which was beautifully decorated with flags and bunting for the occasion. Flags of the United States and of other nations, also the flag of Alabama surrounded the Governor's box. Uniforms of the Army and Navy appeared mixed in with the crowd and a brilliant and successful evening was enjoyed.

Arrangements were made for the President's ball to be held in the same hangar on Jan. 30th, a large crowd being expected.

Two airplane accidents within the last two months saddened the personnel at the Tactical School. The first occurred on December 11th, when Capt. A.B. Ballard, A.C., and 1st Lieut. Ricardo Castenada Leon, Mexican Air Force, collided in the air, the planes crashing and killing both pilots. The Commandant of the School, Lieut.-Colonel John F. Curry, with Majors Wm. O. Ryan, A.C. and Thomas L. Gore, M.C., Capt. Melvin B. Asp, Warren R. Carter and Kenneth C. McGregor accompanied the body of Lieut. Leon to Mexico City as escort of honor.

The second accident occurred on January 7th, when 1st Lt. James L. Majors was returning from Aliceville, Ala., after ferrying to that town on an errand of mercy a soldier from the field whose father was ill. On the return trip, bad weather and fog apparently blotted out all visibility, and the pilot crashed 10 miles short of the field and was instantly killed.

The instructors and students returned on January 2nd after a well deserved holiday vacation and are hard at work again. The School is in its 20th week, and the subject now being studied is Attack Aviation.

New arrivals at Maxwell Field were Major Raymond E. O'Neill, who was assigned as instructor at the School in Balloons and Airships; Capt. William H. Lawton, M.C., a recent graduate of the Flight Surgeon's School at Randolph Field, Texas, who was assigned as Assistant Flight Surgeon; 1st Lieut. Ralph A. Szavelly, from March Field, Calif., assigned as Asst. Post Operations Officer and C.O., Ordnance Detachment.

Major Guy D. Griggs, M.C., absent at the Army and Navy General Hospital at Hrt Springs, Ark., for the past several months, V-6718, A.C.

has been retired according to recent notification from the War Department.

Capt. Wm. H. Powell, M.C., is on D.S. at Randolph Field, pursuing the course at the Flight Surgeon's School.

Major Wm. O. Ryan was relieved as Post Executive Officer and detailed to the Air Corps Board. He and Lieut. Gordon F. Saville, who was relieved as Instructor, are the only officers so far appointed to the Board.

Tech. Sgt. Henry M. Ruhs was transferred from Kelly Field to Hqrs. of the School.

Staff Sgt. Donald Williams, promoted 1st Sgt., was relieved as NCO in charge of Reproduction at the School, and assigned to Hqrs., his former position being taken over by Staff Sgt. James Robinson.

Warrant Officer Terry B. Jackson departed from this station and will be replaced by Warrant Officer Chester, now absent sick in Letterman General Hospital.

The Basketball season will officially open early in February. Uniforms and equipment are on hand and the squadron teams are busily at practice for what appears to be the largest basketball year seen at the field so far. The four teams at the field are the 51st and 54th School Squadrons, Headquarters of the School, and the "Spare Parts Team," composed of all detachments.

The 54th acquired several new players since last year and promises to furnish plenty of competition. It will be coached by Staff Sgt. Stephen P. Riales, assisted by Sam Nelms, former Hawaiian Department Champion. They promise a real team.

First Lieut. Frank F. Everest, Jr., Athletic Officer, has equipped Hangar No. 6 as a first class gymnasium, and as soon as the backstops are padded, a perfect basketball floor will be ready for the Inter-Squadron games. With the snappy new uniforms and the excellent squadron spirit displayed by all the organizations for sports here, an interesting season is predicted.

Bolling Field, D.C., January 15th.

The officers of Bolling Field, with very much regret, bade good-bye to Lieut.-Colonel H.C. Kress Muhlenberg on January 14th, when he left for his new assignment as Air Officer, Headquarters 3rd Corps Area. Colonel Muhlenberg had been our Commanding Officer only since June 13th last, but he and Mrs. Muhlenberg, through their personality, interest in the work and pastimes of both officers and enlisted men and their cordiality with all with whom they came in contact, had won a very warm spot in the hearts of the personnel of this command. His many friends are very glad that his new assignment does not take him very far away.

The officers and ladies of Bolling Field gave a farewell dinner to Colonel and Mrs. Muhlenberg on January 10th at the Officers' Club. The Reserve Officers of the District of Columbia gave a dinner to Colonel Muhlenberg at the Army-Navy and Marine Country Club on the following day. The Colonel has shown great interest in the training of Reserve Officers since coming to Bolling Field, and this

dinner was a token of their appreciation.

The personnel of the post welcomed Major and Mrs. Martin F. Scanlon and are delighted to have their one time Commanding Officer return to the field for another tour of duty.

SCOTT FIELD CHALLENGES AIR CORPS DISCIPLINARY RECORD

During the thirteen month period from January 1, 1934, to January 31, 1935, Scott Field had two men in its Guard House in January, 1934, only one man in February, and no men in confinement for the ensuing eleven months. During this same 13-month period it had one General Court Martial, one Special Court-Martial and but eleven Summary Courts-Martial trials and convictions.

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CAPTAIN BEVERIDGE DIES IN HOSPITAL

The sad news has just reached us that Captain John Beveridge, Jr., Air Corps, died at 12:10 a.m., February 1st, at the Walter Reed General Hospital.

Captain Beveridge had been ill for some months and Medical Officers held no hope for his recovery. He is one of the veteran pilots of the Air Corps, entering the military service during the World War.

He was taken ill while attending the Air Corps Tactical School at Maxwell Field, Ala. and he was immediately transferred to the Walter Reed Hospital.

Prior to being detailed to the Tactical School, Captain Beveridge was on duty as Chief of the Materiel Liaison Section, Office of the Chief of the Air Corps, Washington. He served in that office for a period of four years.

Of a very likeable personality, Captain Beveridge made many friends, and his death is a severe loss to them as well as to the branch of the service which he loved so much.

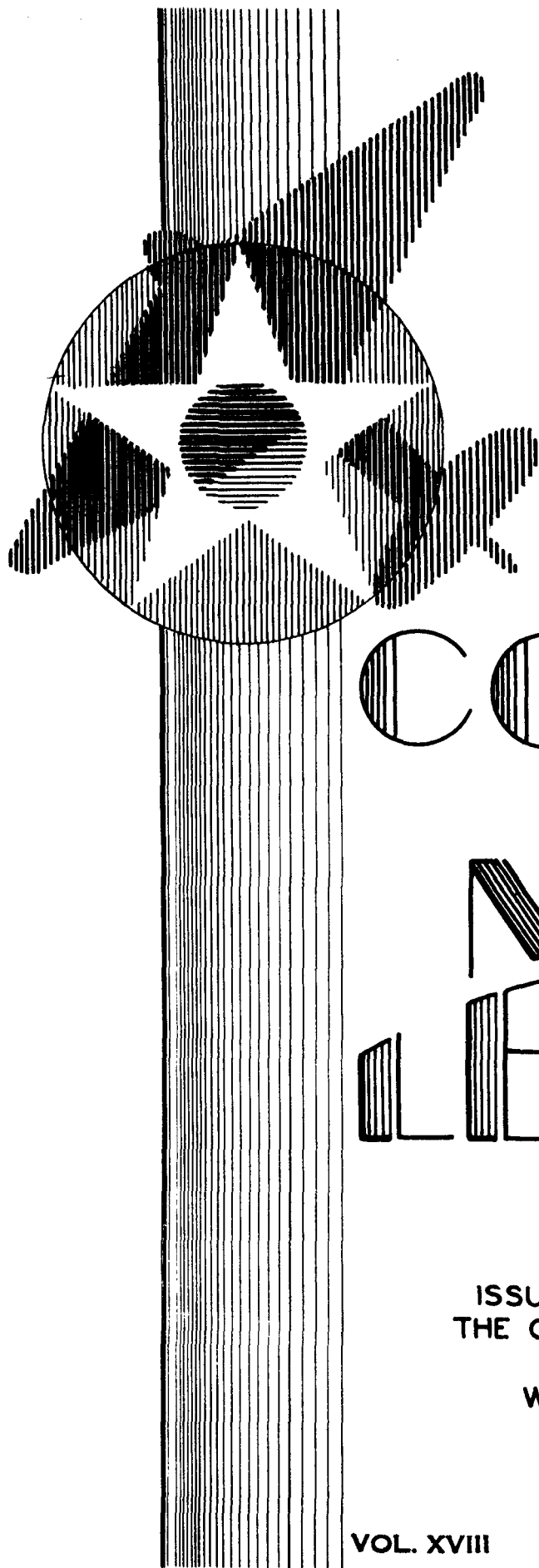
A devoted husband and father, his loss is an unbearable one to those who were so near and dear to him, and the sincere sympathy of the Air Corps is extended to his bereaved family.

SOME OF THE MORE INTERESTING BOOKS AND DOCUMENTS
RECENTLY ADDED TO THE AIR CORPS LIBRARY

Available for loan to Air Corps Organizations only upon request to the
Air Corps Library, Munitions Bldg., Washington, D. C.

- A 10/Russia 24 L'Aviation sovietique au salon de l'aviation a Paris - Grand Palais 1934. 1934. 19p. incl. illus. 24 cm. English title: Soviet aviation at the aviation salon at Paris, Grand Palais, 1934.
- C 70/13 Steed, Wickham. Aerial warfare: secret German plans. Lond. July 1934. Caption title, 15f. 24 $\frac{1}{2}$ cm. Takes up bacteria and gas warfare and the circulation of same in underground railways.
- C 71.6 France/4 La Radio-Industrie. Raid Rossi et Codos; record du monde de distance en ligne droite 9.104 kilom. Paris, 1934. 12 p. incl. illus. 29cm. English Title: Flight of Rossi and Codos; world distance record in straight line 9.104 kilom.
- D 13.3 Gyroscope/5 Sperry gyroscope co., inc. The Sperry pilot for automatic flying. Brooklyn, c1934. 23p. incl. illus. diags. 19 $\frac{1}{2}$ cm.
- D 52.39/121 Levy, Joseph. Notice technique de l'extincteur au bromure de methyle pour aeronefs. 4ed. nd. 25 p. incl. illus. diags. 21cm. English Title: Technical notice of methyl bromide extinguishers for airships.
- D 52.9/15 Vinay, Louis. Les parachutes Louis Vinay. Parid, nd. 46 p. incl. illus. diags. 24 $\frac{1}{2}$ cm.
- F 10/U.S. 39 Foulis, E.D. Army Air Corps depots need modern equipment... N.Y. Jan.2, 1934. caption title, pp.4-7, incl.illus.30cm. From American Machinist, Jan.2, 1935.
- 629.1344 D91 Duncan, Richard. Stunt flying by Captain Richard Duncan... Chicago, The Goodheart-Willcox co. inc., 1930. 183 p. illus. 20 $\frac{1}{2}$ cm.
- 629.192 Orlebar, Augustus Henry. Schneider trophy; a personal account of high-speed flying & the winning of the Schneider trophy, by Wing-Commander A.H. Orlebar... Lond. 1933. 237 p. illus. 22 $\frac{1}{2}$ cm.
- 92/143 Hart, Liddell. Colonel Lawrence the man behind the legend. N.Y. 1934. 382 p. incl. illus. maps, 24cm.
- 92/RE7 Roosevelt, Theodore. Theodore Roosevelt an autobiography with illustrations. N.Y. 1916. 615p. illus. 20 $\frac{1}{2}$ cm.





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WAR DEPARTMENT
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VOL. XVIII

FEBRUARY 15, 1935

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OFFICE OF THE ASSISTANT
CHIEF OF STAFF
U.S. AIR FORCE
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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NATIONAL AIR FRONTIER DEFENSE ASSOCIATION ANNOUNCES ITS POLICY

The following policy was adopted by the National Air Frontier Defense Association:

"To promote interest in and secure Congressional action to bring about the establishment of a system of Air Frontier Defense bases in the United States and Insular possessions and a substantial increase in the Air Force in connection therewith; to leave to the War Department all policies relating to the location of such bases and questions pertaining to their equipment, personnel, training, and operation."

General Charles E. Kilbourne, G.S.C., Assistant Chief of Staff, War Plans Division, and Major Follett Bradley, G.S.C. (A.C.), were present at the initial meeting of the Association in Washington, D.C. The War Department has announced that it is in accord with the above policy of the Association and expects to have an opportunity to show the need for Air Corps permanent stations in addition to those it now has in hearings before the present session of Congress.

General Kilbourne, who several days ago departed for the Philippines to assume his new duties as Commanding General of the Harbor Defenses of Manila and Subic Bays, recently made a statement in an open hearing conducted by the Military Affairs Committee of the House of Representatives, to the effect that what is deemed necessary is to provide in each strategic area the necessary installations for the service of G.H.Q. Air Force units when concentrated in such area for maneuvers. The Air Corps is now, and has been for some time, engaged in a survey of the several strategic areas.

It might be of interest to know the specific purposes of these bases and, briefly, the methods of utilizing them in peace and in war.

First, let it be understood that, while in peace certain specific Air Corps units will be assigned a "permanent station" in each area, actually their occupation of these stations will be permanent only in the sense that they will be located there during such times as they are not engaged, at some other locality, in maneuvers in peace or hostile operations in war. In the event of war, probably not more than a very small number of the permanent stations will be occupied at the same time

by combat units, for it is inconceivable that serious attacks on the United States in force could be launched against several localities simultaneously. The location of the country or countries at war with us will indicate in a general way the most likely theatre or theatres of war and of operations. The threatened sector within those theatres will be determined through various sources - naval and military intelligence, surface ships, and submarines and aircraft. When the theatre is determined, the Air Force will be partially concentrated to protect that theatre. When the specific threat against any sector has been located, the Air Force will be still further concentrated to meet it and will go into action as soon as effective results can be obtained.

It is impossible, and in fact highly undesirable, for each permanent station to be large enough to accommodate the whole Air Force, or even a major portion of it. To attempt such a manner of operation would be to place all of one's eggs in one basket, and would render the Air Force concentrated thereon subject to major damage in the event of a successful hostile air attack. On the contrary, each permanent air station will serve as a base or nucleus for the operation of that part of the Air Force deemed necessary to meet the threat against the area served by that permanent station. These military facilities will be augmented by suitable civilian facilities in each area.

The growth of civil aviation, carefully fostered by the Federal, State and local governments, together with the patriotic air-mindedness of local communities, may be expected to supply most of the operating fields which will be necessary in the event of war. However, a necessary step in the provision of adequate air defense is the acquisition and construction of the additional permanent Air Corps stations, and their equipment with the necessary airplanes and personnel. When they are thus garrisoned, the commanding officers of each will be specifically charged with the accurate and detailed determination of the location, size, and numbers of the required civil fields needed in his area to accommodate war operations. For such of these fields as cannot be pre-

pared as indicated above as an incident of commercial air development, suitable sites will be selected and estimates of cost in money and man hours will be prepared and held until war is threatened.

Frequent peace-time maneuvers will be held in the areas served by each permanent Air Corps station to perfect the training of the various units of the Air Force team, and to determine the adequacy and progress of the program to provide the necessary operating fields.

So far, this discussion has been limited to the Air Force alone. However, we must not forget that the Air Force is but one agency of national defense, albeit a most important one. The Navy, the harbor defenses, and the other combat arms and services of the Army are all absolutely essential to adequate defense, and to place entire reliance on any one would be the height of folly. Complete security demands all these agencies. Their places and functions in the national defense scheme may be roughly and briefly visualized as follows:

The primary function of the Navy is to maintain inviolate our vital sea communications and deny them to the enemy. In so doing it may protect the coast indirectly. If the condition and situation of our fleet are such that it can and does operate effectively in any sea area, our coast line covered by that sea area is safe from attack by naval, air or ground forces. However, in view of the fact that the primary mission of the fleet requires that it be free to move and operate in any waters, the incidental protection it may afford a given part of the coast is transient, and therefore cannot be assigned a permanent value in the Army's plan of defense.

The Army is responsible for the direct defense of the coastal and land frontiers. This is necessary in order that the United States Fleet may be free to conform to the movements of its principal objective, which is the hostile fleet. The development of a well-balanced Air Force as a combat arm of the Mobile Army gives to us a powerful element for use in situations wherein the fleet has been unable, for any reason, to prevent the approach of hostile forces to a position from which they can attack. Like the Navy, the Air Force must be ready to operate immediately on outbreak of war and can strike powerful blows against the enemy while the latter is still beyond the sphere of action of the harbor defenses and the field armies. In certain situations the Air Force may afford direct support to the fleet.

In the Army's defense of the coast the G.H.Q. Air Force affords a long-range, highly mobile striking force, and the ground troops a line of resistance in

which the harbor defenses constitute "strong points." It is by means of all three of these agencies that the Army provides for the accomplishment of its responsibility for the direct defense of the coast.

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PROMOTIONS AND CHANGES OF STATION OF AIR CORPS OFFICERS

The temporary promotion of Air Corps officers in order to give them suitable rank commensurate with the duties which they are performing is now under the process of being accomplished.

This matter of insufficient rank of Air Corps officers for duties performed by them is one which has been in debate for quite a number of years. The Morrow Board in 1925, cognizant of this situation in the Air Corps, proposed a remedy for it by advocating that temporary increased rank be given those Air Corps officers performing duties which called for higher rank than that actually held by them.

The Air Corps Act of July 2, 1926, embodied the necessary authority to award this increased temporary rank to Air Corps officers, where circumstances warranted it, but for certain valid reasons this particular provision of the Act was not carried out until this year.

The Special War Department Board, headed by the Hon. Newton D. Baker, former Secretary of War, and the President's Federal Aviation Commission made similar recommendations with respect to temporary increased rank of Air Corps officers, and these recommendations, coupled with the emphasis placed upon this need by the organization of the G.H.Q. Air Force, produced a situation which caused the War Department to set the machinery in motion to make the proposition of temporary increased rank for Air Corps officers an actuality.

Elsewhere in this issue of the News Letter is published a War Department announcement of the temporary increased rank given to the Commanding Officer of the G.H.Q. Air Force, his staff, and the commanders of the First, Second and Third Wings.

Special Orders of the War Department just issued announce further temporary promotions of Air Corps officers, whereby Lieut.-Colonels Delos C. Emmons, William C. McChord, Jacob E. Fickel, Frederick L. Martin, Majors Henry W. Harms and Junius W. Jones assume the temporary rank of Colonel, and Majors Oliver P. Echols, Harold A. Strauss, Frank D. Lackland and Dudley B. Howard, that of Lieutenant-Colonel.

The new assignments given to the Air Corps officers temporarily promoted

thus far are stated below:

Brig. General Henry C. Pratt from Wright Field, Ohio, to Langley Field, Va. as Wing Commander, Second Wing, G.H.Q. Air Force.

Brig. General Henry H. Arnold, Wing Commander of the First Wing, G.H.Q. Air Force, remains at his present station, March Field, Calif.

Col. Gerald C. Brant goes from Brooks Field to Barksdale Field, La., as Wing Commander of the Third Wing, G.H.Q. Air Force.

Colonels Emmons and McChord remain at their present stations, the former as Wing Commander of the 18th Composite Wing, Fort Shafter, T.H., and the latter as Wing Commander of the 19th Composite Wing, Albrook Field, Canal Zone.

Colonels Harms and Jones also remain at their present stations, the former as Commandant of the Air Corps Primary Flying School at Randolph Field, Texas, and the latter as Commandant of the Air Corps Technical School at Chanute Field, Rantoul, Ill.

Colonel Jacob E. Fickel, Chief of the Buildings and Grounds Division, Office of the Chief of the Air Corps, Washington, D.C., assumes the duty of Commandant of the Air Corps Advanced Flying School at Kelly Field, Texas; while Lieut.-Colonel Frank D. Lackland, at present on duty in the Plans Division, Office of the Chief of the Air Corps, assumes the duty of Chief of the Field Service Section, Materiel Division, Wright Field, Ohio.

Lieut.-Colonels Echols, Strauss and Howard remain at the Materiel Division, Wright Field, in their respective positions of Chief of the Engineering Section, Chief of the Procurement Section and Chief of the Administrative Section.

Colonel Martin, upon the completion of his present course of instruction at the Army War College, Washington, goes to the Materiel Division for duty as Executive thereof.

The Air Corps officers assigned to duty on the staff of the Commander of the G.H.Q. Air Force will be stationed at Langley Field, Va.

The orders issued to the officers above named become effective on March 2nd, next.

The foregoing assignments to duties involving temporary rank are merely a part of the entire plan which, the War Department has announced, will also involve assignment of appropriate rank to the commanding officers assigned to groups and squadrons.

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War Department Orders just issued direct Col. Henry G. Fisher, now on duty as Chief of the Plans Division, Office of the Chief of the Air Corps, to proceed on July 1st, next, to Maxwell Field, Montgomery, Ala., and assume duties as commanding officer of that field and as Commandant of the Tactical School.

AIR CORPS MANEUVERS WITH CAVALRY

During the past year, Flight D, 16th Observation Squadron, Marshall Field, Fort Riley, Kansas, together with a detachment from Brooks Field, Texas, participated in the Cavalry School maneuvers, which continued throughout a whole month. One flight, consisting of three O-19 airplanes, with Captain Calvin E. Giffin as flight commander, cooperated during the early part of the exercises with the mechanized cavalry. The other flight, consisting of three O-25C airplanes, with Captain N.R. Laughinghouse in command, cooperated with the horse cavalry at first, and during the latter part of the maneuvers, with the mechanized forces.

The maneuvers were very successful on both sides. It was the first time in history that airplanes were used with the mechanized cavalry in such maneuvers. The results were highly satisfactory, and it was found that the airplane is indispensable in maintaining constant surveillance over enemy mechanized forces, due primarily to the high mobility and large area of operation of this force in all directions.

In the course of these exercises, it was also found that it is necessary to send out friendly airplanes in advance to reconnoitre for the mechanized forces.

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MIAMI FLIGHT PROVES VALUABLE TRAINING

Brooks Field, Texas, was substantially represented at the recent Air Races at Miami, Fla., a flight of 22 airplanes and personnel comprising 23 officers and 18 enlisted men, commanded by Lieut.-Col. G.C. Brant, commander of the field, taking off on January 7th for Miami, via Barksdale and Maxwell Fields and Lakeland, Fla. Landing at Lakeland for gas, the flight had the pleasure of attending the dedication of one of the most splendidly planned and constructed airports in the country. Possessing surfaced runways, permanent buildings, meteorological equipment, etc., and situated on the shores of a lake three miles in length and about one and one-half miles in width, which affords an excellent harbor for seaplanes, this airport is the pride of the citizens of Lakeland, who turned out en masse to attend its dedication. That evening the good people entertained the 12th Observation Group with a dinner dance, and the personnel from Brooks Field will long remember this most gracious gesture of hospitality.

Several tactical problems were carried out during the flight, and everyone is of the opinion that one flight of this nature is more valuable for tactical training than many worked out at the home airrome. V-6725, A.C.

G H Q AIR FORCE STAFF AND WING COMMANDERS

A recent announcement of the War Department is to the effect that the principal members of the General Staff of the GHQ Air Force, which officially comes into being on March 1, 1935, have been designated, and have reported to the Air Force Commander, Lieut.-Colonel F.M. Andrews, for temporary duty in Washington. The eventual strength of Colonel Andrews' Staff will be about 23 Air Corps officers, and such additional officers of the other Services as may become necessary, but, initially, only a few will be assigned. As the need for additional Staff officers becomes apparent, they will be selected. Those now designated are:

Major Hugh J. Knerr, A.C., Chief of Staff.

Major Harvey S. Burwell, A.C., Assistant Chief of Staff, G-1, Personnel.

Major Follett Bradley, A.C., Assistant Chief of Staff, G-2, Intelligence and Public Relations.

Captain George C. Kenney, A.C., Assistant Chief of Staff, G-3, Operations and Training.

Major Joseph T. McNarney, A.C., Assistant Chief of Staff, G-4, Supply and War Plans.

Wing Commanders have been designated as follows:

1st Wing (West Coast) Lieut.-Colonel Henry H. Arnold, A.C.

2nd Wing (East Coast) Lieut.-Colonel Henry C. Pratt, A.C.

3rd Wing (Central States) Lieut.-Colonel Gerald C. Brant, A.C.

As has previously been announced, Colonel Andrews will be given the temporary rank of Brigadier General. Major Knerr will be temporary Colonel, and the Assistant Chiefs of Staff will be temporary Lieutenant-Colonels. The Commanders of the 1st and 2nd Wings will be temporary Brigadier Generals, and the Commander of the 3rd Wing will be temporary Colonel.

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AN AIR-MINDED GOVERNOR

Aviation enthusiasts in the State of Washington, particularly members of the 41st Division Aviation, National Guard, are pleased with their Governor and Commander-in-Chief, "because Governor Martin likes aviation."

The Chief Executive of the State was active in securing the new National Guard hangar at Felts Field, Spokane, and is a regular passenger across the State in National Guard airplanes. One of his three sons, Dan Martin, holds a student pilot's permit, while the youngest son, Frank, attends all National Guard camps each year.

ARMY AIR CORPS FLIGHT TO PANAMA CANAL ZONE

On or about March 1st, next, the 31st Bombardment Squadron, a unit of the 1st Wing of the recently created General Headquarters Air Force, with 10 Martin B-12A airplanes, will depart from Washington, D.C., on a one-stop flight to the Panama Canal Zone. The intermediate stop will be at Miami, Florida, for refueling. The squadron will be under the command of Captain Harold D. Smith, Air Corps, who will have 15 of his squadron officers and 16 of his enlisted men accompany him. The home station of this Squadron is at Hamilton Field, near San Rafael, Calif., the new Air Corps field to which it recently moved from March Field, Riverside, Calif.

The purpose of the flight is to provide routine air navigational and technical training for Air Force personnel.

Present plans call for the squadron to proceed to Rockwell Field, Coronado, Calif. on or about February 10th, for the purpose of a check of the equipment at the Air Corps Depot at that station. From Rockwell Field, Captain Smith will lead his Squadron to Washington, D.C., for the take-off southward. The planes will be equipped with the latest radio instruments and other air navigation equipment.

It will be recalled that ten similar Army airplanes, under the command of Lieut.-Col. Henry H. Arnold, Air Corps, successfully carried out a long-distance flight from Washington, D.C., to Fairbanks, Alaska, and return, in the summer of last year. On the return trip, and for the first time in aviation history, this Flight connected Alaska and the mainland of the United States by air without an intermediate stop, the journey from Juneau, Alaska, to Seattle, Wash., being made in 5 $\frac{3}{4}$ hours.

On the Panama Flight, the 31st Squadron will leave Washington in the early morning for Miami, a distance of 918 statute miles. After the planes are refueled, the second leg of the flight will be to France Field, Canal Zone, the planes proceeding directly over the Caribbean Sea. The State Department has arranged with the proper foreign Governments for the airplanes to fly over any of their territories that may be traversed en route.

Captain Smith's personnel will include V-6725, A.C.

the following officers and enlisted men:

Officers:

Major Fabian L. Pratt, Medical Corps, Flight Surgeon.
1st Lieuts. John C. Moore Edgar T. Noyes
James W. Spry Donald J. Keirn
Donald R. Lyon Chas. B. Stone, III
2nd Lieuts. Lloyd R. Watnee Eugene H. Beebe
Wm. M. Garland Marvin L. Harding
William Ball Chas. G. Williamson
Roy H. Lynn

Radio Operators

Staff Sergeant Kennard D. Wilson
Sergeants Harold E. Cooper, Allan P. Cross
Corporal Rudolph Lesnick

Airplane and Engine Mechanics

Master Sergeant Charles F. Cravlin
Technical Sergeants William H. Blackden,
Nels E. Swanson, Karl T. Wiedekarp,
Staff Sergeants Philip P. Monroy, Francis L.
Kurtz, George V. Newman, Thomas F. Tooney,
Mathew A. McGraw, Paul S. Patterson, Robert W.
Stauffer.
Sergeant Joe Howard.

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ADVANCED AVIGATION TRAINING UNIT STILL AT IT

The student officers of the Advanced Avigation Training Unit are now in their fourth week of instruction. With the morning spent in the classroom, the afternoons spent in the air and the evenings dedicated to the solution of problems to be turned in the next morning, the students are having difficulty finding all that "spare" time someone foolishly told them to expect at Rockwell Field. To break the monotony and maintain the "mental alertness" of the students, trips to Catalina Island and the Douglas Aircraft plant have been added to the curriculum at strategic points.

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WEATHER BUREAU FLIGHTS BY NATIONAL GUARD AIRMEN

A cooperative program with other governmental agencies has been carried on by the 41st Division Aviation, Washington National Guard.

Starting July 2, 1934, pilots of the Division Aviation have been making daily Weather Bureau flights for the airways weather station at Felts Field, Spokane, Wash., with the result that 217 hours of weather flying is today recorded.

The average flight takes one hour and 20 minutes, and altitudes ranging from 17,000 to 20,000 feet are attained. Oxygen tanks are used on many trips. Temperatures of several degrees below zero were encountered. Every pilot in the Squadron has engaged in these weather flights, which have proven very satisfactory to the Weather Bureau.

Many flying hours have been accumulated by the 116th Observation Squadron in its cooperative program with the Forestry Service. Forestry District No. 1, located generally in the Spokane region, is the largest forest district in the United States.

For the last two years thousands of C.C.C.

students have been in this region, freeing the forests from blister rust. It is in this work that the National Guard planes cooperated mostly.

Radio communication has been another important phase of the cooperative program. Every Monday night the Squadron conducts communications with the 148th Field Artillery, Idaho National Guard, at Coeur d'Alene; the 161st Infantry regiment, Washington National Guard, Spokane, and Regular 4th Infantry troops at Fort George Wright, Spokane.

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PURSUIT TO BECOME ATTACK

Personnel of the 17th Pursuit Group, March Field, Riverside, Calif., have noted with keen interest the announcement that this Group is shortly to be changed to the 17th Attack Group. Already Attack Tables of Organization, Attack Manuals, Supply Tables, and tactical lectures on Attack Aviation are making their appearance.

Much of the anticipated sorrow at seeing their units reconstituted to Attack and having, consequently, to give up the single-seaters has not been in evidence, probably largely due to the belief that the Group will be supplied with the new Northrup Attack plane. This plane has been seen at this station on several occasions as a result of test flights from the nearby factory, and its performance and appearance have been very heartening to its prospective future pilots.

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ANNUAL INSPECTION DIVISION CONFERENCE

The annual conference of the Air Corps Inspection Division, for the discussion of technical matters in connection with aircraft maintenance and inspection in the various Control Areas, was held at the San Antonio Air Depot, Duncan Field, Texas, beginning February 4th. Attending were Captain Max F. Schneider, Chief of the Inspection Division, Office of the Chief of the Air Corps; Captain H.A. Bivins, Technical Supervisor, Fairfield Air Depot Control Area, and his assistant, Staff Sergeant Frank D. Blair; Captain B.J. Toober, Technical Supervisor, Middletown Air Depot Control Area; Captain Ames S. Albro, Technical Supervisor, San Antonio Air Depot, and his assistant, Staff Sergeant Elliott Scott; and Staff Sergeant Ross P. Peck, assistant to Captain C.W. Sullivan, Technical Supervisor, Rockwell Air Depot Control Area, who was unable to attend.

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The annual inspection of the San Antonio Air Depot was made January 28-29 by Colonel Wm. S. Browning, of The Inspector General's Office, Washington, who had also made the previous annual inspection. Col. Browning expressed himself as greatly pleased with conditions at the Depot and as having noted much improvement thereat since his last inspection.

Under the heading of "Procurement of Military and Naval Aeronautical Materiel" the Federal Aviation Commission, in its report, made the following recommendations:

59. The paramount importance of quality in military aircraft should be recognized, and procurement policies should be fixed with primary reference to the securing at all times of the best material. Price should not be the primary consideration.

60. The general purpose in the relations of the government to the industry engaged in manufacturing Service aircraft should be to maintain units sufficiently stable and sufficiently well organized so that they would be available for expansion in the event of war. The strength and efficiency both in design and in production of the individual manufacturing units, rather than the number of independent units existing, should be regarded as the test of the nation's industrial preparedness.

61. Procurement policies should be planned to encourage the development of integrated manufacturing units carrying on their own research, development, design, and production work.

62. The practices of the government departments procuring aircraft should, as far as practicable, be the same. The Federal Director of Procurement should promulgate the necessary directions to this end.

63. Every effort should be made to organize procurement policy so that the supply of each general type of aircraft for replacement and for modernization should proceed at a substantially regular rate, and so that there may be a substantially regular flow of productive work in the plants of the aircraft industry.

64. The War and Navy Departments should so organize their technical forces as to obviate the simultaneous functioning of any personnel in the roles of competitor and of judge.

65. The development of new types of aircraft should continue to be provided for either by design competition or by experimental contracts for a specific article, but the rules now governing formal design competitions should be modified to allow administrative flexibility, and in particular to provide for the holding of competitions in which design development is allied with experimental construction of the article designed.

66. The Army and Navy should adopt a policy in holding design competitions by which details of the military characteristics of the aircraft and equipment desired to be created shall be disclosed only to fully responsible competitors, of American nationality, and qualified for the work contemplated in the opinion of the Secretary of War or of the Navy.

67. The announcements of design competitions should include the statement of the fixed price at which, subject to bonuses and penalties for performance, machines from the best designs will be purchased from the orig-

inators of the types.

68. Where the interests of the government clearly require that the construction of equipment from a particular design be thrown open to general competition or that orders for such construction be allocated to others than the originator of the design, royalties should be paid to the originator in reimbursement for the right to use his drawings, calculations, and production information.

69. The attempt to introduce a standard catch-all patent-license clause into all developmental contracts for aircraft and aeronautical material should be abandoned. Reproduction rights on patentable inventions should accrue to the government, in connection with a developmental contract for purchase of an article embodying the inventions, only in case the contractor is engaged to conduct a specific experimental development under governmental direction.

70. Existing provisions of law should be amended as necessary to allow direct suit (but not injunctive procedure) against a manufacturer alleged to be infringing a patent in connection with work done by him for the Federal government.

71. Explicit authority should be granted to the Secretary of War and to the Secretary of the Navy to negotiate contracts for quantity purchases of aircraft and other aeronautical material, subject to the requirement of a full report to Congress in each case where the authority is used.

72. In order that there may be no incentive for an uneconomic expansion of plants that could not be kept regularly running at any-where near their capacity, it should be procurement policy to avoid any concentration in any one plant of an abnormally large proportion of the total military and naval work then outstanding.

73. When purchases are to be made as the result of a process of competitive bidding, the Secretary of War or Secretary of the Navy should be authorized either to award a contract for the whole quantity sought to the bidder who can best perform the work, or to divide the work among two or more bidders if that be in the best interests of the government.

74. Where definite profit limitation is to be employed, as in the present Naval Construction act, it should not be applied to the individual contract, but, in the interest of equity, of simplicity of accounting, and of stimulation of technical development, should be extended over all the work done for the government Service over a considerable length of time.

75. Industrial mobilization plans in the field of aeronautics should be pressed by the joint effort of the Army and Navy.

In Recommendation No. 62, reference is made to the Federal Director of Procurement. This position was designated by Executive Order of June 10, 1933, and Admiral C.J. Peoples, who occupies this position, has already directed

the appointment of an interdepartmental committee on aircraft and is proceeding to remove at least the most unnecessary and unreasonable of the existing contradictions.

With reference to Recommendation No. 50 of the Federal Aviation Commission, which relates to the promotion situation in the Army, with special reference to the Air Corps, and which was quoted in the previous issue of the News Letter, the Commission's discussion on this recommendation is as follows:

"The promotion status of officers of the Air Corps is unsatisfactory and destructive of morale. It is recommended that steps be taken to improve this situation and that the War Department should propose early remedial action to the Congress as a part of a general revision of the Army's promotion scheme, upon the present effects of which the Baker Board has commented with appropriate feeling.

As a general policy, the Commission recommends that new legislation governing Air Corps personnel recognize the necessity for a continuous flow of promotion in spite of the disproportionately large numbers of officers in the lower ranks that the proper organization of any air force seems to require. Appropriate mechanism is needed for selection for promotion, transfer to nonflying duties, and retirement. The selection system should be such that outstanding officers of the Air Corps may be advanced to the higher ranks at an early age, while their flying ability is yet unimpaired. Otherwise, important and responsible air commands will be held by officers no longer physically fit, or by junior officers of inadequate authority.

A general revision of the Army's promotion system is needed to provide permanent and really adequate relief. Any such revision will be sufficiently slow in its workings to require a substantial amount of time to rectify present evils completely. As a temporary expedient, while a permanent program is being worked out and making itself felt, we urge that temporary promotion to rank commensurate with the duty currently performed should be made an accepted principle for general application in the Air Corps. The Morrow Board proposed in 1925 a limited use of such temporary promotion in connection with field commands, and provision was made in the Air Corps Act of 1926 for temporary promotion of not to exceed two grades in certain specific instances. The provision has never been put into effect because of opposition within the Air Corps, an opposition apparently based in part upon the fear that as a temporary expedient it would defeat the development of any permanently satisfactory plan, and in part upon an anticipation that injustice would be done by giving temporary promotions to officers holding certain field commands while officers of equal age, experience, ability, and permanent rank upon staff or headquarters duty would have no opportunity for corresponding special treatment. We propose that the first objection be overcome by refusing to admit that it exists, and by emphasizing our united conviction of the vital urgency of prompt action for permanent promotion revision in the interest

of the whole Army. We propose that the second objection should be met by removing the discrimination that creates it. The Baker Board made a special study of the working of the present law in individual cases and announces that under existing law there is now a "possibility of advancing temporarily about seventy-five percent of the Air Corps officers." We recommend that the authority to give temporary promotion by not to exceed two grades be extended to permit such promotion in any case where appropriate certification is made that the duty imposes responsibilities and demands qualities normally corresponding to a higher rank than the permanent rank of any officer currently available for the assignment. If it is true that squadrons now generally commanded by captains and first lieutenants should carry the temporary rank of major for their commanding officers, it is no less true that Air Corps officers serving with the General Staff or upon important duty with the Materiel Division at Wright Field or in the office of the Chief of Air Corps or in other administrative details are in many cases performing duty that not only justifies but fairly demands materially higher rank than the permanent one to which the present incumbents have attained.

The mechanism of making these temporary promotions should of course be suitably safeguarded, and the temporary rank should be given either upon the specific direction of the Secretary of War or upon that of a board of high-ranking officers periodically convened to deal with the matter as selection boards are convened in the Navy Department. Whichever mechanism may be adopted, however, there should be no further delay in applying the principle that was recommended by the Morrow Board in 1925 and again by the Baker Board in 1934, and that should now be put into effect upon a large scale and under a broadened legislative authority to meet a situation so extreme that it partakes of the aspect of an emergency.

A particular case of need for the use of temporary promotion develops in connection with the appointment of a commanding general for the new General Headquarters Air Force. Though the present law permits promotion by one or two grades on account of field command, legal authorities have apparently questioned the propriety of extending that authority to the creation of general officers beyond those individually authorized by law. It should be perfectly clear that the commanding officer of the General Headquarters Air Force should be chosen from among all the colonels and lieutenant-colonels upon the Air Corps list, that there should be freedom to select the one of that group best qualified to exercise the supreme field command of the Air Corps, and that the appointment should carry with it temporary rank as a Major General. To clear up the legal status, and to make a temporary elevation by as much as three grades possible where a lieutenant colonel has been chosen for the command, specific legislation is needed."

The Federal Aviation Commission, in expla-

nation of Recommendation No. 51 - that authority to select a Chief of Air Corps from among all the officers of long service in that arm, which has now expired, should be renewed, states:

"The Air Corps Act of 1926 provided for what was then felt to be an emergency situation due to the scarcity of high-ranking officers in the Air Corps by allowing the selection of a Chief of Corps, with the temporary rank of Major General, from among all the officers of the Corps with fifteen years or more of service. The rule for other arms of the Service is that the Chief must be a colonel or a general of the line at the time of his appointment.

The authority granted by the 1926 Act expired on July 1, 1934, and when the necessity of selecting the new Chief of Corps arises the Secretary of War will be limited to a choice among the colonels, of whom there are now only nine and three of whom have had practically all of their Service experience with lighter-than-air craft, unless the expired authorization be renewed. We recommend that it should be done by simple amendment of the Act of 1926 to extend the broadened authority for choosing the Chief of Corps. We hope that in the near future some general action will be taken to improve the Army's promotion situation and that a larger number of Air Corps officers of outstanding ability and varied Service experience will have attained to the highest ranks as a result.

We have suggested in the previous recommendation that in addition to extending the authority for the appointment of the Chief of Air Corps it should be specifically broadened to allow a similar freedom in the appointment of the Commanding General of the General Headquarters Air Force."

Touching on the modifications in the Air Force organization now being put into effect, the Commission stated that the initial organization of a G.H.Q. Air Force must be considered experimental, and until this solution has had adequate trial comment thereon is withheld. It is added, however, that there is ample reason to believe that aircraft have now passed far beyond their former position as useful auxiliaries and must in the future be considered and utilized as an important means of exerting directly the will of the Commander in Chief. An adequate striking force for use against objectives both near and remote is a necessity for a modern army, and the projected G.H.Q. Air Force must be judged with reference to its effectiveness in this respect.

"We have no doubt," the Commission states, "that there will be a progressively greater measure of independent action of aircraft in military operation as the capacities of aircraft increase. We interpret the present proposals as a step towards provision for such increased independence, and as a test of its effectiveness under the strategical conditions dictated for the United States by geography and national policy. Further steps may in due course become necessary. If the degree of independence provided under the present plan is so used as to lead to the development of an effective strategy of air force employment (and every opportunity should be provided to that end, both in the Army and in the Navy), the de-

sirability of further organizational changes may in due course become apparent.

The present Naval organization appears to be sufficiently flexible to develop its air forces, both ship-based and shore-based, for as much independence of action against naval objectives as may be feasible. Bombing and torpedo attacks from aircraft carriers have already become a common feature of naval maneuvers. We assume that they will be extended as rapidly as the capacities of existing equipment and the accumulation of experience permit.

In the strategy of independent air action the long-range flying boat, shore-based, plays an important part. That type of aircraft also has important functions in connection with Fleet operations. They must not be neglected. We recommend that national defense policy continue to provide for naval flying-boat operations on a large scale, especially in those areas where sheltered water for flying boat operations is much easier to find, and much more widely diffused through the zone of strategic interest, than are suitable fields for landplanes."

Referring to the numerical strength in airplanes and personnel of the Army Air Corps, the Commission, while deploring that the military air forces of the world, almost without exception, are in process of expansion or of more or less complete reequipment and modernization to secure increased power, states that this must be reckoned with as a fact, and that the air program made in 1926 is no longer adequate either to the present appreciation of the military importance of aircraft or to the maintenance of the standing of the United States in air power; that while we are laggard neither in numbers of aircraft nor in their general quality at the present time, we might easily become so if we fail to accept the lessons of the current policies of other Powers.

Inviting attention to the program of the Navy calling for 1910 airplanes to be in service by 1941 in order to keep the supply of aircraft abreast of the needs of the Naval organization, as modified by the construction of new vessels for the Fleet and otherwise, and to the plans of the War Department for a program calling for an expansion to 2320 planes by 1938, the Commission states that nothing short of a radical change in the international situation should be allowed to interfere with the completion of these programs or with the making of the necessary appropriations to carry them out. Long before their completion they may call for further modification, but for the present they offer a working basis which should be accepted.

The Commission, from its own investigations, urgently recommends that, whatever numerical strength be authorized by the Congress, it be based not only on the estimated numerical strength of foreign powers but also, and more particularly, on the performance and military qualities of foreign aircraft and the means available to them to exert their power upon us. The Commission is of the opinion that progress has been, and will continue to be, more rapid in aeronautical engineering than

in any other branch of science applied to warfare, and consequently that numerical strength is of less importance to national security than leadership in quality of material and personnel.

"In this connection," the Commission states, "it should be our policy not only to lead in the development of superior aircraft, navigational equipment, and armament, but also by means of comprehensive exercises and maneuvers in time of peace to evolve tactical doctrines appropriate to such equipment and to train a personnel of highest efficiency. It is considered important that such exercises be conducted under various climatic and geographical situations and designed to simulate as closely as possible actual war-time conditions.

The natural and common disposition has been to concentrate a substantial proportion of the aerial operations of the Army and Navy in regions where climatic and geographical factors and simplicity of supply problems permitted continuous operation at high intensity. No such selective principle operates upon the determination of a theatre of war, and the difficulties of war should be faced in peace to the limit of practicability. In this connection we wish to express our special commendation of the experimental operations of the Army and Navy in Alaska, and to endorse the recommendations of the Baker Board that military air operations in that territory should be put on a year-around basis on a substantial scale as a means of training personnel to operate under Arctic conditions and of developing specialized equipment necessary for such operation. In the same connection, we single out for commendation also the Navy's plan to send an aircraft carrier upon a cruise in northern waters in midwinter to acquire experience in carrier service at low temperatures and in the face of sleet and snow. We wish also to approve the recommendations of the Baker Board upon the development of the instrument-flying technique. Officers of the Army Air Corps have pioneered in extraordinary developments in instrument flying, and especially in the development of blind-landing systems and technique. We urge that the Services carry on diligently with research in that field, and at the same time proceed to make full and rapid practical application of what has already been learned."

In the matter of the inter-relationship of the National Defense Services, the Commission, while appreciating the efforts now being made for coordination, feels that the present degree of mutual understanding between the Army and Navy is less than might be desired; that the machinery for settling differences in matters of detail lacks something in effectiveness and that the arrangements for keeping commanders in the field notified of their respective responsibilities in joint operations with neighboring units of the sister Service are strikingly inadequate. There are, of course, a variety of devices which have been suggested from time to time for effecting improvement in these matters. Final authority reposes in the President, but it is not to be

expected that the Commander in Chief can take personal charge of every point that may arise. In the British government adjustments can be made through a Committee of Imperial Defense, upon which both military and civilian members sit. It has often been persuasively argued that a Department of National Defense should be created, with a Secretary of National Defense and the personnel immediately attached to his office as the inter-Service coordinating factor. Another possibility would be the designation by the President of a representative of his office, responsible only to himself, who would sit as a neutral member upon the various joint boards on which the two armed Services are now equally represented.

Asserting that while this matter lay beyond its scope, the Commission considered it so serious that it recommends that the whole problem of military organization and of inter-Service relationships be made the subject of extended examination by some appropriate agency in the near future. The Commission records its belief that the present difficulties are not the result of any peculiar defects in the present division of functions between the Army and the Navy. In countries where there are three services, with an independent air force providing the third, the opportunities for conflict of opinion about who is to do what and how seem to be no less marked than under our own two-Service arrangement. The need for definite machinery to compose such conflicts, and to effect in the last extremity an intervention of neutral parties, is likely to exist under any system.

In elaboration of the recommendation that a number of officer pilots of the Regular Army and Navy should be assigned annually to the other service and given duty with active air units, the Commission, in view of the complications that appear likely to exist in joint operations of any two distinct services under the best of conditions, whether both be in the air or one in the air and the other upon the surface, deems it particularly important to insure close understanding of each other's problems by the officers of the Army and Navy air arms. Though a general rotation of duty between the Army and Navy is manifestly impracticable, the Commission believes it quite reasonable to propose that a considerable number of officers of each Service be given the opportunity of doing tours of duty with the other and of learning its operations at first hand. Such exchange of personnel ought to extend not only to tactical units, but also to the flying schools, to the tactical and other Service schools and to the repair depots and other technical installations. The constant interchange of personnel between the Naval school at Pensacola and the Air Corps Training Center at San Antonio is particularly recommended, and a detail of naval officers in increased numbers to the Air Corps Tactical School and of at least two or three Air Corps officers (instead of the single individual that is now the rule) to the

Naval War College. While recognizing the present shortages of officers in both Services, the value of the experience gained through such exchanges and of the improved mutual understanding that may result appear so great as to justify an assignment of a small percentage of the regular officer personnel to exchange duty.

Recommending that the experimental and developmental work of the Army and Navy should be conducted on an increased scale, the Commission, while recognizing the importance of an adequate number of aircraft and trained personnel in an air force, believes it quite as important to insure in peace time that the equipment is of the highest quality that the existing state of knowledge permits. A great deal of criticism had been heaped on the Army and Navy in the early years of the past decade for excessive expenditures on experimental work and not enough on quantity procurement of aircraft. Assuming that this criticism may then have been valid, it now appears that the Services are in danger of switching to the opposite extreme, that is, instead of spending too much on experiment and development they seem likely to spend too little, for it is upon current experimental appropriations and upon the wisdom with which they are expended that the quality of our aircraft of a few years hence will depend.

The past year was marked by incessant attacks upon the quality of American military aircraft, it being alleged that they are in every essential respect hopelessly inferior to corresponding aircraft of European origin. Asserting that some of the misleading statements made almost advertise upon their face their own intemperateness and exaggeration, and that other statements are undoubtedly true, though the implications drawn seem excessive, the Commission points to this as an interesting commentary on the state of the public mind that these charges seem to be essentially similar to those being made at the same time in the very countries which have been held up to the United States as examples to imitate. The British press has rung with assertions of the remarkable qualities of American aircraft and of the inability of the available British types even to keep pace with American commercial machines, while a section of the press in France has debated furiously the rumored inferiority of French military aircraft to those of most of the rest of the world.

While avoiding statistical researches on the aircraft of various nations, the Commission has nevertheless made enough comparisons in particular lines of development to reach certain general conclusions, and it seems clear that American aircraft design and the aerodynamic qualities of American airplanes are at least the equal of any others in the world. It is in the variety of power-plant types and in their special adaptation to certain military purposes that we are comparatively weak. The net result is that American military planes powered with American engines seem on the whole, surveying the entire range of types required, to be as good as any that exist elsewhere. In some respects and in some particular types they appear quite beyond challenge,

while in others they are, seemingly because of lack of intensive application to the special problems that they present, inferior. No reason is seen, however, why an intensive development in the particular phases where we have been backward should not be superposed on the remarkable development that has already taken place in the United States in improving aerodynamic and structural qualities and in increasing the practical utility of medium-powered engines.

That American engines of from 200 to 750 horsepower or thereabouts are at least the equal of any others in the world in reliability, economy of first cost and of operation, and general serviceability seems to be beyond question. If evidence of that fact were needed it is perhaps to be found in the use of engines of American design (and in many cases built in American factories) on 14 percent of all the aircraft in service on European air lines in the spring of 1934. That degree of inroad on the European market was, of course, made in the face of a strong nationalistic tendency in most countries to insist upon the exclusive use of home products on air lines benefiting by governmental support. It is a curious fact that our special weakness is at the two extremes of the power range. Relatively little work has been done on high performance engines of under 160 h.p., a field in which the British industry has made peculiarly its own. Engines in that power class are, of course, of little military interest. They meet the requirements of the private pilot. The upper end of the power scale, on the other hand, is primarily a military responsibility. There is a real need for high performance engines of 1,000 horsepower or more. A considerable amount of experimental work in that zone has been done in the United States, but none of it has reached the point of production. To put into production a first class Service engine of from 1,200 to 1,500 h.p. and weighing approximately one pound per horsepower is likely to require several years at best. Such development should be given the highest possible priority.

Recommending a special watch over the liquid cooled engine, the Commission states that the development of air-cooled power plants by the American industry since 1920 has been so remarkable that there has been danger that the liquid-cooled types would fall completely by the wayside. Though air-cooling seems the ideal arrangement for most use, the liquid-cooled types still appear to have marked advantage for certain military functions. Experimental work on that class of engine ought not to be allowed to lapse.

Touching on the introduction of supercharging in which the United States has also pioneered, the Commission states that while our manufacturers and Service personnel have never lost sight of the virtues of this development, there appears to have been an excessive emphasis on the building of the whole equipment into the normal structure of the engine and avoiding any additional mechanism, the resultant tendency being to limit effective supercharging of service engines to compara-

tively modest altitudes. A diligent application of experimental effort is recommended to the end that American military engines may have available a wider range of supercharger capacity than is now common.

With respect to the diesel type of engine which also found its first successful aeronautical application in America, the Commission feels that the military and naval services have shown somewhat less interest than would have been appropriate. This type of engine, exploding its charge by the heat of its own compression rather than by electrical means, seems particularly desirable where long range is sought, due to its fuel economy, and it seems reasonable to hope that diesels can be developed which will substantially increase the range available with gasoline available in the same aircraft. Most European countries are taking very active interest in the aircraft diesel for military service, and recommendation is made that the United States join their number.

Pointing to the increased efficiency of present day aircraft engines, the change from wooden to metal structure in aircraft with resultant increased cost of production, the development of a multitude of accessories no less important in their effect on efficiency than the airplane and engine themselves, the Commission, after considering the cost of keeping up the necessary government testing facilities and laboratories and of those purely military developments which the Army and Navy carry on in their own plants, is left with the conviction that to keep abreast of progress the annual appropriation for experiment and development in the Army and Navy can scarcely be less than twice the 1934 figure, which was \$5,000,000.

To be continued in next issue.

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WIND DIRECTION INDICATOR FOR NIGHT LIGHTING SYSTEM AT OLMSTED FIELD

The remote control system for the operation of the landing flood lights at Olmsted Field, Middletown, Pa., incorporates a feature whereby the operator of the system may cause the proper bank of floodlights to be put into operation, at the same time taking into account the wind direction. This is a very valuable feature for this particular installation, inasmuch as a set of control switches is located in the telephone exchange, some distance from the field, so that the system can be put in operation as required by the telephone operator, who, without some sort of wind indicator, would have no means of knowing which bank of lights to turn on.

The device for indicating which bank of flood lights should be used consists of an ordinary windvane mounted above the building in which the remote control switches are located, and in the construction of which is incorporated a contact bearer with one contact segment for each bank of floodlights on the field. The vane proper operates a small brush which makes electrical contact with one of these contact segments at a time, so that the particular segment with which contact is being made at any particular time depends on the wind direction. The small brush is of such width that the in-

stant it loses contact with one segment, it gains contact with the adjacent segment. Each segment is connected through a 12-volt transformer to a small signal light over the appropriate floodlight control switch, and the contact bearer oriented with respect to the cardinal points, so that the segment making contact when the wind is blowing in a given direction causes a bulb to be illuminated over the switch controlling the proper floodlight bank to be used for the given wind direction. Thus, the operator does not have to take into consideration the wind direction at all when he puts the night lighting system into operation, but simply turns on the control switch over which the signal light is burning.

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THE NEXT CLASS AT THE ARMY INDUSTRIAL COLLEGE.

According to an announcement recently made by the War Department, a total of 43 officers of the Regular Army have been selected for detail as students at the Army Industrial College, Washington, D.C., for the 1935-1936 course. These officers will report to the Director of the Army Industrial College between August 15 and 21, 1935.

Included among these 43 officers are eight from the Army Air Corps, nine from the Q.M. Corps; two, Medical Corps; two, Finance Dept.; four, Corps of Engineers; nine, Ordnance Dept.; two Signal Corps; one, Chemical Warfare Service; one, Cavalry; one, Coast Artillery Corps; one, Field Artillery; two, Infantry, and one, Adjutant General's Department.

The Air Corps officers selected to attend the Army Industrial College are as follows: Lieut.-Col. Henry B. Clagett, Kelly Field, Texas; Majors Hubert V. Hopkins, Fort Leavenworth, Kans.; Clinton W. Howard, Office of the Chief of the Air Corps; Capts. Merrick G. Estabrook, Jr. and Fardoe Martin from Office of the Chief of the Air Corps; Muir S. Fairchild and Arthur W. Vanaman from Maxwell Field, Ala.; and 1st Lieut. Park Holland from Wright Field, Dayton, O.

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STATUS OF FLYING TRAINING AT RANDOLPH FIELD

At this writing the 62 Flying Cadets of the upper class at the Primary Flying School at Randolph Field, Texas, are putting the finishing touches on their final stages of training. They are performing several hours per day of both day and night aviation, and thus far, according to the News Letter Correspondent, none have been so lost that they couldn't get back home. The 37 lower classmen are climaxing their training on the Primary Stage by performing all the acrobatics they can in their big PT-3's.

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The appointment of Lt. Col. A. W. Robins as Assistant to the Chief of the Air Corps with rank of Brig. General, for 4 years from Jan. 1, 1935, and his assignment as Chief, Materiel Division, Dayton, O., was recently announced.

V-6725, A.C.

NEW ZEALAND CITIZENS EXPRESS GRATITUDE TO U.S.

Extremely grateful for the spontaneous response of the American Navy, Army and Air Force authorities at Honolulu in their comprehensive search for the late Flight-Lieutenant C.T.F. Ulm and his crew, Messrs. George Littlejohn and L.J. Skilling, the Airport Board, the Aero Club and the Chamber of Commerce of the City of New Plymouth, New Zealand, joined in formulating a resolution, sent to the Hon. George A. Bucklin, Consul General for the United States in New Zealand, in which it was stated that no greater effort could have been made to find the missing airmen; that the manner in which the search was conducted was most heroic and inspiring; that the immediate action taken to assist one of the British Empire's foremost pioneers in aviation will long remain in the minds of the British people and particularly the citizens of New Plymouth, to whom Flight-Lieutenant Ulm was a valued friend, as a man and a great advocate of aviation.

It will be recalled that Ulm and his two companions, in their monoplane "Star of Australia," took off from Oakland, Calif. at 6:41 p.m., E.S.T., December 3rd, on a 2408-mile flight to Honolulu, the first leg of their long journey to Australia. For 18 hours the silver and orange-colored monoplane had reared on its way over the ocean. Flying through stormy weather at an altitude of 12,000 feet, Lieut. Ulm maneuvered for two hours, attempting to pick up the radio-direction beacon before sending out his first S.O.S. It was at 7:30 a.m. (Hawaiian time), 1:00 p.m., E.S.T., December 4th, that the first warning came from the voyagers that they were facing trouble, the radio messages stating that very little gasoline was left, that the airmen were off their course and did not know their position. Distress messages came from the ill-fated airplane at frequent intervals, the last one at 9:30 a.m. announcing that the airplane was afloat. A far-flung naval search was carried on by 18 submarines, 3 mine layers and two Coast Guard vessels, supplemented later by some 35 airplanes from the Army and the Navy. All efforts to locate the three intrepid flyers proved in vain.

The Mayor of New Plymouth, N.Z., in a letter to the American Consul-General, quoted a resolution passed by the Borough Council on December 17th, in which there is conveyed the sincere admiration of the people of New Plymouth at the wonderful organization, the humanity and sympathy displayed by the United States Army and Navy authorities at Honolulu in their extensive, heroic and inspired search in connection with the disaster to Flight-Lieutenant Ulm and his companions. It was stated that New Zealand people will have great difficulty in placing into words their admiration at the wonderful response of the American Army and Navy authorities at Honolulu to the distress signals sent out by the imperiled airmen; that no greater effort could have been made to find them; that in common with the rest of the Dominion the people of New Plymouth appreciate Honolulu's stirring effort and will not forget

this great proof of American humanity and sympathy, and that it was only regretted that such a great achievement was not crowned with success.

New Plymouth, a city of 16,500 population, is 228 miles northwest of Wellington, New Zealand. This city takes an exceptional interest in everything that pertains to aviation. The trans-Tasman sea flights usually land at that place.

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INSTRUMENT FLYING AT BARKSDALE FIELD

An added impetus was recently given to instrument flying at Barksdale Field, Shreveport, La., by the installation of hoods and the latest type instruments on two BT-2B type airplanes assigned to that field. Heretofore instrument flying had been conducted in PT-3 airplanes only. The BT-2B airplanes being equipped with radio and inter-phones have permitted training in radio beam flying under the hood, a phase of training which has recently proved highly important in the Air Corps.

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AIR TACTICS DEMONSTRATED AT FORT LEAVENWORTH

The 20th Pursuit Group, Barksdale Field, La., led by Major Millard F. Harmon, Jr., Commanding Officer, made a controlled flight to Fort Leavenworth, Kansas, on January 3rd, for the purpose of training in unit aviation and demonstrating Pursuit tactics to the Command and General Staff School.

The flights from Barksdale Field to Fort Leavenworth and return were made in accordance with a movement table as outlined by the Operations Officer. Each squadron was assigned a different time of take-off and route, and assembly points were designated within 30 miles of objectives.

Upon arrival at Fort Leavenworth, a flight of two-seater airplanes, furnished by that station, was sent up to represent a hostile Bombardment group. The Pursuit group intercepted and "destroyed" the hostile Bombardment by means of machine gun fire from the flanks and rear, and successive bombing attacks from above.

The pilots who made the flight were high in their praise of the courtesies extended by the personnel of Fort Leavenworth.

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In the Jan. 15th News Letter it was stated that two maps are being planned for use of Army pilots, Map No. 38A combining 5 present Air Corps strip maps, viz: No. 17, Yuma to Los Angeles; No. 31, Nogales-Tucson-Phoenix; No. 32, San Diego - Phoenix; No. 38, San Diego to Tucson; No. 39, Los Angeles - San Diego; and Map No. 59, a new compilation (Washington to Charleston, S.C. and Savannah, Ga., via Richmond, Va. and Ft. Bragg, N.C.) to serve the route to Miami, Fla., now requiring the use of 4 maps from Washington, D.C. to Savannah. Map No. 59 will not be ready for distribution for about six months, as the preparation thereof began only recently.

RANDOLPH FIELD'S AMATEUR RADIO STATION W5AUC

After a silence of two years, Amateur Radio Station W5AUC is back on the air at Randolph Field, Texas. This modern radio station is now located in the Radio Laboratory of the Academic Building, and is owned and operated by Private Charles Ken Smith, of the 52nd School Squadron, who is one of the Instructors in Code at the Ground School of the Air Corps Primary Flying School, and operates the station in his spare time as a hobby in carrying on experiments in the phases of short wave communication developments.

The transmitter of W5AUC for sending code signals is one of the most powerful and finest built outfits in the southwest. It is crystal-controlled, and transmits on a frequency of 7036 kilocycles. It has a power input range from 100 to 1,000 watts, the maximum allowed for amateur radio stations by the Federal Communications Commission. W5AUC has carried on two-way communication with 28 foreign countries, comprising six continents, and the maximum distance attained was 12,600 miles, or half way around the world. W5AUC is a member of the W.A.C. Club, which comprises radio amateurs of the world who have carried two-way communication with the six continents - North America, South America, Europe, Asia, Africa and Oceania.

The station is also a member of the American Radio Relay League, whose members assist in relaying messages all over the United States.

W5AUC has just been appointed official relay station for this league, and is handling personal messages from the personnel of Randolph Field to any address in the United States. Having joined the Army Amateur Net, W5AUC now stands air drills every Monday night, at 8:00 p.m., and after drill exchanges radiograms with the other members of the net.

To insure positive delivery and speedy reply, daily traffic schedules are maintained by W5AUC, and radio stations located all over the states. This arrangement of schedules requires considerable time, and at present there are only three daily schedules, but more tests are being made and schedules added daily. W5AUC has also formed an All-Army Air Corps Net to facilitate the handling of messages between Air Corps fields, direct, and for emergency weather information.

The receiving equipment of W5AUC consists of an all-wave 12-tube superheterodyne, which has been adapted for the reception of code signals. The antenna system utilized is of a type which reduces local interference and automobile ignition radiation to a minimum.

To date, W5AUC has about three hundred radio call cards from all over the world, and more are coming in every day. These cards verify the fact that a two-way communication was established between Station W5AUC and the station which has forwarded the card.

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ACTIVITIES OF THE 33RD PURSUIT SQUADRON

The 33rd Pursuit Squadron started the calendar year of 1935 with a larger maneuver than has been performed by that squadron since its trip to California in 1933. Besides 12 officers and 46 enlisted men of this organization, approximately 10 officers and 10 enlisted men of other organizations of the 8th Pursuit Group, Langley Field, Va., were attached to the detachment of the maneuver. On January 4th, one officer and 27 enlisted men departed from Langley Field in reconnaissance cars and trucks loaded with equipment for a month's stay in the field. While no official report has been received, correspondence from the men who went in these cars leads to the belief that they have not had the pleasure trip some of them anticipated. Cold and generally unfavorable weather has prevailed since their departure, even throughout the Gulf States through which they have traveled. The planes which were to carry the remaining officers and enlisted men going on the maneuver to Miami, Fla., were detained at Langley Field for three days due to the dense fog which held the entire Atlantic seaboard in inactivity for that length of time. They did leave, however, on January 10th, and it is presumed they arrived at Miami the following day to join the truck train.

After participating in the Air Races at Miami, the entire detachment has been traveling by truck and plane through various of the Gulf States, camping at such cities as Mobile,

New Orleans, and Atlanta. To date there have been but three casualties reported, one having been sustained in the football game between Langley Field and the team from the Naval Air Station at Pensacola, which was played at Miami (and which the News Letter Correspondent regrets to say was won by the Navy), and the two others being ailments mostly caused by the cold and otherwise severe weather. Hope is expressed that the detachment will return to Langley Field on the scheduled date without further mishap.

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PHOTOGRAPHIC ACTIVITIES OF 2nd PHOTO SECTION

A detachment of three men accompanied the Second Bombardment Wing, Langley Field, on the Fourth Corps Area Maneuvers for the purpose of photographing landing fields, etc., and developing gun camera film. Most of the remaining personnel are engaged on a five-lens mapping project for the United States Coast and Geodetic Survey. This project includes about 2500 square miles of the coastal area and the inland waterways from Norfolk, Va., to the Neuse River in North Carolina. It is being photographed from 5,000 feet as contrasted with usual mapping altitudes of from 10,000 to 15,000 feet, and while excellent detail is being obtained there is also an extensive increase in the number of prints and the amount of laboratory work required.

TRAINING AT RANDOLPH FIELD
By the News Letter Correspondent

Those who have been away from the Training Center for some years would marvel at the changes which have taken place since the schools at Brooks and March Fields were concentrated at Randolph Field.

In the old days the basic training was more or less a duplication of the work done on the Primary Stage in a larger ship. Today, however, the basic training is more diversified and progressive. The instruction is arranged so that the student's interest is not permitted to lag through repetition. After the most elementary phase, which includes explanation of controls and instruments, use of brakes and throttle, taxiing, take-offs, landings, turns, climbs, glides, stalls, spins, spirals, chandelles, eights, cross-wind take-offs, forced landings and slips, the student's week includes: accuracy, air work, forced landings, formation, dual instruction, strange field landings, avigation, cross-country trips, night flying and instrument flying, and he does not know what is coming next.

Avigation and night flying have been discontinued on the Primary Stage and are all done on the Basic Stage. In the last few years there have been added to the Basic Stage more instrument flying, four phases of strange field landings, and night flying has been increased from one hour of local flying in the old days to three phases of local flying, including flood light landing, wing tip landings and flare landings. In addition to this, the student secures 12 hours of night avigation.

Although the War Department has authorized, as a part of the curricula of this School, radio missions, including radio control and radio beacon flying, this phase of training has not been given in the past, due to the fact that this School has not been supplied with the necessary radio equipment. This training is very essential in preparing a man to take his place in a tactical organization, and we are looking forward to the time when the radio equipment will be supplied.

The training of permanent personnel is also handicapped by the lack of this equipment. The modern facilities installed at Randolph Field have been a great aid in improving the instruction at this School. Each stage is subdivided into flights, and each flight has its own billowac, where ships, lockers for the students, parachutes and flight office are concentrated, thus obviating such practice as going to one end of the flying line to secure the parachute when the ship is being flown from the other end. Everything is more convenient for

the student.

The glorified position of check pilot has practically gone the way of the "Dodo," and the student who is making satisfactory progress does not have this old mental hazard to overcome. The instructor and the flight commander now pass judgment upon the progress of the student. Those students who make unsatisfactory progress are never brought before the Faculty Board unless the instructor, flight, and stage commander, and the officer in charge of flying so recommend. Loose leaf logs are submitted daily on each student, and once submitted they are never seen again by the instructor, thus obviating his opinion of the student's work today being influenced by the work that the student did yesterday. When a student is transferred from one instructor to another, the new instructor does not know what progress the student made under the old instructor. This system was adopted in the hope that it would force the instructor to grade the student only on that day's work.

We believe we are doing a good job here at Randolph Field and invite criticism, and those officers who have not been at Randolph Field recently should try to get here in order to see what we are doing.

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36TH PURSUIT SQDN. IN FIELD EXERCISES

Since January 4th, 11 officers and 26 enlisted men of the 36th Pursuit Squadron, stationed at Langley Field, Va., have been participating in field exercises in the Fourth Corps Area. Motor vehicles were used in conveying the enlisted men and supplies to the Wing Concentration Camp at the Pan American Airport at Miami, Fla.

The itinerary included the following cities: Langley Field, Va. to Miami, Tampa and Tallahassee, Fla.; Mobile, Ala.; New Orleans, La.; Montgomery, Ala.; Fort Benning, Ga.; Atlanta, Ga., to Langley Field.

The purpose of the field exercises was to qualify units in:

- (a) Occupation and evacuation of strange airbases day and night.
- (b) Employment, Transportation and bivouacking of Flying Echelons.
- (c) Employment, Transportation and use of minimum mobile Field Equipment Kits, and their replenishment from distant supply points.
- (d) Administration, supply and logistics of dispersed units.
- (e) Employment of mobile field radio communications.

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PROMOTION OF NONCOMMISSIONED OFFICERS

The previous issue of the News Letter contained the names of 97 Technical Sergeants and 17 First Sergeants, listed in the order of their standing on January 1, 1935, on the eligible list for promotion to the grade of Master Sergeant, also the names of 150 Staff Sergeants on the eligible list for promotion to the grade of Technical Sergeant.

Due to the lack of space it was not possible to publish the complete list of Staff Sergeants on the eligible list, and a list of the remaining 297 names is given below, as follows:

- | | | |
|----------------------------|------------------------------|----------------------------|
| 151. Gregg, Emmett C. | 213. Davis, Golden R. | 275. Murdoch, Edward |
| 152. Meeks, John D. | 214. Caraway, Rayford A. | 276. Anderson, George |
| 153. Harth, George J. | 215. McQuillan, William F. | 277. Hollon, Orval L. |
| 154. Brock, Norris | 216. Killian, Wiley | 278. White, Andrew |
| 155. Visbal, Germain A. | 217. Wiley, William | 279. Harwell, Walter L. |
| 156. Cculla, Jack | 218. Scott, Orval W. | 280. Kanig, Albert V. |
| 157. Novak, Louis W. | 219. Fowler, Byron L. | 281. Perkins, William E. |
| 158. Martin, Paul H. | 220. Benson, Harry A. | 282. Johnson, George D. |
| 159. Gutierrez, Arnaldo | 221. Galloway, Roy F. | 283. Morris, John E. |
| 160. Dooney, John J. | 222. Blanchard, Leslie D. | 284. Frost, Samuel K. |
| 161. Carr, James W. | 223. Bullock, Thomas | 285. Ritter, Paul A. |
| 162. Hodges, Herbert D. | 224. McGinnis, Edward V. | 286. Tuite, Edward J. |
| 163. DeFord, Lyman | 225. Braun, Joseph F. | 287. Edwards, Samuel T. |
| 164. Warren, Henry M. | 226. Carnes, Frank D. | 288. Dixon, Frank E. |
| 165. Delaney, Samuel H. | 227. Ashley, Floy L. | 289. Messer, Floyd |
| 166. Chestnutt, Herran L. | 228. Rosser, James C. | 290. Hughes, Ted C. |
| 167. Farnes, Max | 229. Chipperfield, Merton L. | 291. Greene, Charles C. |
| 168. Morrison, Jay P. | 230. Williams, Lee V. | 292. Jordan, Martin M. |
| 169. Armbruster, Otto | 231. Harvey, Curtis A. | 293. Groves, Earl C. |
| 170. Tetu, Dona E. | 232. Lawson, Lane L. | 294. Rogers, John O. |
| 171. Beckham, Reuben S. | 233. Golden, Stephen B. | 295. Grcm, Eugene |
| 172. Bishop, Chalmers N. | 234. Beck, Henry J. | 296. Stipe, John H. |
| 173. Abromitis, Jacob | 235. Booth, William H. | 297. Malczewski, John |
| 174. Bryan, Hugh | 236. Frick, Russell H. | 298. Littlejohn, Lyman L. |
| 175. Weltz, William M. | 237. Cichon, Paul | 299. Maxwell, Jesse M. |
| 176. Flores, Alberto | 238. Shown, Winfred G. | 300. Andrews, Arthur |
| 177. Williamson, Henry | 239. Lutes, Arns D. | 301. Marley, James L. |
| 178. Hall, Bolton | 240. Willard, Fred J. | 302. Kingsley, Wallace W. |
| 179. Hunsberger, Horace K. | 241. Bullivant, Norman C. | 303. Kirkwood, Cecil G. |
| 180. Kolb, Peter, Jr. | 242. Utterback, Harlan R. | 304. Bezek, John S. |
| 181. Collins, Jacob | 243. Griffis, Isaac | 305. Segalbaum, Charles S. |
| 182. Mobley, Emmett A. | 244. Wright, William F. | 306. House, Joseph M. |
| 183. Martin, Troy V. | 245. Boucher, Albert C. | 307. Brenckman, Emil |
| 184. Townsend, Joe H. | 246. Kaufman, Eugene H. | 308. Wallace, Stephen L. |
| 185. Laza, Joseph C. | 247. Stewart, James E. | 309. Carmack, Thomas B. |
| 186. Podraza, Walter H. | 248. Pitre, Harry J. | 310. Hrivnak, John C. |
| 187. Pond, Everett L. | 249. Wooten, Mack F. | 311. Stevenson, Albert E. |
| 188. Nielsen, Jean | 250. Hammer, Stewart W. | 312. Nied, Bernard J. |
| 189. Lynch, Marion M. | 251. Euton, James A. | 313. Watson, Henry F. |
| 190. Powers, Barron C. | 252. Sayers, Samuel | 314. Hedley, Arthur R. |
| 191. Prince, Kerman | 253. Eidman, Arthur G. | 315. Adams, Gerald |
| 192. Kelly, Bernard F. | 254. Malone, Roderick N. | 316. Hogan, Edward J. |
| 193. Anning, Richard S. | 255. Young, Earl S. | 317. Montgomery, Joseph |
| 194. Browning, Earl H. | 256. Teck, Ross P. | 318. Patterson, Homer L. |
| 195. Shelley, Verl A. | 257. Featherer, Joseph | 319. Sherman, Sidney |
| 196. Hollis, Claud D. | 258. Bardell, North B. | 320. Lage, Wilbur |
| 197. Mulkey, Lloyd | 259. King, Oliver E. | 321. Kingsley, William S. |
| 198. Winter, David | 260. Dodson, Edward S. | 322. Lucas, Cecil |
| 199. Koblitz, Monroe | 261. Blakesley, Wayne R. | 323. Griffin, Ralph G. |
| 200. Knowles, James R. | 262. Mason, Robert E. | 324. Rogozinski Wads.orth |
| 201. Summers, Robert F. | 263. Sanchez, John L. | 325. Tyler, Fred O. |
| 202. Weeks, Edward | 264. Hucks, Jesse J. | 326. Salter, Joseph E. |
| 203. Garcia, Adelmo N. | 265. Waters, Horace G. | 327. Bailey, Archie |
| 204. Burt, Albert B. | 266. Smith, Percy G. | 328. Gershon Samuel |
| 205. Farrell, Herbert W. | 267. Kevsor, Walter K. | 329. Boston, George R. |
| 206. Browning, Wilbur G. | 268. O'Toole, Fred | 330. Rahn, Sidney M. |
| 207. Gilipsky, James L. | 269. Baskas, Thomas J. | 331. Schaeffer, Henry J. |
| 208. Martin, Robert D. | 270. Conner, Thomas | 332. Peters, Johnie R. |
| 209. Mooney, James F. | 271. Parsley, Walter S. | 333. Kremer, Dallas M. |
| 210. Kirkpatrick, Everett | 272. Pittman, Hugh B. | 334. Wyatt, James W. |
| 211. Salnon, Henry F. | 273. Rhodes, Alva E. | 335. Girard, Leonard F. |
| 212. Bush, Lawrence | 274. Duffy, William J. | 336. Walter, James R. |

337. O'Neill, Leslie M.	374. Gresser, Charles J.	411. Yeager, Wallace H.
338. Wedeman, Maurice H.	375. Bertsch, Edward	412. Campbell, Colin A.
339. Wagoner, Earl B.	376. Wilson, Dewey E.	413. Wickham, Peter M.
340. Garrison, Neil B.	377. Finch, Harold G.	414. Eggen, Milton P.
341. Mitchell, Orie L.	378. Jones, Daniel H.	415. Wehling, George W.
342. McLaughlin, Frank A.	379. Guinn, Charles S.	416. Bremer, Robert A.
343. Coke, Bruner	380. Moore, Elmer E.	417. DeRossett, Armand J. Jr.
344. Bulloch, Fulton G.	381. Davis, Roby C.	418. Arthur, James H.
345. Jansen, Otto W.	382. Goodrich, George H.	419. Gilbreath, Thomas J.
346. Rhoden, Joe R.	383. Thompson, Thomas W.	420. Lea, Samuel R.
347. Letchworth, Roy	384. Coyne, Joseph	421. Hackwith, Herman L.
348. Janis, James	385. Macomber, Donald G.	422. Colles, George F.
349. Anderson, Clarence B.	386. Beach, Maurice M.	423. Cornell, William M.
350. Farquhar, Wilber W.	387. Wright, William R.	424. Noble, Harold P.
351. Aikensm, Arron	388. Smith, Monroe D.	425. Midkiff, James R.
352. Saltzger, George S.	389. Jennings, Simpson L.	426. Foye, Robert
353. Cunningham, Verdell E.	390. Salles, Roger A.	427. Mills, Francis X.
354. Lipp, Henry	391. Hagaman, Paul B.	428. McLean, Sherman A.
355. Bauer, Toney	392. Beckner, John K.	429. Tilghman, Marion S.
356. McDonald, Marvin C.	393. Thompson, John W.	430. Blair, Frank D.
357. Johnson, Wilbur C.	394. Greier, Matthew H.	431. Smith, Samson
358. Higgins, Carl M.	395. Ducheane, Joseph O.	432. Thacker, Lloyd W.
359. Kramer, Harry	396. Relyea, Frederick R.	433. Brown, Abram
360. Mitchell, Norman J.	397. Burger, Lewis H.	434. Cathie, Arthie L.
361. Peckham, Robert N.	398. Coy, Charles H.	435. LeDoux, Francis
362. King, George F.	399. Crow, Charlie D.	436. Henry, Harvey A.
363. Knoppe, Favl	400. Gorse, John H.	437. Quirk, John D.
364. Starichenko, William A.	401. Sommer, James A.	438. Frey, Harvey E.S.
365. Bishop, Raymond M.	402. Harrison, Benjamin	439. Spaulding, Ralph E.
366. Robinson, William T.	403. Williams, Marvin R.	440. Hawkins, Milton H.
367. Marstin, Charles P.	404. McKenzie, Marvin C.	441. Bobulski, Frank
368. Wilson, Kannard D.	405. Wojnicki, Rudolph J.	442. Tucker, Douglas M.
369. White, Charles D.	406. Lord, Frank H.	443. McMenamin, Frank J.
370. Russell, Cyril F.	407. Miller, Howard M.	444. Meider, Henry W.L.
371. Laymen, Gilbert E.	408. Baker, Leonard A.	445. Giganti, James M.
372. Lindbeck, Ruben	409. Hamilton, Donald E.	446. Maidel, Mark J.
373. Andrick, Ralph L.	410. Miller, Jean E.	447. Bell, Thomas O.

In the matter of actual service in the Army, two of the Technical Sergeants on the eligible list for promotion to Master Sergeant, published in the previous issue of the News Letter, have to their credit over 26 years; one First Sergeant, over 24 years; two Technical Sergeants and one First Sergeant, over 23 years; four Technical Sergeants and two First Sergeants, over 22 years; two First Sergeants, over 21 years; one First Sergeant and ten Technical Sergeants, over 20 years; one First Sergeant and five Technical Sergeants, over 19 years; one First Sergeant and six Technical Sergeants, over 18 years; two First Sergeants and eleven Technical Sergeants, over 17 years; fourteen Technical Sergeants over 16 years; two First Sergeants and thirty Technical Sergeants, over 15 years; two First Sergeants and four Technical Sergeants over 14 years; one First Sergeant and five Technical Sergeants, over 13 years; one First Sergeant and three Technical Sergeants, over 12 years, and one Technical Sergeant over 11 years.

Of the first 150 Staff Sergeants on the eligible list for promotion to the grade of Technical Sergeant, also published in the previous issue of the News Letter, one has over 28 years of actual service in the Army; two over 27 years, one over 26, four, 25; four, 23; four, 22; three, 21; eight, 20; fourteen, 19; eighteen, 18; thirty, 17; thirty, 16; and thirty-one, 15.

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"BLIND" VERSUS "INSTRUMENT" FLYING

The following interesting item is reprinted from the February 1st issue of the Navy News Letter:

"An error which needs correction is the habit some pilots have of referring to 'Instrument' flying as 'Blind' flying. This is entirely incorrect. 'Blind' flying is exactly that, and applies to the old days of going through clouds, fog, or heavy rain by simply 'hanging on' for a brief period, trusting to the stability of the airplane and considerable luck to reach fairer weather. The air speed meter and perhaps the whistle of the wires were the only effective aids to this kind of flying, which was a hazardous affair

at best, attested to by the fact that some of the country's most experienced air mail pilots not infrequently got into bad spins and tight high speed spirals while trying to go through 'blind.'

'Instrument' flying, on the other hand, is a perfectly safe and sure method of getting through bad stuff. It simply means flight which is correctly directed and controlled by the indication of suitable instruments. This is just about the opposite of 'Blind' flying. Let's keep ourselves straight on this. (Thanks to VF Squadron SIX for setting us clear on this.)'

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BILLS INTRODUCED IN CONGRESS

A Bill (H.R. 5057), introduced in the House of Representatives by the Hon. John J. McSwain, M.C., amends the Air Corps Act, approved July 2, 1926, permitting the Secretary of War or the Secretary of the Navy, at his discretion, to purchase abroad or in the United States, with or without competition by contract or otherwise, such design, aircraft, aircraft parts, or aeronautical accessories as may be necessary in his judgment for experimental purposes in the development of aircraft or aircraft parts or aeronautical accessories of the best kind for the Army or the Navy, as the case may be.

Several other portions of the Act of July 2, 1926, are amended, these dealing with advertising for bids on aircraft, aircraft parts or accessories; the inspection of manufacturing plants producing aircraft for the Army and Navy; the auditing of the books of contractors furnishing aircraft to the government, and the rights and privileges of aircraft designers who are the winners of design competitions for government aircraft.

The Bill also amends the National Defense Act of June 3, 1916, as amended by the Act of June 4, 1920, by providing for the detail of officers of the Army Air Corps for temporary duty with the Navy Air Corps and for the detail of officers of the Navy Air Corps for temporary duty with the Army Air Corps.

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Having in view the establishment of a United States Army air base in Alaska to provide a supporting Army air base at a favorable and strategic location for the protection of the North Pacific and Alaskan coasts and coast cities, a Bill (H.R. 5064) introduced in the House of Representatives by the Hon. John F. Dockweiler, M.C., of California, authorizes and directs the Secretary of War to acquire by donation, purchase or condemnation, such land in Alaska as he may deem necessary and suitable for the establishment of an air depot. A sum not to exceed \$4,000,000 is authorized to be appropriated for the establishment on such land of a United States Army air depot by the construction and installation of the necessary technical buildings, utilities and appurtenances thereto.

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The organization of a Junior Air Reserve to promote national defense is the purpose of a Bill (H.R. 4336), introduced in the House of Representatives by the Hon. John J. McSwain, M.C.

The Bill authorizes and directs the Secretary of War to organize a civilian component of the United States Army, to be known and designated as the "Junior Air Reserve," and to establish rules and regulations for the operation of same. All persons between the ages of 18 and 21 years, of sound physical condition and with education at least equivalent to a full high school course are eligible to be listed as cadets of the Junior Air Reserve, and they shall be entitled to receive such emblem or designation to wear upon the clothing as the Secretary of War may prescribe while receiving such course of instruction and training in aerodynamics and in

the art of flying as shall be prescribed by the Secretary of War.

For the encouragement of the Junior Air Reserve, the Secretary of War is authorized to detail Regular flying officers, or Reserve flying officers called to active duty, to engage in the instruction and training of cadets of the Junior Air Reserve in such private flying schools and centers of air training as may be selected for that purpose, where the number of cadets shall not be less than twenty and where there are approved standards of instruction and training.

Subject to the restriction that there will be no conflict with the work of the Army Air Corps, the use of Army air fields is permitted from time to time, also of airplanes, aircraft generally, and equipment belonging to the Air Corps of the Army, if and when in the judgment of the Secretary of War, such use is wise and proper in promoting the art of flying and in the training of said Junior Air Reserve.

Certificates of graduation evidencing full membership in the Junior Air Reserve shall be issued to all cadets satisfactorily passing the final examination and tests. They shall then be entitled to wear, at pleasure, such uniform as shall be prescribed by the Secretary of War, and such insignia and other designations and decorations thereon or upon civilian clothing, as may be prescribed. Complete record will be kept of all such graduates of training for use in the event of a national emergency.

The Secretary of War is authorized to select each year 300 of the most promising and efficient graduates of the primary instruction authorized for a further course of instruction for a period of not exceeding six months at any school or flying field of the United States Army and then to offer at least 100 each year of said graduates in the primary instruction Reserve commissions as second lieutenants, and to call said second lieutenants to active duty as Reserve officers in the United States Army Air Corps, for such time as the Secretary of War may from time to time prescribe.

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A Bill (H.R. 5232) introduced by Hon. Ewing Thomason, M.C., of Texas, seeks to fill up the commissioned strength of the Air Corps by July 1, 1935, to the number of 1,514 officers, in grades from colonel to second lieutenant, inclusive, through commissioning second lieutenants applicants who hold commissions as first or second lieutenant in the Air Reserve and are graduates of the Air Corps Training Center. Other provisions of the Bill authorize the recruiting of the enlisted strength of the Regular Army to 165,000 men, exclusive of Philippine Scouts, by July 1, 1940, and calling to active duty not to exceed 2,000 Reserve officers of the combatant arms and the Chemical War Service per year, the number from each arm to be regulated in accordance with respective commissioned strengths.

UNUSUAL MISSIONS OF NATIONAL GUARD AIR CORPS

The National Guard aviation performs many missions in addition to the normal flying incident to their routine training. Two unusual missions were recently reported to the National Guard Bureau, one performed by the 44th Division Aviation, New Jersey National Guard, and the other by 26th Division Aviation, Massachusetts National Guard.

Four planes under the command of Major R.L. Copsey, N.J. N.G., recently participated in the search for the lost American Airlines Condor passenger plane in the vicinity of Little Falls, New York.

At the request of the General Manager of the American Airlines, the New Jersey planes reconnoitered an area approximately 200 square miles north and west of Albany. With flying conditions most hazardous over desolate, treacherous country in sub-zero weather, the reconnaissance was continued for over two hours. The lost plane was located by Dean Smith of the American Airlines. It having been decided to drop food and medicine to the damaged plane, Lieut. Emerson, of the 26th Division Aviation, Massachusetts National Guard, was selected for the mission. Major Copsey accompanied Dean Smith back to the scene of the accident to coordinate the civil and military activities by radio and to light the scene of the accident so the military plane could drop its supplies. It took approximately two hours until a successful drop was made at 11:30 p.m.

What the American Airlines thought of the work of the New Jersey Squadron can be seen from a letter written by Mr. C.R. Smith, the President of this concern, to Major Copsey, as follows:

"Dear Major Copsey:

I wish to take this opportunity to extend to you and the members of your organization our sincere appreciation for the valuable assistance rendered employees of American Airlines in their recent search for our lost airplane.

Flying conditions over desolate, treacherous country in open airplanes in sub-zero weather required men whose devotion to duty was so highly commendable as to be beyond adequate expression.

It would be considered a favor by American Airlines if, through a copy of this letter, a better understanding of the duty performed by your organization could be conveyed to those at the head of the National Guard as an exhibition of courage and stamina of which your State can well be proud."

The 26th Division Aviation, Massachusetts National Guard, was particularly active in the past few months in training and in carrying out missions of mercy under the most adverse flying conditions.

Recently a flight of three planes of this Squadron took off from the Boston Airport at 11:10 p.m. on an extended mission to Cleveland, Ohio, to obtain train-

ing and experience in night navigation under winter conditions. A direct course was set for Albany, N.Y., and thence to Buffalo. A heavy snow storm and fuel shortage forced the flight to land at Syracuse at 2:55 a.m. After refueling the flight took off again at 3:45 a.m., flying above the storm to Rochester, N.Y., where improved weather conditions were met. Landing was made at Buffalo for re-servicing the ships, and thereafter the flight proceeded to Cleveland and return without further incident.

Extremely low temperature prevailed over the entire route. Heavy snow on the ground at Buffalo made it difficult to handle the ships. The radio beam receivers purchased by the Squadron gave some trouble initially, but the flight personnel were able to clear this up without outside aid. The personnel consisted of the regular combat crews without mechanics or technical personnel. Captain Edward S. Beck, A.C., Mass. N.G., was the flight commander.

National Guard planes, coast guardsmen and harbor and Boston police were recently mobilized in an intensive but fruitless hunt to find two boys reported adrift on an ice floe in Dorchester Bay, more than a half mile off Carson Beach, South Boston.

It appears that the boys were seen playing on the ice off Carson Beach late in the afternoon. Some individual called up the police station stating that he had seen them float off toward open water on an ice cake which broke loose from a solid sheet stretching toward shore. Unwilling to consider this message a hoax, despite the fact that no report of any missing children had reached them, the police utilized every means at their disposal to locate them.

Airplanes were called for, and six pilots of the 26th Division attending a testimonial dinner to Maj.-General Erland F. Fish, volunteered and hurried under screaming motorcycle escort to take the air in near-zero temperature for an hour's vain search of the harbor.

The rescuing party of airmen, quickly organized by Major Clarence E. Hodge, and including Captain Albert Edson, Lts. Clyde C. Jakway, Francis P. Kendall, Theodore E. Baker and Stanley Beck, had the first airplane in the air less than half an hour after they reached the airport. The second airplane took the air some 30 minutes later, carrying spotlights on the wings which, combined with the flares, served to light up a wide territory of ice floes and open water.

The flares released from the two airplanes brilliantly illuminated the lo-

cality where the boys were reported to have been seen, and so well was this work done that newspaper offices were deluged by telephone calls from inquisitive South Bostonians. The fliers flew back and forth over the area at an altitude of little more than 100 feet, scanning every bit of the ice. Subsequently flares were thrown to light up the ice field adjacent to open water as far out as the main ship channel.

Earlier the same day, some of these same pilots participated in dropping food and supplies to four Nantucket fishermen, marooned on Muskegat Island for five days.

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The first week is spent in field exercises to include the problems of field encampment, field maintenance of equipment and tactical exercises, air and ground, from field bases. The second week at Maroc Lake is spent in aerial gunnery.

The morale of the personnel of the Group has materially increased as a result of present activity and that in immediate prospect in aerial gunnery and bomb dropping. The firing which has been done to date demonstrates the practicability of using the P-26 for gunnery with slight modification of the course as laid down in Training Regulations 440-40. It has been found advisable to move the back boundary line from 1400 feet to 2,000 feet for 90 degree approaches and 180 degree approaches.

Experiments have also been made in element firing with the P-26. In the first tests it was found that 100 feet interval is too close for the ground targets to be used in preliminary firing by elements. Targets spaced at 200-foot intervals were next tried and it was found that this was too far. It has been tentatively decided that 150 feet is the proper interval for ground targets fired upon by an element.

The limited experience to date indicates the feasibility of firing by elements with safety and with more than anticipated accuracy. Early tests indicate a degree of accuracy of wing men of about 50% of the score of

the element leader.

Units of March Field have until recently been deprived of the opportunity to fire machine guns and drop bombs in any quantity and with any regularity due to the absence of a suitable range. Authority was recently obtained to use a dry salt lake and adjacent sage brush covered land at Maroc Lake, a site situated about 45 minutes' air time from March Field in the Mojave Desert. It has been found an excellent site, and its acquisition makes it possible for any organization at March Field to fire any day, a fact which will greatly stimulate carrying out these phases of the training program. The personnel of the 17th Pursuit Group confidently believe that any future gunnery and bombing matches in the Air Corps will find them well represented.

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The Airship was preceded by an advance party of two officers and eight enlisted men who motored to Miami in a convoy of three trucks. This group erected the portable airship mast which had been constructed in the shops of the squadron at Langley Field. The airship mooring site was established on private land east of the Pan American Airport.

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For several weeks the field had the aspect of a thriving movie colony, with the hustling movie company keeping the audience of autograph seekers and hero worshippers scrambling from place to place with their sudden migration from one set-up to another.

On February 1st, the last of the company "wrapped it up with all shots in the bag" and slipped away, leaving Randolph Field strangely quiet after weeks and months of abnormal activity. The picture is still to be reviewed and approved by the Army Board. Major Harms, designated the War Department representative, must make final approval. The Movie Board, consisting of Captains J.K. Cannon, Arthur E. Easterbrook and A.C. Strickland, expect to make their final recommendation in the near future. Some rumor had it that M.G.M. is well pleased with their production.

As a great number of the movie company took part in the filming of "Wings" at Kelly Field a few years ago and are known by officers throughout the service, the names of those who took part in the production of this picture are given, viz: Monta Bell, Producer; Roger Manning, Production and Business Manager; Al Shenberg, John Waters, James McKay, Assistant Directors; Art Brown, Construction; Jack Gertsman, Script Clerk; Clyde de Vinna, Head Cameraman; Charles

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On February 1st, the last of the company "wrapped it up with all shots in the bag" and slipped away, leaving Randolph Field strangely quiet after weeks and months of abnormal activity. The picture is still to be reviewed and approved by the Army Board. Major Harms, designated the War Department representative, must make final approval. The Movie Board, consisting of Captains J.K. Cannon, Arthur E. Easterbrook and A.C. Strickland, expect to make their final recommendation in the near future. Some rumor had it that M.G.M. is well pleased with their production.

As a great number of the movie company took part in the filming of "Wings" at Kelly Field a few years ago and are known by officers throughout the service, the names of those who took part in the production of this picture are given, viz: Monta Bell, Producer; Roger Manning, Production and Business Manager; Al Shenberg, John Waters, James McKay, Assistant Directors; Art Brown, Construction; Jack Gertsman, Script Clerk; Clyde de Vinna, Head Cameraman; Charles

Marshall and Elmer Dyer, Air Cameramen; Paul Vogel, Harry Perry, Bob Roberts, Ray Ramsey, Kyme Mead, Wilbur Bradley, Joseph A. Valentine, Robert Newnard, Irving Glassberg, Al Williams, Jockey Feindel, Walter Strange, Cameramen; Al Sheving, Harry Marble, Herold Baldwin, Harry Parksins, Sam Cohen, Glen Strong, Bill Strong, Dale Deverman, Kay Norton, Walter Rankin, Donald Brigham, Ed Garin, Jas. Higgins, James Hackett, King Kauffman, Assistant Cameramen; Hank Forester, John Selgraph, Lloyd Isbell, Grip; Dean Dorn, Publicity Man; Bill Grimes, Still Man; George Elder, Prop Man; Jas. Brock, John Dullam, Ted Raymond, Sound Men; Matt Gilman, Utility; Perry O'Brien, Al Leider, John Jens, Wes Shanks, Electricians.

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AERIAL GUNNERY FOR THE 20TH PURSUIT GROUP

The 20th Pursuit Group, Barksdale Field, La., will proceed to Chapman Field, Miami, Fla., on Feb. 15th, for two weeks' aerial gunnery training and two weeks of field exercises. Major Millard F. Harmon, Jr., Commanding Officer, will lead the Group, which will be composed of the 53th, 77th and 79th Pursuit Squadrons and the 71st Service Squadron.

The movement will be made in two echelons, ground and air. The ground echelon, commanded by 1st Lt. Manning E. Tillery, will consist of 18 of the latest type Army motor vehicles and will be used to transport mechanics, equipment and supplies.

Due to the inland location and the close proximity of civilian population to the Barksdale Field Reservation, it has been impossible to fire the tow target phase of the gunnery course "A." Hope is expressed that in the near future a permanent gunnery camp may be established near the Louisiana coast and within two hours' flying of Barksdale Field.

Considerable interest has been evinced by pilots of the 20th Pursuit Group as to the outcome of aerial gunnery practice with the P-26 type Pursuit airplane, the latest low-wing Boeing monoplane. Due to the location of the machine guns, two feet, nine inches below the sighting bar, it has been found impossible to bore-sight the P-26 for a range closer than 150 feet without removing the ring cowling. This factor, coupled with the increased speed and visibility, has aroused the interest.

This trip to Miami will be the first movement of troops by motor convoy since the arrival of the 20th Pursuit Group at Barksdale Field on November 1, 1932.

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Air Corps officers recently promoted were Major Walter H. Frank to Lieut.-Colonel; 1st Lt. Hobart R. Yeager to Captain; 2nd Lieuts. J.W. McCoy, P.H. Hobe, C.G. Williamson and George P. Moody to 1st Lieutenant.

RADIO REPAIR STATION AT DUNCAN FIELD

A new Signal Corps Radio Repair Station, similar to those at the other Air Depots, is being installed in the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, for the purpose of securing the maximum service from Signal Corps aircraft radio equipment and insuring that such equipment is in first-class operating condition prior to delivery of reconditioned airplanes to tactical and other Air Corps units. This Section is under the immediate supervision of Major Charles T. McAleer, Signal Corps, as Signal Corps Radio Maintenance and Repair Officer, who joined the San Antonio Air Depot last November from duty in the Office of the Chief Signal Officer.

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MARCH FIELD PERSONNEL A BUSY OUTFIT

Aside from the field exercises and aerial gunnery, the principal activities which have kept the command at March Field, Riverside, Calif., on the jump during the past 15 days concerned the visit of the Corps Area Inspector, with parades, reviews and inspections incident thereto; daily flying by individual pilots to fill in their form 5's, renewed interest in which is engendered by Circular No. 6, War Department, 1935; the daily half hour devoted to close order flying drill by the whole Group; much emphasis on the Link Trainer and instrument flying; and maintenance and other duties labeled routine, but which call for 95% of all soldier effort.

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BROOKS FIELD SEEKS GUNNERY RANGE

Brooks Field is just now much interested in the acquisition of a permanent site for a gunnery and bombing range.

Heretofore, through the courtesy of the owner, a tract of land near Port Lavaca, has been used, but this year the land is not available, and a solution is sought in the proposed purchase of 5,000 acres at Sand Point. Hope is expressed that negotiations may be concluded in time for this year's gunnery.

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The first class of officers from the Office of the Chief of the Air Corps taking instrument flying instruction at Bolling Field, D.C., was started Jan. 17th, and was composed of Captains George C. McDonald, L.P. Hickey, E.E. Bldreth and Lieut. M.E. Cross. Due to the extremely inclement weather, it was not possible to conduct this course of instruction continuously, but these officers have made rapid progress and expressed themselves as being most enthusiastic over this type of flying training. The second class will be started immediately upon completion of the present one.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Hawaiian Department: 2nd Lt. Chester P. Gilger, from Barksdale Field, sailing about April 26th;

To Panama Canal Zone: 2nd Lieuts. William D. Eckert, Langley Field; Albert W. Shepherd, Selfridge Field; David E. Baker and Robert Scott, Jr., Mitchel Field, sailing about April 4th.

To Philippines: 1st Lieut. Harold Q. Huglin, Langley Field, sailing about May 14th; also 1st Lieuts. Edwin R. French, Selfridge Field, and Alva Lee Harvey, Langley Field.

To Langley Field, Va.: 2nd Lieut. Paul G. Miller, from Panama Canal Dept.

To Mitchel Field, N.Y.: 1st Lieut. Roland O.S. Akre from Panama Canal Dept.; 2nd Lieuts. Ralph P. Swofford, Jr., and Millard C. Young, from Panama Canal Dept.

To Crissy Field, Calif.: 1st Lieut. Herbert M. Newstrom from Panama Canal Dept.

To Randolph Field, Texas: 2nd Lieut. Robert W. Burns, from Crissy Field, Calif.

To Fort Crockett, Texas: 1st Lieut. Melie J. Coutlee, from Panama Canal Dept.

To Selfridge Field, Mich.: 2nd Lieut. Jarred V. Crabb, from Panama Canal Dept.

To Washington, D.C., for duty in Office of Chief of the Air Corps: Captain George S. Warren, from Selfridge Field, Mich.

To Inglewood, Calif.: Captain Edward M. Robbins, from duty with the Boeing Aircraft Co., Seattle, Wash., to duty with the Northrup Corporation as Air Corps Representative.

To Headquarters, 9th Corps Area: 1st Lieut. A.J. Kerwin-Malone, from March Field, to report to Major-General Paul B. Malone for assignment to duty.

To Panama Canal Zone, sailing about April 4th: 1st Lieuts. Draper F. Henry, Mitchel Field; Thomas L. Mosley, Fort Crockett; Isaac W. Ott, Brooks Field.

RELIEVED FROM DETAIL TO THE AIR CORPS: 2nd Lieuts. Peter J. Kopsak to Cavalry Division, Fort Bliss, Texas; Robert C. Kryser to Infantry, 2nd Division, Fort Sam Houston, Tex.; Kenneth R. Kenerick to Hawaiian Department for assignment to duty with the Coast Artillery Corps.

RETIREMENTS: Captain Harold F. Rouse and 1st Lieut. Charles H. Earnest, January 31, 1935, for disability incident to the service; Captain Frederick A. Johnson, Scott Field, Ill., to proceed to his home to await retirement.

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TRIALS AND TRIBULATIONS OF A FLIGHT SURGEON

Much has appeared in print of late regarding new construction at Air Corps posts, highly complimentary phrases being utilized in describing the appearance of the various buildings, barracks and quarters, and the superlative degree of comfort they afforded to delighted personnel.

But all is not well yet, as testified by a contribution to the News Letter just received from the Brooks Field Correspondent, who

commenting on the considerable amount of publicity given war-time construction of buildings, both residential and official, still utilized at various posts throughout the length and breadth of Uncle Sam's army occupancy, states that it remained for Brooks Field to demonstrate that, in a pinch, a certain ingenuity could be called into play - not to preserve the building but those dwelling within it. As a result of an unusually vigorous onslaught of the elements, not to speak of Time itself, one building among others at Brooks Field is fairly in a state of collapse. The building in question is occupied by Major A.W. Smith, Flight Surgeon, who procured three long poles, formerly used by the Signal Detachment as telegraph wiring material, and proceeded to "prop" them against the timorous building, to the amusement of all observers but to the unquestionably effective steadying of the structure.

The Correspondent concludes with the hope that new construction may be procured for Brooks Field before some of the buildings actually fall down on the occupants.

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NOTES REGARDING THE COLD WEATHER FLIGHT

From Hamilton Field word comes of the collapse of the landing gear of a fast B-12 Bomber at Fort Bliss, Texas, piloted by 2nd Lt. Edward W. Suarez. He was not injured.

When last heard from, Capt. Arthur G. Hamilton and 2d Lieut. Birrell Walsh were at Selfridge Field having their planes equipped for the cold weather test flight to Great Falls, Montana, and return. Gigantic skis were being placed under their Martin Bombers, and experimental starters and primers were being installed. The enlisted men who were working with them almost night and day to get ready for the flight were Staff Sgt. Thomas B. Vinson, Sgt. Fry H. Coulter, Corporal Harvid Saeger and Pvt. 1st Cl. Jack Mathews.

First Lieut. Paul H. Kemmer, who piloted the fourth B-12 when this flight left Hamilton Field, had not yet landed at Selfridge Field, according to a letter from Captain Hamilton. He writes that from Sunny California, where it seldom freezes, to an ever frosty mercury hovering from one to 15 degrees above zero Fahrenheit in Michigan is quite a contrast, and makes one appreciate California weather.

Polar bears painted upon the skis, which look like battleships, seem to be chasing Jiggs (the 11th Bombardment insignia) is the description given the B-12, equipped for the cold weather flight, by Captain Hamilton.

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NOTES FROM AIR CORPS FIELDS

Hamilton Field, Calif., February 5th.

Hamilton Field was host to 300 Junior Birdmen from San Francisco. They were shown exhibits of a technical nature within the hangars and were taken for a tour of the post by Lieuts. J.G. Mocre and E.H. Beebe.

First Lieut. Emery S. Wetzel left this station for service in the Hawaiian Department.

Capt. Junius I. Smith, M.C., reported for duty after a tour of service at Luke Field,

Pvts. Holly B. Ivey, 11th Bomb. Sqdn., and Oscar S. Wagner, 70th Service Squadron, were ordered to Crissy Field for examination for appointment as flying cadets.

Flying Cadet Henry R. Spicer, attached to the 31st Bomb. Sqdn., was transferred to the 17th Pursuit Group, March Field, Calif.

Staff Sgt. Robert F. Sumner was assigned to the 9th Bomb. Sqdn. as replacement for Staff Sgt. James R. Knowles, who departed for service in the Hawaiian Department.

1st Lieut. Stanley J. Reilly took up his duties as Post Chaplain recently.

Staff Sgt. Albert W. Dukes was transferred to the Panama Canal Zone, and Staff Sgt. John F. Moran arrived from the Philippines. Sgt. Marion T. Matlock arrived from the Canal Zone.

Master Sgt. Thomas F. Randle, a member of Gen. Pershing's Punitive Expedition and of the Air Corps since 1916, reenlisted in the 31st Bomb. Squadron, January 5th.

Second Lieut. Edward W. Suarez was transferred from the 11th to the 31st Bomb. Sqdn.

Capt. John M. Davies relieved Major Fabian L. Pratt, M.C., as the senior officer on the Aircraft Classification Committee.

Major Robert C. Murphy, Flight Surgeon, recently addressed the Lions' Club at Petaluma on the subject of "Aviation Medicine."

Mrs. Devereux M. Myers, wife of Capt. Myers, was severely injured in an automobile accident and is confined at Letterman Hospital.

Forced by engine failure to land his PT-3 plane in a swampy area on the Vallejo cutoff, 2nd Lt. Richard T. King, 9th Bomb. Sqdn., escaped uninjured though badly plastered with mud. The plane was returned to the field for repairs.

Flying Cadet Lewis L. Mundell ground looped a PT-3A at Crissy Field and dashed into a sea wall. Although shaken, neither he nor Staff Sgt. Ernest Levesque was injured.

In spite of lack of training facilities at the field, a basketball quintet has been pointed by 2d Lt. Joel L. Crouch, Air Res., which has out-tossed all of the service and civilian teams hereabouts. Second Lieut. Duncan J. Powers, Air Res., has also groined a quintet in the 31st Bomb. Sqdn., which is entering the Marin County League. Inter-Squadron basketball will be scheduled as soon as a basketball floor is secured at the field.

Although handicapped by having only an average of three PT-3A planes available for daily flight, the 26 pilots of the 31st Bomb. Sqdn., both assigned and attached, amassed an average of 13 hours and 33 minutes per pilot, making a grand total of 309 hours and 40 min-

utes of pilot time for the Squadron during the month of January.

Capt. Arthur G. Hamilton, 2nd Lt. Edward W. Suarez, Sgts. Roy H. Coulter, Ludwig Kurrle, Cpls. Harvid Saeger and Raymond J. Elliott, 11th Bomb. Sqdn., departed Jan. 21st for Wright Field for installation of equipment in B-12 planes to be used in the cold weather test flights to be conducted in the north central part of the United States.

Air Corps Detachment, Fort Lewis, Wash.

Looks like it's going to be a busy season, what with gunnery camp at Ilwaco, Wash., at least two weeks in March, concentration of ground troops of the Third Division at Fort Lewis in May, and plenty of cooperative work before, after and between these periods. The weather is breaking pretty good this year. We've seen the sun four days out of the last fourteen.

Master Sgt. Raymond Stockwell departed on an extended avigation flight to Albany, N.Y., accompanied by Staff Sgt. Martin Brucher, and is returning via San Antonio and the Southern route.

Other extended flights were made by Lieut. Everett S. Davis to Chanute Field and return, accompanied by Pvt. John D. McDonough, who joined the class in Paper Work and Administration at the Technical School, and by Lieut. D.W. Titus, with Capt. C. Smith, Ccnst. QM, to Los Angeles and return.

35th Division Aviation, Missouri Nat'l Guard.

Seven officers of the 110th Observation Squadron in five airplanes participated in the All-American Air Races at Miami, Fla., Jan. 9th to 13th, inclusive, viz: Major Philip R. Love, Captain Eric H. Kaepfel, 1st Lieuts. Pay H. Kutterer, Clifton C. Hutchison, Winston W. Kratz, 2nd Lieuts. Cleon E. Freeman and Eugene D. Zadontseff.

Randolph Field, Texas, February 4th.

The morale of the Flying Cadets has taken a decided upturn since the publication of the order for examination of flying cadets with a view to their appointment as officers in the Air Corps. Now they really have something to look forward to.

Last October the Flying Cadet Detachment installed four bowling alleys in the basement of the Cadet Administration Building. They are one of the sources of popular interest among the personnel of the field.

Four Bowling Leagues were organized, an officers league of five teams, an enlisted men's league of seven teams, the 53rd Squadron league of four teams, and the student-officer-flying cadet league of seven teams.

In the Officers League, Headquarters leads with 24 victories and 4 defeats; Flying Cadets hold second place, with 11 wins and 13 losses; followed by "B" Stage, won 12, lost 16; Student Officers, won 10, lost 14, and "A" Stage, won 7, lost 17.

Lieut. Hawkins' high single of 266, Cadet Dunlap's 621 triple, and Headquarters 2580 team set are the high lights of the league so far.

Barksdale Field, La., February 1st.

The Inter-Squadron basketball season at the field came to a spectacular close on January 28th, with a decisive victory by the 77th over the runner-up, the 79th. This marks the second Group Championship for the 77th Cagers in the last three years, they having won the Cup in 1933.

High point honors for the season goes to Pvt. Knotts of the 77th, with 129. With the material developed during the Squadron Tournament, prospects for a winning Post Team seem good. The Barksdale Field Basketeers will face a tough schedule for the 1935 season, meeting the leading teams of the south and southwest, such as the U.S. Naval Air Station at Pensacola, Fla.; Texarkana College, Texas; Scott Field, Ill.; Fumble Oilers, Brown Paper Mills, Ft. Crockett, Brooks and Randolph Fields. Lieut. D.C. (Doc) Strother, former West Point cage star, was appointed coach of the Birdmen. He piloted the team in 1934, turning in 14 wins against 6 losses.

The Barksdale Field amateur boxing team ranks among the leading teams in the southwest. The Birdmen boxing team was first organized in July, 1934, Lieut. Earl W. Barnes being appointed team coach. At that time only two of the members of the team had any former glove experience. With two veterans and a wealth of willing young material, Lt. Barnes went to work. In their first show, against the Shreveport Health Club, Barksdale Field scored five wins against two defeats. Since that time the Birdmen fighters have stepped out in fast company and turned in sensational victories.

The Birdmen face a tough schedule for 1935, meeting the Chilocco Indians, Southwestern Louisiana Institute, Shreveport Health Club, Dallas A.C., Louisiana Tech. and Louisiana State University.

Langley Field, Va., February 4th.

36th Pursuit Squadron: Second Lieuts. Edward G. Kiehle, Harold L. Neely, Thomas J. Schofield, James E. Stroud, Edgar M. Wittan and George W. Youngerman, Air Reserve, whose extended active duty expired Dec. 31st, were given two additional months' active duty, effective Jan. 2, 1935. Second Lieut. Ralph L. Wassell, Air Reserve, was assigned to this organization January 2nd for a period of six months' active duty.

59th Service Squadron: Athletics form an important part of squadron life after the day's work is done. Our boys managed to clinch second position in the Post Basketball tournament recently completed after ending up with a tie with other contenders. The past football season which gave Langley Field the Third Corps Area championship depended largely upon active support rendered by players from this squadron. Winter practically

limits sports to such games as basketball, just finished, and bowling now in progress.

The 59th Barracks is also the home of the 2d Bombardment Group Headquarters and 2nd Photo Section Detachments. A cafeteria system of mess is operated. Day Room, Recreation Room, Barber and Tailor Shops are also contained in the barracks for the convenience of the men.

Rockwell Field, Coronado, Calif., Feb. 5th.

The Engineering Section of the Rockwell Air Depot is still busily engaged in the priority work of making changes in the Martin Bombers. Four of these were completed and left this station for cold weather tests in the middle west. Two were equipped with de-icer equipment. Unfortunately, one of the four was put out of commission at El Paso when the landing gear failed just about the time the wheels were put on the ground. That airplane was dismantled and sent here for repairs. At the present time it appears that twelve more E-12's will be flying before the middle of this month.

San Antonio Air Depot, Duncan Field, Tex. Feb. 9.

This Depot enjoyed unusual opportunities during the past month for personal liaison with the Materiel Division, Wright Field, visitors therefrom being Capt. Wm. J. Panlon, Ployer P. Hill, Lieuts. Clarence S. Irvine, Frank G. Irvin and B.W. Chidlaw.

Other visitors ferrying planes to and from this Depot were Captains Charles J. LaGue, Wellman and Royal and Lieut. Vaughn, 45th Div. Aviation, Colorado National Guard; Capt. W.B. McCoy, Instructor, Tenn. National Guard; Capt. Charles A. Horn, Instructor, Arkansas National Guard; Lieut. Robert W. Harper, Chanute Field, and Lieut. Benj. S. Harrell, Air Reserve, from Langley Field.

Messrs. H.P. Adams and F.E. Tugwell, of the Assembly & Repair Department of the Naval Air Station, Pensacola, Fla., were recent visitors here for a few days' inspection of our Engineering Shops in the course of a tour of the more important military and commercial engineering establishments of the country. This was one of several visits made by Navy Department personnel from time to time in the past, and such visits afforded splendid opportunities for interchange and broadening of ideas in aviation matters between the two arms of national defense.

Brooks Field, San Antonio, Texas, Feb. 7th.

Captain Calvin E. Giffin, 1st Lieuts. Reuben Kyle, Jr., Isaac W. Ott, D.F. Stace, Staff Sgts. Cayus P. Petersen, John Murphy, Williamson, and Corp. James S. Pollock are participating in the Cold Weather Test at Mt. Clemens, Mich. So far, no frozen ears have been reported, although many pocketbooks are said to have been frostbitten. Lieut. Ott was ordered to Panama, to sail in June.

Major Charles B. Oldfield, 1st Lieut. Milton J. Smith and 2nd Lieut. Samuel O. Redetzke are attending the Navigation School now being con-

ducted at Rockwell Field.

Major Henry J.F. Miller, Air Officer, 6th Corps Area, formerly Executive Officer of Brooks Field, is spending leave in San Antonio, utilizing a good bit of his time renewing friendships at the field and collecting a few bets on golf. Major and Mrs. Miller were among the most popular of Brooks Field personnel and their visits are always welcomed by their many friends throughout the 8th Corps Area.

A widely popular sport at the field, and one which has come to occupy importantly that sometimes monotonous interval following Sunday services and nighttime luncheon, is Skeet Shooting. The Post possesses an excellent range, and those participating include most every officer and his lady of the Field. In fact, the popularity of this well liked pastime can be noted in the varying ages of those indulging, ranging from 8 to 65. At the first opportunity, a match is to be concluded between Brooks Field and Fort Crockett.

Flight B, 16th Obs. Sqdn., Ft. Leavenworth.

Construction was started on a paved road from the Engineers Bridge to the field proper. This will mark the end of conveying supplies and personnel over a dirt road which at times was almost impassable. All of the above mentioned projects are being constructed from funds allotted under the Federal Reconstruction Program.

During the past few months the flying field has been enlarged and improved to a considerable extent. The field is closed for night operation and a large part of the landing area is closed. It is anticipated that this station will be completely opened for aerial traffic by next June.

The entire complement of new motor vehicles has been received and they were certainly welcomed, as our old vehicles were on their last lap.

After ferrying an C-25C to the Fairfield Air Depot for overhaul, Major Rosenham Beam took delivery of one equipped for instrument flying. We were anxious to receive this plane and expect to perform a considerable amount of instrument flying during the present year.

43rd Division Aviation, Conn. National Guard.

Although their plans were rudely upset by the snow and fog, several members of the 118th Observation Squadron, Conn. N.G., flew to the Air Races at Miami, Fla., as a part of their aviation training. Lieut. Mallette and Sgt. Young departed from Hartford on Jan. 6th, landing at Bolling Field to refuel. After scrutinizing the weather reports, they immediately decided to spend some time in the Nation's Capital, and it was late on Thursday, Jan. 10th, before they were able to leave for Fort Bragg, where they spent the night in the old hospital with some 200 other members of the Air Corps who were likewise bound for Miami. It is reported that the

early arrivals, as they lay in bed, were afforded a great deal of amusement by those who came later in their efforts to find a bunk. It seems that this process involved the use of a flickering candle, accompanied by the sound of muttered curses from those barking their shins. Lieut. Mallette and Sgt. Young flew on to Miami the following day.

Their departure, planned for Monday, being delayed, Capt. Generous with Sgt. Russell as passenger, and Lieut. Merrick, Regular Army Instructor, with Capt. R.G. Sherman, Infantry Instructor with the 169th Infantry, Conn. N.G. as passenger, left Brainard Field on Thursday and arrived at Pope Field that evening, continuing to Miami the following day.

The return trip to Hartford from Miami was made on January 15th without incident, save that Lieut. Mallette remained overnight at Bolling Field. The radios in the other ships enabled the pilots to secure the latest weather reports from the Department of Commerce stations, which aided them very materially in their flight.

All reports are that the sunshine of Florida and the hospitality of her citizens were most plentiful; that the Selfridge Field men flew some beautiful formations, and that the entire trip was a pleasant success.

45th Division Aviation, Lowry Field, Denver, Colo.

We now have all but three of our C-19E airplanes, and expect to receive these in the near future. Most of the officers are pleased with the performance of the C-19's, but are still desirous of having more room in the pilot's cockpit and less contortion in the reading of the gasline gauge.

The announcement of appointments in the Army with permanent commissions has created some excitement in our Squadron. Lady Fortune will probably shine for some of the National Guard officers. This depression has made a permanent commission look very attractive to most of us.

Bolling Field, D.C., February 12th.

A fire occurred at Bolling Field at about 10:30 a.m. on February 6th, completely destroying Hangar No. 6, which was used by the Department of Commerce. The fire apparently originated from a short circuit caused in the radio equipment in one of the airplanes stored in the hangar. Three airplanes were destroyed and quite a lot of valuable equipment. Due to the prompt and energetic effort on the part of the Bolling Field Fire Department, and the Fire Departments of Washington, the fire was confined to the hangar in which it originated.

First Lieut. H.K. Baisley, pilot, accompanied by Capt. G.G. Lundberg, departed Jan. 29th on an extended flight to Los Angeles, Calif., returning to the field on February 10th.

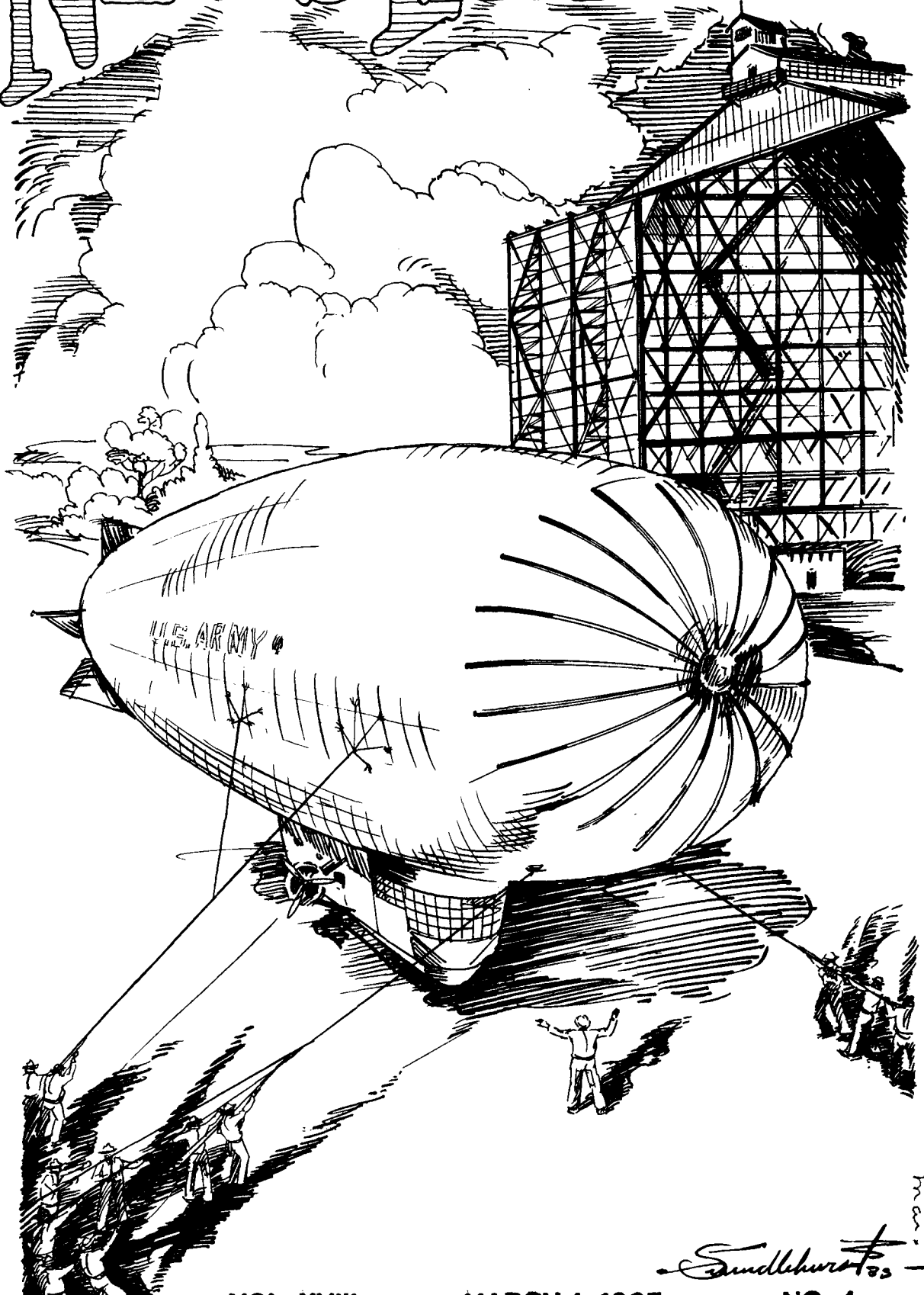
Among visiting pilots last month was Lieut. McKiernan, accompanied by four officers of the New Jersey National Guard from Newark, who landed in sub-zero weather after a sojourn at Miami, Fla. All were complaining of sunburned backs.

SOME OF THE MORE INTERESTING BOOKS AND DOCUMENTS
RECENTLY ADDED TO THE
AIR CORPS LIBRARY

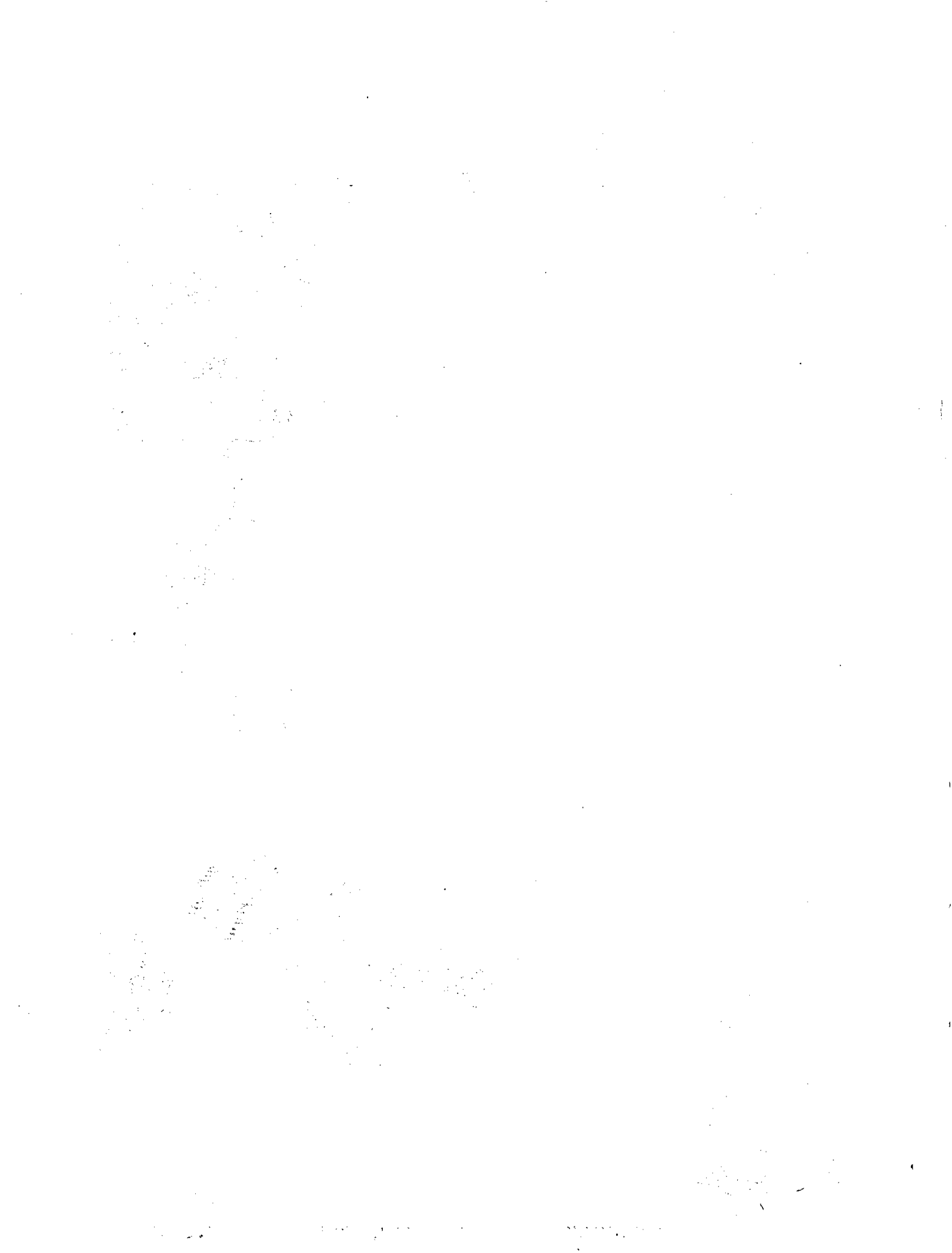
Available for loan to Air Corps Organizations only upon request to the
Air Corps Library, Munitions Bldg., Washington, D.C.

- A 00.51 45 U.S. American Embassy, Moscow, Russia. Provisional regulation for the use of foreign military aircraft visiting the air space and territory of the Union of Socialist Soviet Republics. Wash. May 13, 1934. Caption title, 7f. 33cm. Tr. by M.I.D. from Enclosure No. 1 to dispatch No. 239 of Nov. 3, 1934, from the American Embassy, Moscow.
- A 40.3/34 Guyot. A new device for rapid calculation of the astronomical position of aircraft. Wash. Sept. 1934. caption title, 19f. 33cm. Tr. B-8292. Tr. by M.I.D. from L'Aeronautique, Sept. 1934.
- A 81/52 Junior Birdmen of America. Army aircraft insignia. N.Y. nd. 23p. incl. illus. 23cm. (Junior Birdmen Library Series. Handbook No. 5.)
- B 63/8 Flamme. The unusual fatigue due to the operation of aircraft; diseases which may result therefrom considered as occupational accidents covered by the law of March 31, 1928. Wash. Jan. 29, 1935. caption title, 35f. 33cm. Tr. by M.I.D. from the French.
- D 00.113 54 Beyne, M.J. Disorders occasioned in the human organism by flight at high altitudes, causes, mechanism, defenses. Wash. 1934. caption title, 29f. 33cm. Tr. by M.I.D. from Annales de physiologie et de physicochimie biologique, vol.X No.3, 1934.
- D 12.1/14 France. Ministry of commerce and industry. Bureau of industrial property. Pyrometric lamp. Wash. Jan. 26, 1932. caption title, 3f. 33cm. Tr. by M.I.D. from French letter of patent.
- D 52.1/Far- man/1 Societe des avions H.-M. & D. Farman. Farman. Billancourt (Seine), nd. cover title, 48p. incl. illus. 27 $\frac{1}{2}$ cm. Takes up Farman 355, 202, 400, 390, 360, 356.
- D 52.5/18 Panetti, Modesti. Problema dell'atterraggio con carrelli a reazione combinata elastica e dissipatrice. Torino, 1934. 17 p. incl. diags. 24 $\frac{1}{2}$ cm. English title: Problems of landing gear combining the reaction of an elastic device and a brake.
- D 62/7 France. National Office of Industrial property. Map arrangement of folding plan. Wash. 1934. caption title, 6f. 33cm. Tr. by M.I.D. from the French.
- 629.13 U.S. National Advisory Committee for Aeronautics. Kay 331
U13ac gyroplane (British); all-metal single-seat light rotor
No. 198 plane. Wash. Jan. 1935. cover title, 6p. 2f. incl. illus. diags. 26 $\frac{1}{2}$ cm. (U.S. National Advisory Committee for Aeronautics. Aircraft Circular 198.)

NEWS LETTER



Sundburot
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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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REORGANIZATION OF THE AIR CORPS IN THE UNITED STATES INCIDENT TO
THE ORGANIZATION OF THE G.H.Q. AIR FORCE

Instructions have just been issued by the War Department, effective March 1st, governing the reorganization of the Air Corps within the continental limits of the United States in connection with the organization of the General Headquarters Air Force.

Under the heading of control and jurisdiction, the instructions provide that the Office of the Chief of the Air Corps, the Materiel Division (including Air Corps Depots) and the stations, installations and units (assigned or attached) of Air Corps Special Service Schools remain under the jurisdiction of the Chief of the Air Corps.

All Air Corps stations, station complements, photo sections, Corps and Army observation units and Corps Area detachments, except those noted in the preceding paragraph, remain under the jurisdiction of Corps Area Commanders concerned.

All units of the G.H.Q. Air Force are assigned to the control of the G.H.Q. Air Force Commander.

The War Department has issued a station list, showing the location of the various activities under the jurisdiction of the Chief of the Air Corps and the stations of the various units under the control of the G.H.Q. Air Force Commander. This list will be distributed to all Air Corps activities in due course of time.

In the assignment of Regular Army Air Corps officers to station complements, Barksdale and Langley Fields will receive 11 each, and Bolling, Brooks, Hamilton, March, Mitchel, Rockwell, Scott and Selfridge Fields, 8 each. Officers of other branches who are assigned to duty at any of these Air Corps stations as Quartermaster, Surgeon, etc., will be part of the station complement at that station. The Air Corps officers in the station complement will be entitled to the temporary grades indicated in Circular No. 7, War Department, dated January 25, 1935. The remaining officers at a station will be available for assignment to combat units, service squadrons and photo sections organized thereat.

At the earliest practicable date after March 1st, a total of 15 enlisted men, including 2 Technical Sergeants, 1 Staff Sergeant, 4 Sergeants, 4 Pri-

vates, 1st Class, and 4 Privates, among whom one holds a 1st Class Specialist rating; one, 3rd Class, and six, 6th Class, will be transported by air from Randolph Field to Maxwell Field. Upon arrival at the latter station, these men will be assigned to the Air Corps Tactical School Detachment, or units attached to the Air Corps Tactical School, as directed by its Commandant.

A total of 75 enlisted men, including 12 Sergeants, 12 Corporals, 40 Privates, 1st Class, and 11 Privates, among whom 26 hold Specialist Ratings, viz: eight, 2nd Class; six, 3rd Class; 3 each, 4th and 5th Classes, and six, 6th Class, will be transported by air from Barksdale Field to Maxwell Field, to be assigned to duty as indicated in the preceding paragraph with respect to the enlisted men arriving from Randolph Field.

The Headquarters G.H.Q. Air Force and Headquarters Squadron, G.H.Q. Air Force, consisting of 2 Master Sergeants, 1 First Sergeant, 4 Technical Sergeants, 8 Staff Sergeants, 7 Sergeants, 7 Corporals, 18 each Privates, 1st Class, and Privates, total 65, included among whom will be 7 air mechanics, will be consolidated into Headquarters and Headquarters Squadron, G.H.Q. Air Force, and will proceed by rail on or about March 1, 1935, from Bolling Field to Langley Field. Included among these 65 men are 23 holding Specialists' ratings, as follows: one, 1st Class; three, 2nd Class; five, 3rd Class; one, 4th Class; two, 5th Class, and eleven, 6th Class.

Service Squadrons are charged with establishing and operating messes for combat units when these units are operating at their own stations, and, when possible, in the field. Mess personnel assigned to combat squadrons will be detached to service squadrons for this purpose. During maneuvers away from their home stations and when unaccompanied by service squadron personnel, or when established messes are not available, combat units will establish and operate their own messes.

Service Squadrons and station complements will each establish and operate their own messes. At stations where consolidated messes are in operation on account of restrictions due to lack of suitable construction, the station complement, assisted by the necessary de-

detachments from the combat and service squadrons, will operate the mess. These provisions will apply only when the combat and/or service squadrons are at their home stations.

The detachment of enlisted men or officers from Air Force units to special duty of any kind, connected with the internal administration of a post, will

be made only with the approval of the tactical commanders concerned.

Air Corps personnel, who are assigned to the station complement and who are on flying status, will be attached for flying training by the station commander to the tactical unit recommended by the tactical commander.

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GENERAL WESTOVER RETURNS FROM INSPECTION FLIGHT IN THE NORTHWEST

Brig.-General Oscar Westover, Assistant Chief of the Air Corps, on January 11th left Washington on an extended cross-country flight, arriving at Pearson Field, Vancouver Barracks, Wash. January 14th.

While in the Northwest, General Westover inspected from the air, and in many cases on the ground, 21 airports and proposed sites for airports or air bases. Marked progress in building and improving airports was found to have been made since his last visit to the Northwest at the time he conducted air force command post exercises there in June, 1933.

General Westover conferred with the governors of Washington and Oregon, as well as their advisors, on airport development. At the request of Governor Martin, of Washington, General Westover furnished to Mr. Lacey V. Murrow, State Director of Highways, his comments upon a proposed State bill directed to the improved administration of State air-

ports. General Westover found that in both States a considerable number of new airports and landing fields are under construction or projected, and that in each State the Emergency Relief Administrations, the State Board of Aeronautics, and the various Chambers of Commerce are cooperating to advance the program.

Another major purpose of General Westover's visit to the Northwest was the transaction of business of his office as Director of Aircraft Production, in connection with the affairs of the Spruce Production Corporation.

The return trip to Bolling Field included stops at Hamilton, Crissy, Rockwell, Clover and March Fields. From March Field the Southern Airways was followed, via Tucson and El Paso to Barksdale Field, Maxwell Field, and Candler Field, Atlanta, Ga.

Upon returning to Washington, General Westover made a full report of his trip to the War Department.

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OFFICER REWARDED FOR HEROISM

Capt. Sargent P. Huff, Ord. Dept., stationed at Rockwell Field, Calif., was recently awarded the Soldier's Medal for heroism displayed by him August 28, 1934. In the afternoon of that day he was lying on the beach at Rockwell Field watching his own children playing in the surf with other children of the post. A sudden scream of "Help" from 11-year old Bobby Archer brought him suddenly to his feet. Observing that the boy was caught in a rip tide and be-

ing carried out to sea, Capt. Huff, with utter disregard of his own safety, swam into the rip tide and, with great difficulty, succeeded in bringing the boy safely to shore, saving his life.

"Captain Huff well deserves the honor that has been bestowed upon him," says the Rockwell Field Correspondent. "His courage and ability will long be gratefully remembered by Lieut. and Mrs. C. E. Archer, parents of the youngster he saved."

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FOREIGN AIRPLANE DEVELOPMENT

Mr. John J. Ide, Technical Assistant in Paris, France, of the National Advisory Committee for Aeronautics, recently addressed Materiel Division personnel at Wright Field, O., on the subject of Foreign Airplane Development. Mr. Ide stressed the influence on Foreign transport aviation during 1934 of the high speeds attained by American transport airplanes, pointing out that, since it was considered abroad that aerodynamically the design of the airplane has been improved as far as possible, concentration had been bent upon raising the efficiency of power plants. From his de-

scription of airplanes shown at the Paris Exhibition this concentration had evidently borne fruit, for scarcely a speed of less than 200 m.p.h. was mentioned in connection with them. Some of these were computed speeds, however.

Of interest was the fact that in many of the advanced engines power plant development had been greatly advanced after the engine was placed in service, the conclusion reached being that if the services were willing to worry along with their "teething troubles," quicker progress was made in the development in an airplane than on the test stand.

Except in Germany, Mr. Ide said, no

great progress had been made with the heavy oil engines. Replacement of biplanes by monoplanes, principally the low wing monoplane, and the general adoption of metal construction are reflections of tendencies that we have

noted in our own development. Mr. Ide illustrated his talk with slides.

Captain D.M. Reeves, Chief of the Technical Data Section of the Materiel Division, introduced the lecturer.

20TH PURSUIT GROUP GOES "ON THE AIR."

The 20th Pursuit Group, stationed at Barksdale Field, La., performed their part in officially opening National Defense Week in Shreveport. Through arrangements made with a local broadcasting station, KRMD, the Group was "on the air" for 15 minutes at high noon on Tuesday, February 12th.

Maneuvering close to Shreveport, the commands of Major Harmon, Group Commander, were picked up and rebroadcasted to

the listening public in and around Shreveport. A low bank of clouds partly obscured at times the group of 33 airplanes, but the noise made by dives was plainly audible to all listeners. A special weather broadcast by the Group Communications Officer while the Group was "above the clouds" proved very interesting to the public. This being the first rebroadcast of its kind near Shreveport, it proved a huge success.

BOMBARDMENT WING RETURNS FROM FIELD MANEUVERS

By the Langley Field Correspondent

The 2nd Bombardment Wing, Langley Field, Va., 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 31 airplanes utilized included 44 Pursuit, 29 Bombardment and 8 Transports. The ground echelon used 42 trucks of the $\frac{3}{4}$ and $1\frac{1}{2}$ -ton class and an ambulance.

Due to the shortage of airplanes, the Wing was organized for the maneuvers as two groups of two squadrons each, in accordance with the Tables of Organization proposed by the Andrews' Board, but it was increased in the matter of personnel due to the requirements for truck drivers and to the further fact that the Wing completely took care of itself without the aid of Service Squadrons. Concentrations and unit movements to concentration were made on this organizational status. Tactical and combat maneuvers were flown as two air forces. Each air force consisted of one Pursuit Squadron and one Bombardment Squadron. In combat exercises, decentralization of units was practiced wherever practicable and contact was maintained by radio between the Wing Commander and his units.

The flight (2 elements of 3 planes each) operated as the basic tactical unit; the squadron as the basic administrative and tactical unit; the group as the basic supply, administrative and tactical unit; the Wing as the major tactical command. The Group Commanders and staffs directed the tactical employment and administered to the needs of their composite groups (half Pursuit and half Bombardment) in

their respective combat sectors. The Wing Commander and Staff functioned as the superior headquarters in the theatre of operations.

A total of 18 independent Air Corps camps were made; 3753 hours were flown, 3315 convoy road miles and 2675 air line miles were covered in Wing movements.

A ground radio net between the Wing and Group headquarters and between the Wing and the Air Corps net through Maxwell Field was satisfactorily maintained by using SCR-187 sets installed in airplanes with improvised power furnished while on the ground by portable gasoline-driven units.

The purpose of the maneuvers was manifold, - to test whether an Air Corps combat unit could operate in the field, constantly changing its theatre of operations; take care of itself; supply itself by air transportation (including rations and Air Corps supplies) and evacuate its sick. In fact, all the related functions of field operations were tested. The present field equipment of the Wing was tested under war conditions. The Wing was tested as a combat unit under varying conditions of terrain and weather.

On January 9th, the 2nd Bombardment Wing began its movement by groups from Langley Field, Va., to the concentration point on the Pan-American Airport at Miami, Fla. Delayed by fog, the Wing completed its concentration on January 11th.

At Miami, the Wing was divided into two opposing air forces and plans were made for war to begin in the first theatre of operations. The front line was designated as an east-west line through Tampa, and the two opposing air force commanders were permitted to use,

and operate from, any airport more than 20 miles from the front line in their respective areas. The Red Air Force, commanded by Captain A.M. Guidera, was south of the front line. Captain Guidera placed his Pursuit Squadron, commanded by Captain H.H. George, and his Air Force Headquarters at Sarasota, Fla., and his Bombardment Squadron, commanded by Captain E.C. Black, at Bradenton, Fla.

The White Air Force, commanded by Major Willis H. Hale, defended the area north of the front line. Major Hale placed his Bombardment Squadron, commanded by Captain R.T. Cronan, and his Air Force Headquarters at Lakeland, Fla., and his Pursuit Squadron, commanded by Captain Rex Stoner, at Auburndale, Fla. All of these airports, with the exception of Lakeland, were typical war time airdromes. The location of the airdromes used by each air force was kept secret.

At 3:00 p.m., January 15th, war was declared, and the two opposing forces went into action. All combat airplanes were equipped with gun cameras. Batteries of ground gun cameras were used as anti-aircraft defenses of the airdromes, and alert Pursuit patrols took off upon the approach of enemy airplanes. Bombing raids and Pursuit fights were occurring continuously day and night throughout three days of battle. It was interesting to note that the newspapers of Sarasota and Bradenton were intensely pro Red and those of Lake City and Auburndale intensely pro White. On January 17th, peace was declared. The Wing then moved to Tampa, where the 20-hour check was made and the troops given a day of rest from the strenuous duties of the past week.

On January 20th, the Wing again became two opposing air forces and the front line extended from Madison, Fla., to Drifton, Fla. The Red Force commander placed his air force at Lake City, Fla., and the White Air Force commander concentrated at Valdosta, Ga. Each air force kept Pursuit patrols on the lines from daylight until dusk each day. In raids across enemy airdromes and strategic centers, all planes were required to cross the designated front lines. After three days of warfare in this locality, the Wing concentrated at Mobile, Ala., for a 40-hour check.

Before leaving the Valdosta-Lake City area, the cold wave which struck the United States at that time caused both warring factions intense shivers, and the Sibley stoves were needed for the first time on these maneuvers. The ingenuity of Corporal E.J. Zetwo came to the fore when he was cold and saw several drums of drained engine oil. He took an oil can and attached to it a

metal hose and draincock. This was suspended above the Sibley stove and the oil permitted to flow through a hole in the Sibley stove on to a piece of wood or brick or wire mesh. The drain-cock regulated the flow of oil to give the heat desired. This method was found to be highly successful and soon all stoves were similarly equipped. Other difficulties due to the change in temperature, such as cold weather starting of engines were encountered and means of overcoming them are now the subjects of reports made in connection with the maneuvers.

Upon arrival at Mobile, Ala., it was found that in the freezing weather an efficient performance of the 40-hour inspection could not be made in the open. The type of operations (continued days of intense aerial combat operating out of rough war-time airdromes) necessitated the utmost in the 40-hour check.

Skushan Airport, New Orleans, offered the use of heated hangars, and the Wing moved to New Orleans, where the 40-hour check was accomplished.

On February 1st, war was again declared between the Red and White air forces, with the front lines extending roughly north and south midway between Maxwell Field, Montgomery, Ala., and Fort Benning, Ga. The Red Air Force used the Montgomery Municipal Airport and Maxwell Field, while the White Air Force used Columbus Municipal Airport and Lawson Field. At 3:30 p.m., February 2nd, the Wing Commander declared peace and directed the groups to return to Langley Field.

Sufficient air transport was not available to carry field equipment for all units. One Pursuit Squadron, the 33rd, was partly equipped and moved largely by air. The Bombardment Group carried all essential field equipment by air in their planes. One Pursuit Squadron not equipped with aerial transportation had to rely entirely on its truck convoy. Duplication of equipment and of trucks was necessary in order that, in long jumps, the squadron would have sufficient tentage and equipment for housing while the second set of equipment was being brought to their place of encampment. The day preceding movement of the squadron, the advance echelon of trucks with one complete set of equipment moved to the new location and set up camp. The rear echelon struck camp and moved forward after the squadron departed. This system worked satisfactorily except for the consideration of doubling the amount of equipment needed and the number of men necessary to transport it. This method of leap frogging is thought to be the best way of keeping an Air Corps unit, which is constantly moving, properly supplied with the necessary impedimenta where air transport is not available.

The supply of rations was made by air

from the advanced base at Maxwell Field. All food could have been so drawn and flown to the squadrons in the field. To insure the best possible field messes, however, fresh beef, fresh vegetables and milk were purchased locally.

Only those supplies which had a normal expectancy of being used in a 48-hour period were carried. Requisitions were made for items needed, and upon consolidation were filled at Maxwell Field and returned by the Wing transport planes. Strict accounting of all parts in the crew chiefs' kits and all requisitions were kept for use in preparing tables of necessary supplies for field maneuvers.

The duties of the men and the number of men required were likewise cataloged and a strict accounting was kept of man hours on the various duties involved. These data are now the basis of tentative Tables of Organization for a Wing at minimum strength in the field for the maximum number of airplanes involved.

All the cities at which the Wing or units thereof concentrated were extremely hospitable to the "Visiting Firemen." Courtesy cards to Country Clubs, Yacht Clubs, Athletic Clubs, etc., invitations to parties, dances and receptions were showered upon the Wing personnel.

The personnel of the 2nd Wing are to be congratulated on their performance. They flew a month of intensive combat maneuvers over various types of terrain under various weather conditions out of airports that compared with those of war. With 3753 flying hours of this type of training, not a single serious accident occurred, and no fatalities or injuries of even a minor nature were involved. There was only one forced landing and that, fortunately, over an airdrome.

Major Jones and his staff are now engaged in comparing the gun camera films and combat reports of each contact of the opposing air forces. The winning air force and the individual field exercise aces will be announced shortly.

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WASHINGTON NATIONAL GUARD AIR CORPS IS UP AND DOING

Felts Field, Spokane, Washington, the station of the 41st Division Aviation of the National Guard of that State, is the most northwestern Air Corps station in the United States.

In his first contribution to the News Letter, the Correspondent starts off by saying that it is a "Million Mile Cross-Country" flying organization, with the finest military hangar in the country. He backs up this statement with statistics which show that between July, 1934, and January 15, 1935, pilots of the 41st Division Aviation piled up more than 1,000,000 miles in cross-country and Weather Bureau flights, in addition to regular Sunday training schedules.

Touching on the hangar, he says:

"Taking an early advantage of the President Roosevelt public works program, officers and friends of the Division Aviation launched an active campaign that resulted in the construction of a \$102,000 brick and tile hangar, with 20,000 square feet of floor space.

Designed to match the present administration building, the new hangar is constructed of rough face artistic brick. Although a difficult problem was presented in the roof design, there are no posts, or other roof supporting members on the floor of the hangar. The roof truss is of a bridge design sufficiently sturdy to carry the 20,000 square feet of roof that is sometimes covered with snow. It is the largest truss of its kind in the Northwest.

The interior finish is of tile, with a specially prepared light red stain-less floor. A traveling crane hoists heavy and bulky freight shipments to the store room and parachute balconies,

and makes the changing of motors easy. There are a series of floor lights for night mechanical work.

Large electric doors, 25 x 180 feet, travel on tracks on the field side of the hangar, making it possible to move a particular airplane to the field without moving other snips. In front of these doors is a concrete apron 100 x 200 feet, with a concrete taxi-way to the field. A separate gas and oil house is at the east end of the hangar, which is heated with oil.

Numerous Regular Army Air Corps officials, visiting Felts Field, have declared the hangar to be the finest they have ever inspected."

Reverting to the subject of flying, the News Letter Correspondent says that, flying across the newly established Northern Transcontinental Airway, and returning via the central route, three Douglas O-38E's flew 243 hours and 15 minutes on the trip. Commanding the flight was Major Robin A. Day, Regular Army Instructor; Captains Claude Owen, Robert Owen, Lieuts. Hillford R. Wallace, Ellsworth C. French and Sergeant Bill Finch.

On the flight to Florida were five ships, totalling 377 hours and 55 minutes flying time. More than 8,000 miles were covered on this trip. Returning north from the "Sunny South," the flight encountered sub-zero weather that made it difficult to start the motors at Reading, Calif., where the ships stood out all night.

On this flight were Major Day, Captains Claude Owen and L. Walters, Lieuts. Enier Malstrom, Dale S. Swartz and Carl Schirmer, and Sergeants Benschotter, Hansen and Erickson.

REPORT OF FEDERAL AVIATION COMMISSION (Continued)

With respect to the recommendation that there should be closer coordination of Army and Navy experimental and development work, and that the National Advisory Committee for Aeronautics should be more largely used as an agency for such coordination, the Federal Aviation Commission states that if the experimental procurement programs of the air arms of the Army and Navy are to be expanded, the interest of economy obviously requires the closest coordination of plan and practice between the two services.

It seems important that the agencies of coordination now in existence should be strengthened, and that the definite allocation of a particular undertaking to one Service or the other, to be carried on in the interest of both, should be a common rule.

Suggestion is made that increased use be made of the facilities of the National Advisory Committee for Aeronautics, if necessary through the formation of sub-committees of technically expert representatives of the various government departments interested and with all non-governmental members excluded. Where work such as the development of high-powered engines or the study of new types of aircraft structure is to be carried on, the laboratories of the National Advisory Committee always and necessarily play a large part in the preparatory research. The general program of aeronautical development to be carried on by the Army and Navy ought to be planned as a whole and its parts allocated with the participation of selected National Advisory Committee personnel and perhaps of other interested governmental agencies.

While the Services are perfecting improved means of coordinating the developmental work, it would seem well for them to perfect also closer agreements upon many matters of technical detail where present differences of practice appear unnecessary and irritating. The attention of the Commission was called to many instances of differences of practice between the Army and Navy in the checking of aircraft designs, in the specifications for standard materials, and other kindred matters. In the particular case of analyzing an aircraft structure for strength the Army, Navy, and Department of Commerce now require not only different factors of safety but totally different methods of calculation. The manufacturer who wishes to build aircraft for both Services and for the commercial market must either maintain three separate engineering staffs or train one staff in the application of three alternative methods. The Army and Navy have held joint conferences on some of these mat-

ters for a number of years and much progress has been made, especially in standardizing specifications for materials. While it is not desired to belittle what has already been done, the hope is expressed that much more can be accomplished in the future. The arrival at an inter-Service agreement on every possible point should be regarded as a major responsibility of all the personnel concerned.

In recommending the temporary attachment of a few officers of the Army and of the Navy to civil activities, and especially to air transport, the Commission states that the experience of the past winter furnished a forceful evidence of the generally incomplete comprehension by military personnel of the nature and quality of present air transport operations. Though there is a fundamental difference between transport and military flying, and hence they should be kept quite separate in administration, the experience of the transport lines in maintaining regular operation against all manner of difficulties contains a great many lessons useful for the military and naval Services.

It has been suggested that the Army and Navy should take advantage of transport experience by periodic assignment to actual places in transport organizations. It has been specifically proposed that Army and Navy pilots serve as co-pilots on air lines. That appears so undesirable from both civil and military points of view as to be virtually unworkable. If transport flying is to command public confidence it must have an integrated personnel under a unified discipline. The pilot must know the co-pilot and learn to trust him. The co-pilot has a variety of duties about the plane which have nothing to do with the actual operation of the controls, and for which he requires special training quite apart from that given him as a prospective first pilot. It is found inconceivable that officers of the Army and Navy could be fitted into these places without general loss of efficiency and wreckage of the morale of all hands.

It seems preferable and distinctly desirable that selected officers with special equipment for the work should be assigned to make study of special phases of transport operation. Such studies should be extended to cover other civil activities of possible military interest, such as those of the major flying schools. It ought to be of marked advantage to detail half a dozen experienced engineering officers from each Service to devote a few months to an intensive study of air line maintenance bases and their methods. A limited number of officers might properly fly

as guest pilots on transport lines, but officially taking their places in the plane as passengers, and changing places with the co-pilot at intervals during flight. It would naturally become the obligation of the officers who had been assigned to any such study to give the Service the benefit of their experience by memoranda discussing particular phases of civil flying from the Service point of view and stressing whatever they might have discovered that was new and possibly useful to the Service, and by lectures at Service schools. There are so many specialties in which Army and Navy air officers might be well trained and so many subjects of which special study by selected groups would be profitable, that there ought to be particular interest in anything that can be done to improve the machinery whereby special knowledge gained by a handful of officers can be disseminated throughout the entire Service as a leaven.

In making the recommendation that the War and Navy Departments should make reasonable use of facilities of civil aircraft repair stations for repair and service work on military and naval aircraft, the Commission believes that military aviation would gain from a closer association with civil aviation enterprises and a larger use of their facilities. The Commission was informed that it has been the uniform practice of the Army and Navy, except in extraordinary emergency, to depend entirely upon their own facilities for aircraft repair and overhauling work. Each service has certain major depots to which aircraft are flown for overhauling and to which damaged machines are commonly shipped, sometimes over very long distances. The practice of certain European air forces, especially that of Great Britain, of making exclusive use of industrial facilities for overhauling and repair work has not appealed here. It has even been the rule for military aircraft proceeding transcontinentally to keep away from the established commercial airways in order that landings may be made at fields with permanent military installations and that the purchase of any supplies from civilian sources may be avoided.

While this last course certainly produces a certain economy, it seems unfortunate to alienate the Service personnel from an acquaintance with the best equipped airways of the country, of which regular use would unquestionably be made for moving military equipment in the event of war.

While realizing the administrative difficulties, it is felt that it should be possible in many instances to arrange with advantage to have civil service stations, of which there are now 151 approved for quality and periodically

checked by the Department of Commerce, do mechanical work on Service planes and engines. The preponderance of testimony from witnesses at once competent and disinterested seems to be that the quality of the work done by the best civil repair stations is quite in the same class with that of the Army and Navy shops.

Recommending that the maximum term of active service with regular forces on the part of Reserve pilots graduated from the Army and Navy training schools should be increased to at least three years and perhaps further, the Commission points out that another problem common to all military air forces is the unusual form of the promotion curve and the tendency to stagnate promotion. It has been the common experience, at least in the English-speaking countries, that airplanes should be commanded by commissioned officers and that enlisted men should with rare exceptions be used only as second pilots and in limited numbers even in that capacity. As a consequence there is an abnormally large need for officers in the lower ranks in aviation. At the same time it is desirable that such ranks as that of major and lieutenant-colonel be reached by men still young enough to fly actively and well. No system of promotion dependent on seniority will accomplish the two results. In an air force with a straight seniority system, even though there be no war-time-accumulated blocks of personnel to reckon with, officers may expect to reach the rank of major or its equivalent after twenty years or more of service, and then to progress through that rank and those immediately above it with giddy rapidity.

An appropriate selection system can of course produce any sort of relationship of rank to age that may be desired, but it will attain the results desirable in the Air Corps only at the expense of a very drastic elimination of a large proportion of officers below forty years of age, men who entered the Service expecting to find a career there. Whether or not selection is employed, it is understood that it has been the practice of certain European air forces to give short service commissions good for only a limited period, their recipients fully understanding that they must expect to return to civil life at the end of their fixed term. The British system, providing for such commissions good for a maximum of six years and for a possible renewal of five years thereafter, is particularly interesting for comparison with our own in that, like ours, it is not built up in peace time on a conscript basis.

Supplementing the problem common to all air forces, the United States Navy

has a special one. All the officers commissioned in the regular Navy in peace time come from Annapolis. Experience has shown that the severity of the requirements of aviation are such that only a little over 25 percent of Annapolis graduates can qualify for aviation duty. Since not all those who might be able to qualify actually apply for flight training, and since some who have applied and qualified subsequently withdraw or are removed from aviation because of unfitness, it seems to be impossible to expect that more than twenty percent of the regular officers in any rank at any given time will be fully qualified naval aviators. This is not enough to meet the demands of the Service, which will call, under the new naval program, for 700 aviator lieutenants out of a total of 2,266 officers commissioned in that grade by 1941 if the existing program is carried through.

The only recourse for the Navy then seems to be the short-service commission or its equivalent, and the same device ought to be very helpful in ameliorating the promotion problem in the Army Air Corps. Both the War and Navy Departments accept something of the sort as necessary, at least as a temporary expedient and perhaps as a permanent measure, and representatives of both have indicated their hope that they may be able to take Reserves into the regular Service for a term of several years of active duty. It is understood that a three-year term after graduation from the Service flying schools is now under consideration, and recommendation is made that everything possible be done to facilitate such an arrangement and that whatever new legal authority may be required be extended.

It has been suggested that an even longer term would be desirable to provide for a longer period of really useful service after the officer has had a chance to become a fully effective unit in a squadron. It appears that a longer term might be recommended if it were not for the fear that if reservists remained on active duty for more than three years there would be built up behind them an almost irresistible pressure to enable them to stay there indefinitely. No doubt there would be a strong desire on the part of many of the men who came into the Service in such fashion to make it a permanent career, and it seems to be a fact that the Royal Air Force has experienced just such pressure, but the Commission cannot accept it that it is impossible to enforce rules made by the Services with the authorization of the Congress and definitely announced in advance. The longer the term of service the smaller the number of men that will have to be turned out each year, the more fully trained they will be, and

the better will be their chance of finding employment in civil aviation. "Our own inclination," the Commission asserts, "from what we have been able to learn of this problem, is to look with favor on an authorization for a maximum of as much as four or five years of active duty after graduation from flying school. The typical Reservist would then be returning to civil life, in the number of about 200 per year from each Service, approximately at the age of 28 and with over 1,000 hours of difficult and disciplined flying to his credit.

Though we have no doubt of the possibility of getting plenty of applications for such duty from men excellently qualified to perform it, we feel that to make it more attractive and to do justice to those who embark upon it there should certainly be offered something in the way of a dismissal salary at the end of the period. Though we have no definite recommendation to offer, we have thought in terms of continuing the officer's regular base pay for from six months to a year after his return to civil life to cover the period in which he is re-establishing himself there."

Recommending that the aviation Reserves, both of the Army and Navy, should be materially strengthened and should receive a higher priority than they at present enjoy in the allotment of funds, the Commission states that in war against a major power our air forces would feel an almost instant need for the mobilization of at least twice, and in the Army probably at least three or four times, their regular personnel. The numbers immediately mobilized in full readiness for duty would have to be backed up, in order that military effort could be carried on, by a Reserve of some additional thousands of qualified pilots who could be made ready for full service within a few weeks. As the Commission has studied the present status of the Reserves it has seemed to that body that this problem has been faced on so small a scale as scarcely to constitute more than a working model. The Navy has a total enrolled Reserve of 481 officer pilots, of whom 251 could be considered as ready for immediate duty. The Air Corps lists a total of 3,865 Reserve pilots, of whom 1,450 are classified as Group I and presumably ready for immediate action, but even the Group I pilots have been restricted by shortage of Reserve funds to a maximum of four hours' flying a month and in one year to only two hours a month. Even the present amount of flying time is less than the minimum necessary for real military fitness. The funds for Air Corps Reserve flying operations seem to have been spread so thinly that a large number of men have received a very small amount of flying practice and still less training of a truly military nature. It seems that the first task of the Army

Air Corps in this connection should be to comb over its present lists and select those who are, and are likely for some years to remain, genuinely qualified for active Service flying.

In establishing priorities in a Reserve force, it is taken as self-evident that the most urgent concern must be with the first-line group that stands ready to step directly into tactical organizations on the day of a declaration of war. The Navy has what seems to be an admirable organization of such a reserve in its 31 Fleet Reserve squadrons, numbering 251 officer pilots, and organized to fly as a unit for some 45 hours a year in the fulfillment of a syllabus of military exercises drawn up by the Navy Department, and to put in a substantial amount of additional practice under the direction of the unit commander. These organizations seem to be close to the ideal of military readiness, as do the nine squadrons of the Marine Reserve which are similarly organized, but their numbers are far inferior to any possible war-time need for immediate service. The specific need here seems to be for additional funds for Reserve purposes.

In the Air Corps, as previously indicated, the problem is not so much with increase of numbers as with improving the quality of the training given to a selected group. Every effort ought then to be made to assemble a group of chosen personnel into tactical units and to give them at least 60 to 100 hours of flying per year on military airplanes and doing military exercises. Such units, the cream of the present Group I, should have full priority of claim on any aviation Reserve appropriations. In this connection, though appreciating the distinction that exists between National Guard and Organized Reserve in the general national defense plan, it would seem advantageous to make a larger use of National Guard air units and so to decentralize the Air Corps Reserve to a greater degree than at present.

At present there are 19 National Guard squadrons in as many different states. They have a splendid record of efficiency, but they are limited by War Department decision to the single function of observation. The Commission accordingly suggests that further study be given to the classification of squadrons and to the possible desirability of assigning additional squadrons with more varied functions to such states as care to provide adequate buildings and sites for them, with subsequent transfer of personnel from the present Organized Reserve to the squadrons so created.

Whatever the precise machinery of organization that may be chosen and without attempting to usurp the function of

the War and Navy Departments by specifying exact numbers, it seems conservative to say that the aggregate of effective air force Reserves should be at least double what it is now. The training, at least for the Army, should be far more extensive and continuous than it has been at any time in the last ten years. A considerable part of the practice flying time might be taken, at least by the second-line Reserve, in light civil aircraft rented from commercial operators, the Service authorizing the payment of a fixed sum per hour for their use.

Flying under those conditions ought to cost less than one-third as much per hour as was told it now costs to operate Army aircraft for the Reserve. The Baker Board recommended "the purchase of small, inexpensive airplanes of good performance adequate for training pilots in cross country and night flying" for the Regular Army. The use of such economical equipment, preferably by rental rather than by purchase, for the Reserve seems even more desirable.

It is realized that this is a matter of finding funds with which to work, but the issue seems so important, and the need for well-trained Reserves in the event of war so great, and the dependence of the regular Services upon them so immediate, that the recommendation is made that the Reserves be given a distinctly higher priority than they now enjoy. At the same time the possible usefulness of special Assistant Secretaryships for Reserve in both Service departments is suggested, in order that the needs of the Reserve's development may be under constant sponsorship by an official of high rank who may always be heard in the Secretary's councils.

To be continued.

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FLYING BY ARKANSAS NATIONAL GUARD

"We were impressed some weeks ago," writes the *Pew* Letter Correspondent of the 154th Observation Squadron, Arkansas National Guard, "by a report of the National Guard Bureau which aggregated and classified the total time flown by the various National Guard Squadrons. What interested us most was the relatively large proportion of the time of a number of squadrons that was put in performing tactical missions of one kind or another. We are very much interested in getting any and all information we can from these squadrons as to the type of flying done, the manner in which the missions are executed, whether any particular type of mission is favored and, if so, what stimulates the favoritism. As for our own squadron, being located on a Department of Commerce Airway, we have the use and benefit of the Airway's radio beam and

considerable time has been spent in blind beam flying. We have a front gun target set up on our airport which we use to practice simulated front gunnery. We do some mapping and photography.

If any of the squadrons have any new

ideas or innovations for diverting a large proportion of the flying time toward tactical missions, we would like to know about them, using the Air Corps News Letter as a medium.

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HENSLEY FIELD TAKES ISSUE WITH MAXWELL FIELD

The News Letter Correspondent from Hensley Field, Dallas, Texas, invites attention to the item "Heavy Air Traffic at Maxwell Field," which appeared in the News Letter of Feb. 1st, wherein the Operations Dispatcher reported that a total of 119 airplanes arrived at and departed from Maxwell Field between January 1st and 15th.

"It is believed that Maxwell Field will have to take a back seat when comparing heavy airplane traffic with Hensley Field," asserts the Correspondent from the latter station, and he then goes on to say:

"Records of this station show that a total of 105 visiting airplanes arrived at and departed from Hensley Field between February 1st and 5th, 1935; that a total of 434 visiting airplanes arrived at and departed from this station during the period from January 1st to February 5th, 1935; that during the calendar year 1934 a total of 2,758 visiting airplanes arrived at and de-

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parted from this station, with only 16 days during the entire calendar year in which no visiting aircraft arrived at or departed from this station, and with a maximum of 153 visiting airplanes in one day; that during the calendar year 1933, a total of 2,535 visiting airplanes arrived at and departed from this station, with only 15 days during the entire calendar year in which no visiting aircraft arrived at or departed from this station, and with a maximum of 113 visiting airplanes in one day."

Not content with letting the matter rest then and there, the Hensley Field Correspondent goes on further to say:

"It is believed that over a period of any one year the number of aircraft (Army, Navy and Marine Corps only) visiting Hensley Field is greater than that at any other Air Corps station. In any event, a comparison of records in this respect with any other station claiming heavy air traffic in visiting aircraft, would be interesting."

WASHINGTON NATIONAL GUARD AIRMEN EXHIBIT KEEN INTEREST IN AIR FRONTIER DEFENSE

According to the News Letter Correspondent of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane, Wash., intense interest in the National Air Frontier Defense program as first proposed by Representative Wilcox, of Florida, and amended recently by the War Department's legislative proposal, is being exhibited by the officers of this organization.

For the purpose of keeping themselves fully advised with all proposals to strengthen the nation's air defense, and particularly in the Northwest, the officers are meeting at regular weekly luncheons to discuss and consider all Air Corps proposals before Congress.

Interest in these matters has been materially stimulated locally by the present membership on the Senate Military Affairs Committee of Washington's junior Senator, Mr. Lewis Schwallenbach, Past State Commander of the American Legion. Senator Schwallenbach is known to favor a strong military policy, and has communicated with local National Guard Air Corps officers since entering Congress.

As between the Wilcox and War Department proposals, the local Air Corps officers favor the War Department plan, "because it provided for a GHQ Air

Force," which they regard as the first real move toward proper recognition of the Air Corps. However, full credit is given Representative Wilcox for bringing out the first real air defense program that has ever attracted national attention and support.

In all of their considerations, the local Air Corps Guardsmen are taking a firm position that the building of an air defense should be left entirely to the Office of the Chief of the Air Corps and the War Department. It is their contention that the project is far too important to the future of the nation to be weakened by political pressure.

The News Letter Correspondent adds that at this time the Pacific Northwest is without practically any air defense, there being about 12 Army airplanes in this vicinity. It is pointed out that air defense in the Northwest is needed as a means of assisting in the protection of Alaska; that the Boeing Aircraft factory in Seattle, and the Navy Yards at Bremerton are without protection, to say nothing of the Puget Sound region in general.

It is because of these important situations that the policy of a properly developed air defense has been adopted at the luncheon meetings.

19TH COMPOSITE GROUP MAKES ITS BOW ✓
By the Albrook Field Correspondent

The 19th Composite Wing, which will celebrate its first birthday on March 17th, makes its initial bow to the readers of the News Letter. This Wing constitutes the Army Air Corps contribution to the defense of the Panama Canal Zone, and is commanded by Lieut.-Col. William C. McChord. The Wing headquarters is at Albrook Field, which is also the station of the 16th Pursuit Group, commanded by Major Robert L. Walsh. The other major unit of the Wing is the 6th Composite Group, commanded by Major Louis H. Brereton and stationed at France Field.

The first of January this year marked the beginning of a period of intense activity for the newly organized Wing. These intensive operations, however, were not caused by an unexpected order or condition but resulted from the careful planning by the Wing Commander and staff to take full advantage of the brief dry season. This season lasts approximately from the 1st of January to the 31st of March, and only one of the three months - January - is fully available to the Wing for its training. February is devoted to sector maneuvers in which the 19th Composite Wing or its elements are required to participate, while the third dry month - March - is reserved by the Department Commander for his maneuvers. Training exercises scheduled for the remaining months of the year are subject to frequent weather interruptions. When units of the Wing move a short distance from their home airdromes during the wet season they are likely not to return for many days. The Wing training program, therefore, called for combined operations for practically every week day of the month of January.

An interesting feature of the program was a four-day operation, during which the Bombardment and Observation units, commanded by Major Brereton, occupied an airdrome at the new gunnery range at Rio Hato, with a free hand to simulate bombing raids against vital points in the Canal Zone. This gave the 16th Pursuit Group an opportunity to try out many and varied forms of defense, one of which it would be necessary to adopt if called upon to defend a line approximately 45 miles long with approximately 33 Pursuit airplanes.

These maneuvers afforded valuable experience and gave the participating units an opportunity to improve communications and the technique of their particular branch of aviation. In the critique which followed the exercises, the Wing Commander expressed himself as being highly pleased with the progress made by the two groups and commended not only the flying but also the maintenance personnel.

Aerial reviews had a part in the combined training program for the Wing. One inspection and review was held at Albrook Field for Major General Harold B. Fiske, the Department Commander. Gen. Fisk was accompanied on the inspection and in the reviewing stand by Brigadier General John W. Gulick, the Pacific Sector Commander, and by distinguished officials of the Zone Civil Government and several foreign diplomats.

At the conclusion of the inspection and review, General Fiske expressed himself as highly pleased with the appearance of the aircraft on the ground and also with the ability of the Wing to pass the reviewing stand in a precise and orderly manner, despite the fact that the airplanes participating had such a wide variety of speeds and flying characteristics.

Another inspection and review of the entire Wing was held at France Field for Major General Lytle Brown, Commander of the Atlantic Sector. At the conclusion of the review, General Brown highly complimented Colonel McChord on the Wing's appearance and performance.

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MAXWELL FIELD ENTERTAINS CHINESE
AVIATION MISSION

Folding his arms and smiling engagingly, Colonel P.T. Mow, wiry young Chinese Air Corps Attache of the Nanking Government, stated that of all the U.S. Army Aviation posts he and his party visited within the last two weeks, Maxwell Field and the Tactical School offered greater opportunities for studying modern American methods of air defense. In fact, Colonel Mow was so interested in his inspection of the post recently and so anxious to prolong it that he declined to set a date for the party's departure from Montgomery, saying that he would leave when he had seen enough of Maxwell Field.

Colonel Mow is head of an official party from China on a tour of leading aviation activities throughout the United States and Europe. Other members of the Mission are Lieut.-Col. F.S. Liu, Major Y.T. Yeng, Messrs. C.F. Wang and E.S.K. Yen. The officers are all connected with the Chinese Army Air Corps, while Mr. Wang is an engineer and Mr. Yen is Secretary, both in the government service. The party has been in America, or "The States," as Colonel Mow said, about five weeks, coming here from Europe.

The Chinese officials arrived in Montgomery from Langley Field, Va., and their survey included Wright, Selfridge and Mitchel Fields. Barksdale and Randolph Fields are next on their visiting list.

AIR CORPS INSTRUMENT LANDING SYSTEM

By Marguerite Jacobs Heron

The year 1934 proved to be one of progress and activity for those interested in what is undoubtedly one of the Air Corps' outstanding developments - the Air Corps Instrument Landing System.

During this year its application to airplanes other than basic training types was proved practical, and thousands of successful landings were made with high speed, multi-motor Bombardment and Transport types with the sole aid of the system's installations.

Classes of Army pilots continued to be qualified in its use at Wright Field, the pilots finding it as simple in operation with faster landing speeds and larger airplanes and as uncomplicated as with training types. Installations were made at Langley Field and at the Newark Airport during the Army Air Mail activities, and plans for installation at other Air Corps fields were completed.

Later, the engineers installed equipment in a Bureau of Air Commerce airplane and placed at their disposal every means of making a thorough investigation of the system, as well as all the tests they desired. In October, 1934, the final decision of the Bureau of Air Commerce was made for the adoption of the Air Corps system as standard for commercial operation. The following is quoted from a letter from Mr. Eugene L. Vidal, Director of Air Commerce:

"Allow me again to express my appreciation for the splendid cooperation of the Army Air Corps and my sincere admiration of the engineering organization and technical skill which produced this wonderful development."

Since this time, five of the major airlines have sent pilots to Wright Field for instruction in the Air Corps system, and these men will in turn act as instructors to other pilots of their companies. Personnel of the Department of Commerce who will take charge of installations at commercial airdromes, inspection, and training of pilots have likewise been at Wright Field for instruction.

As noted in a previous issue of the News Letter, Captain Albert F. Hegenberger was awarded the Distinguished Flying Cross Oak Leaf Cluster in May, 1934, for his very valuable contribution to aviation in this development. It was an honor that likewise brought pleasure and reward to his associates in the development of the project. For it is a loyal and fearless group of officers and civilian engineers who have aided Captain Hegenberger in this signal success.

It is an interesting fact to note

that in the thousands of test landings made under the hood in the testing and developing of instrument landing equipment not a single fatality has occurred or even an accident of any moment to personnel or equipment. This in itself, we believe, is high tribute - but we touch wood, as one always should amid the uncertainties of living - as we say it.

Ed. Note: It may be of interest in connection with the above article, written by the Materiel Division Correspondent, who was a constant contributor to the News Letter in bygone days, and to whom we are glad to extend a hearty welcome, to quote from an article on the Army Air Corps Radio Blind Landing System, which appeared in a recent issue of the Air Commerce Bulletin, issued by the Bureau of Air Commerce, Department of Commerce.

It is stated in this article that, following a conclusive demonstration of the Army Air Corps blind-landing system at Langley Field, Va., participated in by Eugene L. Vidal and other Air Commerce officials, this system was adopted as standard by the Bureau of Air Commerce.

This demonstration "marked the conclusion of 11 months' work by the Bureau of Air Commerce in which various systems and modifications for blind landing were investigated and tested as applied to a Ford tri-motor transport type airplane, under the direction of Chester A. Snow, Jr. Tentative plans were immediately made for the establishment of this facility along a transcontinental air route together with its installation at one or more central points where commercial air line pilots may become familiar with its use. Invitations have been issued to several representative air lines to send selected groups, including operations and technical personnel and expert instrument pilots, to Patterson Field at Dayton, Ohio, to participate in individual demonstrations of the system.

A brief description of the demonstration on September 13 will help to explain the operation of the system in blind landing as well as the most valuable additional function served by its main element, the Kreusi loop radio compass as a navigational aid.

The party took off in the Department Ford from the Washington Airport, and a few minutes later tuned the radio compass receiver on the Richmond, Va., radio range station which is normally used for beam and weather broadcast. As the plane was swung into a heading directly toward the Richmond station, the needle of a small, round dial instrument in the pilot's cockpit assumed a vertical or zero center position. Subsequent devia-

tions of heading were immediately indicated to right or left, as the case might be, by corresponding deflections of the needle. By merely steering the airplane so as to keep this needle in its center position, test pilot W. A. Cutrell flew at all times with the certainty of an exact heading toward the Richmond range antenna. While on this flight use was made of the radio range transmitting station. The operation of the loop compass must in no way be confused with the normal use of the range beam. The radio compass is a homing device. It will operate on any type of transmitter or commercial broadcasting station within its frequency and power range. It makes no use of fixed radio beams, but continually indicates heading rather than position with reference to a fixed predetermined path and indicates with equal certainty from all points toward the transmitting station on which it is tuned. In short, the radio loop compass tells the pilot directly not where he is but where he wants to go.

About 10 minutes after take off from Richmond, the radio compass was tuned on one of the special landing transmitters at Langley Field. This transmitter is merely a low power broadcasting station equipped with a gas engine driven generator for power supply and a collapsible mast antenna. The whole outfit is compactly mounted in a small automobile truck of the light delivery type. Guided by radio loop compass tuned on this mobile transmitting station, the Ford airplane was brought directly over a predetermined point some 1,200 feet from the edge of Langley Field in position for an into-the-wind landing.

In all six hooded instrument landings were made, the party of observers being divided into two groups which by flying separately enabled each to witness the operation of the system both from the air and from the ground.

The party was most fortunate in being joined for the demonstration by Captain Albert Hegenberger, Air Corps, who flew in from Wright Field, Dayton. Captain Hegenberger, working under a special directive of the Secretary of War and acting in the capacity of project engineer with a small staff of civilian scientists, actually developed the system at Wright Field about 2 years ago. He personally acted as test pilot during the development's experimental stage, climaxing his work with a short solo flight completely hooded from start to finish, performed on the spur of the moment without special preparation of any kind. * * * *

In the Army Air Corps blind landing system use is made of two small automobile truck transmitting stations of

the type above described. In addition, each truck is equipped with a small secondary transmitter which, operating in conjunction with a second instrument located near the radio compass indicator on the airplane instrument board, causes a light to flash as the airplane passes over each ground station. Thus the pilot having arrived at a predetermined point by means of the radio loop compass, is informed of his arrival by the visual marker's light flash just described.

In actual operation the two trucks are driven to selected points on the road network surrounding the landing area, and assume positions along a line projected across the field in an into-the-wind direction. Whereas the relative distances of these positions from the field border may be varied to suit conditions of terrain, wind, etc., a convenient combination for most conditions with the Ford trimotor is 1,500 feet and 2 miles from the field border for the inner and outer stations, respectively. The pilot flying in by instrument from some distant point may, when within 30 or 40 miles, tune in on the inner station and fly directly to it by means of his radio loop compass.

His momentary arrival over the inner station is indicated by the light flash of the visual marker instrument. He immediately tunes on the different frequency of the outer station and flies to it by the same means. One or more interstation trips serve to accurately establish the desired into-the-wind course, which is then clocked on the directional gyro. In preparation for the final approach, the pilot lets down to approximately 300 feet as indicated by his sensitive altimeter, and heads toward the field, passing over the outer station at this altitude. Immediately on passing this station, the engines are throttled and the airplane by instrument is held in a power glide of such angle as to enable it to pass over the inner station at an indicated altitude of about 150 feet. Once the final marker light flash has been received, the pilot is through with radio loop compass and marker, and through with altimeter. Reverting to his directional gyro for course, he relies on his flight instruments to maintain the glide angle before mentioned.

In the Ford trimotor we have found engine speed of 1,150 revolutions per minute and air speed of 75 miles per hour producing a rate of descent of 400 feet per minute to be about the optimum desideratum. These figures, however, are by no means critical and may be varied within limits with almost equally good results. Contact is made usually lightly in a "wheel type" landing with tail slightly below line of flight position. The pilot, on feeling the contact, closes the throttles and as the tail drops of its own accord, is able to apply brakes

by reference to the directional gyro or to shorten the landing run.

It will be noted from the foregoing description that application of the system depends merely on the routine succession of logical steps which become progressively simpler in requisite technique as the more critical point of actual contact with the ground is approached.

Another noteworthy point in connection with the system is that the continual use of its main element, the radio loop compass, in routine navigation will automatically keep the pilot trained in large measure for actual instrument landings.

During the last 8 months in which the Bureau of Air Commerce has been investigating the applicability of the Army Air Corps system to commercial transport aviation, over 150 unassisted hooded landings have been made with the Ford trimotor at 5 different fields and in wind conditions ranging from calm to 12 miles per hour tail wind as well as in varying degrees of cross wind. It is believed that improvements on more modern airplanes, such as flaps, long-travel shock-absorbing units, pedal brakes and low speed controllability inherent in modern design, will materially simplify the blind landing operation.

As to ease and speed of pilot instruction in the Air Corps system, which also may provide a rough index of the periodic practice requisite to thereafter keep the pilot in training, the following is interesting: E.A. Cutrell, highly trained and expert instrument test pilot of the Bureau of Air Com-

merce, accomplished his first unassisted hooded landing after 1 hour and 15 minutes of flight training on an Army-type airplane relatively unfamiliar to him. Another pilot, not an expert in instrument flying and not in training, required just double this time. The Air Corps last winter operated a school in blind landing for their officers, in which graduation requirements were five unassisted completed consecutive blind flights. Flying time for completion of this course averaged about 10 hours, and at the time most of these students had received little if any instrument flying instruction.

The advantages of the standardization of a system usable alike by commercial and military aviation are too numerous and obvious to mention. Suffice it to say that both commercial air transport and Army Air Corps will be rendered tremendously more effective by this step.

It would be improper to conclude without detailing to some extent the wholehearted, public-spirited, and unselfish cooperation given to Air Commerce by the Army Air Corps in carrying out of this project. On two occasions in particular, first during the air mail emergency and secondly during their preparation for the Alaska flight, the Air Corps was called upon for equipment and the time of trained technical personnel which it could ill afford to spare. Even when most hard pressed, no job was considered too great, no request was refused. The splendid type of interdepartmental cooperation thus initiated augurs well for future air accomplishment."

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NEW WIND INDICATOR DESIGNED AT MATERIEL DIVISION

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

This indicator consists of a tetrahedron (four-sided figure), each side triangular in shape, which measures 36 feet from apex to stern, and 15 feet across the base of each side triangle. The unit is installed on a concrete base on the field and is so balanced and pivoted that the apex heads into the wind. A horizontal mast extending out from the apex increases the length and gives clearer definition, especially for night indication, since both the mast and the tetrahedron are outlined by means of 10-watt lights having special green hoods. For daylight visibility the left side is painted in international orange with black blocks at the edges and the right side is white

with black blocks.

The structure is of steel, covered with fabric. It is mounted on a concrete base and weighs, complete, 2100 pounds. The base is equipped with accessories for giving remote wind indication, especially useful in an operations office, for locking the indicator in any desired position, and for rotating indicator to desired position previous to locking. The last two features are used primarily for training purposes or for narrow fields where it is feasible to control directional landing.

This type indicator replaces the B-4A type and is practically ready for standardization.

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At Hamilton Field experiments are being conducted in the evenings now to test the new floodlights just installed on the ends of the flying field. In addition to the floodlights, Hamilton Field has a 100,000 candle power beacon light on its water tank.

COLD TEMPERATURE STARTING OF AIR CORPS ENGINES

By H. L. Carpenter

Considerable trouble has been experienced in starting airplane engines of 500 h.p. and over at sub-zero temperatures. Various methods can be employed, such as warming the oil by application of heat from without the engine, draining the tank at time of shut-off and refilling with hot oil at time of starting, or using a separate oil tank filled with very light oil and circulating this oil through the engine before shut-off. The first two methods, however, require special equipment and personnel which would amount to approximately 2500 pounds for a flight of 18 airplanes.

Since no data regarding the torque required, number of turns necessary, or rate at which the engine should be turned were available for a suitable heavy duty starter, an investigation was made at Wright Field, using a cold chamber and an Air Corps type GIV-1570-F engine. Tests extended through temperatures ranging from +150 F. to -20° F., and resulted in the following determinations:

a. Engine can be started on first revolution when cranked at a minimum speed of 70 r.p.m. down to +50° F. at lower temperatures, one to five revolutions at the same average rate are necessary.

b. Engine oil of sufficiently low viscosity only permits this accomplishment. Oil coolers should be used if necessary to prevent oil from overheating after engine has been started.

c. Engine must be primed at engine intake manifold directly over intake valves, the priming fluid being broken up by priming jets into as fine a spray as possible.

d. Carburetor must be designed to permit volume of fuel entering engine to be adjusted to full rich for starting, and "leaned" down to prevent "overloading" as engine warms up.

e. Ignition must be so installed to permit retarding, preventing back-firing, at low cranking speeds and must give positive spark at proper time. Battery ignition found preferable to magneto ignition for starting.

f. In order to maintain sufficient reserve energy in starter to turn engine one or more revolutions, the engine torque must be approximately 300 ft. pounds lower than that of starter clutch setting. To prevent failure of engine and starter parts, starter clutch shall never be set over a maximum of 900 ft. pounds breakaway torque.

In order to hold the torque required for engine turnover at a low value for low temperature starting, it was found

necessary to replace heavy oils with those of lighter S.A.E. ratings. Otherwise the torque increased at temperatures below +150° F. to such an extent that practically all energy in the starter was lost in the starter clutch. With the equipment used, it was not possible to measure the torque while engine was being brought up to speed, but this is being changed so that on future tests torque measurements will be taken by recording instruments on the dynamometer.

Present engines will fire while being turned over with present starters, but explosions are so weak that the engine cannot be kept running. This project is one which, since engines of larger horsepower are being developed, demands continued concentration on the part of the Materiel Division and cooperating manufacturers.

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HIGH GUNNERY SCORES FOR 15TH OBS. SQDN.

The pilots of the 15th Observation Squadron took the lead on the Airship Group pilots in average flying time, due to their participation in the gunnery practice at Chapman Field, Miami, Fla., where weather is "comme ca." In approximately five weeks all of the officers and combat crews of the squadron completed their firing, this period including the time required to transport personnel and equipment from and to Scott Field, Ill. Organization and station activities at its home field were maintained at the same time.

The Squadron is justly proud of its performance on the gunnery range. The scores turned in showed that of the pilots, 92.3% were experts; observers, 100% experts, and the 16 enlisted men selected for combat crews, 100% experts.

Of the 13 pilots firing the Fixed Gun course, 1st Lieut. R.O. Brownfield was high scorer with 873, followed by 1st Lieut. W.L. Ritchie with 853. High scorers among the 13 Observers firing the Flexible Gun Course were 1st Lieut. R.O. Brownfield with 1187 and 2nd Lieut. Gitzinger, Air Reserve, with 994. Private, 1st Class, S.L. Gross and Staff Sgt. M.G. Hall were high guns among the enlisted men firing the Flexible Gun course, the former's score being 996 and the latter's, 962.

The 15th Observation Squadron returned to Scott Field on February 17th, wearing broad grins, exhibiting much sun tan and being thoroughly satisfied with Chapman Field as a Gunnery Base. The proximity of Miami and Miami Beach was largely responsible for the satisfied

smirks is the biased opinion of the News Letter Correspondent from Scott Field.

HAMILTON FIELD AIRMEN TAKE OFF FOR PANAMA ✓

By the News Letter Correspondent

Fifteen pilots and 14 enlisted men took off from Hamilton Field, San Rafael, Calif., on the first leg of their training flight to Panama on Feb. 15th in four air transports. They flew to Rockwell Field to learn in ten days the new equipment, which includes controllable pitch propellers and the latest of radio sets. The flight will then proceed to Washington, D.C., via San Antonio, Texas, where one plane will remain as a replacement, under 2nd Lieut. Roy H. Lynn. Two Staff Sergeants to service this plane will also remain as replacements until the Panama Flight has been cleared at Miami, Fla.

Upon leaving San Antonio, the 10 Martin Bombers will be flown to the Nation's Capital to await orders for the official start of the main flight to the Canal Zone, involving a distance of over 2,100 miles.

Under the command of Captain Harold D. Smith, 31st Bombardment Squadron Commander, this routine training flight will give the personnel experience in long distance flying and navigation. It will also test speed, range, fuel and oil consumption of the B-12A Martin Bombers. With wide open throttles, these ten fast new Bombers will roar toward the equator at a cruising speed of approximately 200 miles per hour. One stop will be made at Miami, Fla., for the purpose of refueling, and then will follow a 1,100-mile flight over water to the Panama Canal.

A non-stop flight with Washington as the goal on the return will be the supreme achievement, should 817 gallons of gas suffice for the 2,150 miles. After reaching Washington, the flight will return to Hamilton Field, from which the personnel and airplanes had come. All of the participating personnel are from Hamilton Field with the exception of two Crissy Field officers, Lieuts. Richard C. Lindsay and William Ball, who are graduate navigators and will guide the airplanes over the 1100 miles of the Gulf of Mexico.

A list of the personnel participating in this flight was published in the previous issue of the News Letter.

The contrast flight to the one to Panama is the Cold Weather Test Expedition, in which the airmen, garbed like Eskimos, fight the rigors of snow and ice in temperatures that freeze the skis of their planes in a few minutes. King Winter has mantled the terrain with 42 inches of snow and has frozen the ice to 18 inches at Duluth, where 17 planes of every type that the American Army possesses, rest on the bay ice with skis

frozen to the ground. To release the plane, two men dig a trench from the middle of the ski back to the wheel. Then they saw the ski loose from the compact snow with a rope.

Such are the daily struggles which confront Capt. Arthur H. Hamilton, 1st Lt. Paul Kemmer and 2nd Lt. Birrell Walsh, as they combat the Klondike weather of the Northwest in their flight toward Great Falls, Montana. Six enlisted men who share the work and hardships of this expedition are Staff Sergeant Thomas B. Vinson, Sergeants Roy H. Coulter, George W. Hollowell, Ludwig Kurreley, Corporal Harvid Saeger and Private Jack Mathews.

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F L Y I N G B L I N D

By Albert D. Cannon

Crouched low in the cockpit of the little single-seater sat Cadet Josephus Jones. Beads of clammy perspiration hung heavily upon his youthful face. Into his eyes had come a light that seemed to cry out that the lad's mental state bordered upon desperation. The world beyond the confines of his cockpit was totally obscured; not even the glimpse of a single friendly star whereby he might get his bearings. His first real need for proper interpretation of his "Blind Flying Instruments," he had been so overwhelmingly confident of his mastery of them. Yet here he was, completely lost. Hours it seemed had passed since he had lost the "beam," and trying frantically to recall the exact wording of his text books. He was swinging in wide arcs attempting to again pick it up and to find his course. More than a reasonable amount of time for him to have reached his objective had elapsed, yet he was still flying on, God only knew where.

Suddenly the ship slid off on its right wing and settled into a tight spin. To the novice at the controls it seemed as if the whole world had settled right in the pit of his stomach. He could stand it no longer, so over the side he went.

Pushing back the cockpit cover, he stepped down to the hangar floor. Timidly he approached the instructor, saying: "Please, Lieutenant, couldn't we start this problem over again; I've never been in a Link Trainer before."

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Second Lieuts. Louis H. Gitzinger, Donald E. Philip and John W. Christner, Air Reserve, recently reported at Scott Field, Ill., for six months' active duty.

V-6732, A.C.

KELLY FIELD GRADUATES ANOTHER CLASS OF AVIATORS

February 20th was Graduation Day at the Advanced Flying School, Kelly Field, San Antonio, Texas, when 62 students who successfully completed the one-year flying course at the Air Corps Training Center, received their "Wings" and the rating of "Airplane Pilot." Among these students are six officers of the Regular Army, who were detailed to the Air Corps for flying instruction; two officers of South American countries, and 54 Flying Cadets. Specializing in the various branches of combat aviation were 22 students in Bombardment, 14 in Pursuit, 15 in Observation and 9 in Attack.

The six student officers were assigned by War Department Orders, just issued, as follows:

Second Lieuts. Harry S. Bishop, Coast Artillery (B); David N. Crickette, Field Artillery (B) and John M. Price, Infantry (A) to the Hawaiian Department.

Second Lieuts. Robert D. Landry, Infantry (P) and Samuel A. Mundell, Infantry (O) to the Panama Canal Zone.

Second Lieut. Charles A. Clark, Jr., Field Artillery (B) to the Philippines.

The 54 Flying Cadets are being assigned to various Air Corps tactical units for active duty under their Cadet status for the period of one year.

The two foreign officers who graduated, Captain Nelson L. Wanderley, Brazilian Army, and 2nd Lieut. Nicholas S. Davila, Colombian Army, will return to their native countries.

Flying Cadets who graduated as Attack Pilots are enumerated below, as follows:

James C. McGehee	Birmingham, Ala.
John F. Guilmartin	Midway, Ala.
David B. Kuhn	Texarkana, Ark.
Loris W. Moomaw	Santa Ana, Calif.
Boyd Hubbard, Jr.	Adair, Iowa
Arthur Y. Snell	Brockton, Mass.
Tom Bolton	Dallas, Texas
Podge M. Reed	Moody, Texas

Bombardment Pilots

Raymond V. Schwanbeck	Ash Ford, Arizona
Frank B. Scott	Little Rock, Ark.
Gerald L. Cherymisin	Alta Loma, Calif.
Joseph A. Thomas	Hollywood, Calif.
George F. Breck, Jr.	Los Angeles, Calif.
Lee B. Coats	Los Angeles, Calif.
Willis S. Marvin	Riverside, Calif.
Lawrence W. Greenbank	Washington, D.C.
David C. Barrow, Jr.	De Soto City, Fla.
Carlos J. Cochran	Topeka, Kansas
Clarence T. Edwinston	Topeka, Kansas
John B. Montgomery	Charlotte, N.C.
Arthur H. Rogers	Raleigh, N.C.
Anthony G. Eubanks	Corpus Christi, Texas
John H. Jeffus	Plainview, Texas
Marshall A. Elkins	Waco, Texas
Joseph H. Wilson	Payson, Utah
Stetson M. Brown	St. Johnsbury, Vt.
Walter J. Harrison, Jr.	Crozet, Virginia

Observation Pilots

Arthur V. Jones, Jr.	Los Angeles, Calif.
Lloyd A. Walker, Jr.	Los Angeles, Calif.
John L. Dufrane	Oakland, Calif.

Jesse A. Smith	Woodrow, Colo.
Tracy E. Walsh	Pensacola, Fla.
William L. Fernald	Tarpon Springs, Fla.
George S. Brewer	Arcadia, La.
Robert B. McClellan	Baton Rouge, La.
Francis H. MacDuff	Brockton, Mass.
William Q. Rankin	Gulfport, Miss.
Frank V. Haynes	Clyde, N.C.
Norman L. Feterston	San Antonio, Texas
Thomas M. Bartley, Jr.	Waco, Texas
John B. Cornett	Waco, Texas

Pursuit Pilots

Lucian N. Towell	Carbon Hill
John S. Chennault	Montgomery, Ala.
Willis M. Darnell	Little Rock, Ark.
George S. Buchanan	Palo Alto, Calif.
Ansell S. Williams, Jr.	Palo Alto, Calif.
Frederick W. West, Jr.	San Francisco, Calif.
William W. Jarrell, Jr.	Thomasville, Ga.
Frank E. Rouse	Boston, Mass.
Thomas E. Moore	Collettsville, N.C.
Frank L. Higgs	Columbus, Ohio
Baskin R. Lawrence, Jr.	Seneca, S.C.
Lawrence R. Olmstead, Jr.	Brownsville, Texas
Frank J. Bennett	Gretna, Va.

Note: Specialist Pilot Ratings of officer graduates - (A) Attack; (B) Bombardment; (O) Observation; (P) Pursuit.

Among the "Pursuiters" of the Flying Cadet graduates the name of John S. Chennault is noted. Here is a case of an Air Corps Pilot providing a new pilot for his branch of the service, for the father of this young man is none other than Captain Claire L. Chennault, of Maxwell Field, Alabama, leader of the well known Air Corps acrobatic trio who have amazed spectators at Air Races with their perfectly timed air maneuvers and whom the newspapers have termed "The Men on the Flying Trapeze."

It seems that, since young Chennault graduated as a "Pursuit" pilot, he is no mean hand at acrobatic flying and perhaps some day he may even surpass the startling aerial performances of his dad.

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OFFICIAL DEDICATION OF HAMILTON FIELD

The official dedication of Hamilton Field, San Rafael, Calif., has been set for May 5, 1935, when it is expected - so says the News Letter Correspondent - that 20,000 people will gather at the air base to see the massed flight of planes and to hear the dedication exercises. All the civic organizations in the Redwood Empire have announced their intention to make this social function the greatest that the Bay districts have witnessed.

The American Legion is also expected to contribute its share toward making this event a grand success.

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Word was received at Maxwell Field that Lt.-Col. R.H. Arnold, C.O., of March Field, with 40 P-26's. piloted by 25 officers and 15 cadets, would pay a call before the end of Feb. Maxwell Field plans to entertain the visitors in true southern style.

CHANGES IN COMPOSITION OF MARCH CLASS AT
RANDOLPH FIELD, TEXAS

The issue of the News Letter of February 1st gave the names of Flying Cadet appointees selected by the Chief of the Air Corps to comprise the class to begin flying training at the Air Corps Primary Flying School at Randolph Field, Texas, on March 1, 1935.

Since this list was published, the composition of this new class has undergone many changes, for various reasons. There has always existed a long waiting list of young men eager to take advantage of the flying training afforded at the Air Corps Training Center.

The selection of applicants for Flying Cadet appointment is governed by a policy which gives preference -

- a. To graduates of the U.S. Military and Naval Academies failing to receive commissions due to lack of vacancies;
- b and c, respectively, to enlisted men of the Air Corps and of other branches of the Regular Army who, at the time of appointment, have served at least 11 months;
- d. To officers and enlisted men of National Guard Air Corps units;
- e and f, respectively, to college graduates of Air Corps ROTC units and of ROTC units of other branches of the service;
- g. To graduates of recognized colleges and universities;
- h. To officers and enlisted men of the National Guard with at least 11 months' service;
- i. To students in Air Corps ROTC units who have completed their Junior year;
- j. To Reserve officers and members of the Enlisted Reserve Corps with at least 11 months' service.
- k. To students in good standing of recognized universities who have completed their sophomore year.
- l. To others.

In selecting the students for the March 1st Class at Randolph Field, it was possible for the first time in quite a number of years to include those applicants coming under the category of "k" as listed above. Some of the applicants who were offered a Flying Cadet appointment were eliminated when they failed to pass the physical examination. Others who had been on the waiting list for quite some time declined appointment for the reason that they had secured desirable employment in the meantime. A number of applicants had entered the holy state of matrimony, and the regulations say that "Candidates for appointment as Flying Cadets must be unmarried male citizens of the United States," so this provision of the regulations automatically eliminated them.

In this particular connection an incident was injected into the proceedings which some may consider amusing and others, tragic. The editor was told in good faith that one of the candidates who had joined the ranks of the Benedicts offered to divorce his better half in order to secure the appointment he had been so eagerly waiting for.

The names of the candidates added to the

March, 1935, Class, are listed below, as follows:

Thomas, Wm. McKinley	Rockville Center, L.I., N.Y.
Beatty, John C.	Azusa, Calif.
Beeman, Marshall E.	Los Angeles, Calif.
Brown, Nelson T.	Tulare, Calif.
Cobb, Marvin W.	Santa Barbara, Calif.
Ames, Kenneth G.	Bridgton, Maine
Armstrong, Robert D.	Cincinnati, Ohio
Avera, James K.	Austin, Texas
Ballou, George A.	Rowena, Ky.
Atkinson, Robert S.	Reno, Nevada
Boyd Clay Allen	Santa Fe, New Mexico
Boone, Dan E.	Oklmulgee, Oklahoma
Clutter, Bartley A.	What Cheer, Iowa
Clark, Murray F.	Clevis, New Mexico
Cantoros, Frank A.	Columbus, Ohio
Corrigan, Walter W.	The Dalles, Oregon
Davis, Francis Lyle	Grand Rapids, Mich.
Donicht, Harry Louis	Glencoe, Minnesota
Baile, Charles E.	Vancouver, Washington
Edgington, Leo F.	Salina, Kansas
Engene, Leonard	Bergen, North Dakota
Edwards, Albert E. Jr.	Deming, Washington
Finn, Hyder W. Ivt.	Hamilton Field, Calif.
Forrester, Bruce	Kansas City, Mo.
Gadton, Paul	Ayra, Texas
Geisness, Robert A.	Fort Angeles, Wash.
Gibson, Kenneth H. Pvt.	March Field, Calif.
Hardy, Claude	Emporia, Kansas
Heil, Boyce F.	San Antonio, Texas
Earris, Kenneth A.	Seattle, Wash.
Hamlin, Ancil	Whitley City, Ky.
Hogg, George Wm.	Fernald, Iowa
Johnson, Wm. F.	Fulton, South Dakota
Johnston, John M.	Kansas City, Mo.
Lessig, Cecil P.	Salina, Kansas.
LaPierre, Bruce H.	Cincinnati, Ohio.
Luetcke, Hilmer	San Antonio, Texas
Morris, Robert A.	Elkins, West Virginia
McKay, Leroy S.	El Reno, Okla.
Fatman, James E.	Hughes Spring, Texas
Scott, Robert D.	Long Island City, N.Y.
Sheffield, Wallace B.	San Anacario, Texas
Sailors, Robert E.	Champaign, Ill.
Sherman, Willard E.	Mc. Vernon, S.D.
Mathews, Marvin D.	Bay City, Mich.
Taylor, Philip L.	Williamstown, Mass.
Thompson, Zale, Jr.	Cambridge, Mass.
Wackwitz, Ernest F.	Rockville Center, L.I., N.Y.
Wade, David A.	Minden, Louisiana
Walker, David E.	Sacramento, Calif.

The following names of candidates were removed from the list of those making up the March, 1935, Class:

Adamson, George B.	Reno, Nevada
Ashworth, Walter V.	Hamilton, Mo.
Barton, Willie	Jefferson City, Mo.
Bates, Harvey C.	Marietta, S.C.
Blalock, Thomas L.	Jacksonville, Fla.
Brooks, Lawrence K.	Clayton, N.Y.
Brown, Marion Judd	Nevada, Texas
Browne, W. Robert	Dallas, Texas
Burns, Henry F.	Utopia, Texas
Burns, Virgil	Wakarusa, Indiana
Combs, Alton	Middletown, Ohio
Eads, Harold E.	Greeley, Colo.
Farmer, Bob L.	Plainview, Texas

Fisher, Walter S. Beebe, Arkansas
 Fortmann, Bernhard G. Pearl River, N.Y.
 Freeman, H. Hoyt Hartford, Conn.
 Freund, John L. Washington, D.C.
 Friar, William P. Florence, S.C.
 Harwood, Bruce L. Claremont, Calif.
 Hatfield, Fred A. Highland Park, Mich.
 Hobbie, Richard M., Jr. Montgomery, Ala.
 Hulvey, Charles N., Jr. University, Va.
 Johnson, Robert E. Omaha, Nebraska
 Kamb, Roy A. Mt. Vernon, Wash.
 Keene, Milton C. Pinckneyville, Ill.
 Kyle, Charles V. Cedarville, Ohio
 Lange, Ronald W. Duluth, Minn.
 Lathrop, Alfred B. Pasadena, Calif.
 Lee, Burton Donald Milton, Texas
 Mann, Robert Anderson New Market, Ala.
 Koett, J. Williams Pittsburgh, Pa.
 Maddox, Clifford D. San Diego, Calif.
 Martin, Francis J. Ottumwa, Iowa
 Martin, Richard F. Multnomah, Oregon
 McAllister, Remus G. Glendale, Calif.
 McCauley, George E. Los Angeles, Calif.
 McMillan, Edward B. Bay City, Mich.

Munford, R. Sims Waynesboro, Penna.
 Nail, Max Memphis, Texas
 Norris, John I. St. Joseph, Mo.
 Norton, Fred C. McMinnville, Oregon
 Oldham, Jack Ray Kansas City, Mo.
 O'Reilly, Patrick C. Eufaula, Okla.
 Parsley, Jarvis D. London, Ky.
 Peelle, Elbert Whittier, Calif.
 Petersen, Francis M. Ogden, Utah
 Purdy, Edward E. Meeteetse, Wyoming
 Chelton, Thomas J., Jr. Plainview, Texas
 Silversmith, Nathan Brooklyn, N.Y.
 Sommers, Paul H. Jefferson City, Mo.
 Spratt, Keith Ames, Iowa
 Stevenson, Marvin Lisco, Nebraska
 Stormont, James C. Pittsburgh, Pa.
 Stuck, Sanford W. Kansas City, Mo.
 Talkington, Perry C. Crystal Springs, Miss.
 Tomlinson, Joseph H. El Paso, Texas
 Trew, James L. San Diego, Calif.
 Wallace, Dwane L. Wichita, Kansas
 Wuerpel, Morris Attleboro, Mass.
 Yaggy, Edward E. Hutchinson, Kansas

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UNITED STATES GOVERNMENT INSURANCE

The following information relating to Government Insurance has been furnished to the News Letter through the courtesy of the Veterans Administration, Washington, D.C., and is published as being of vital interest to Air Corps personnel:

"Officers and enlisted men now entering the active service under the War or Navy Department, or Coast Guard, are entitled to apply for insurance in multiples of \$500, not less than \$1000 or more than \$10,000, within 120 days from date of enlistment or entrance into the active service and before retirement, discharge or resignation.

There are seven different plans of insurance provided by the Government - Ordinary Life, 20 and 30 Payment Life, 20 and 30 Year Endowment, Endowment at age 62 and Five Year Level Premium Term Insurance. Government Insurance provides for the payment of benefits in the event of total permanent disability and death and the premium charged is the net rate according to the American Experience Table of Mortality with interest at three and one-half per centum per annum.

Total Disability Insurance, providing for the payment of benefits in the event the insured is totally disabled as the result of disease or injury for a period of four consecutive months or more, may be included with any of the plans of insurance provided, upon application, proof of good health satisfactory to the Administrator, and the payment of the necessary premium. This additional insurance may also be included in policies now in force, and is independent of any disability clauses contained in such policies.

Veterans of the World War who served in the Military and Naval Forces of the United States at any time from October 6, 1917, to July 2, 1921, who have heretofore applied or been eligible to apply for Yearly Renewable Term (War Time) Insurance, or United States

Government Life (Converted) Insurance may now be granted insurance in multiples of \$500, not less than \$1000 or more than \$10,000, upon application, proof of good health satisfactory to the Administrator and payment of the required premium. The maximum amount of insurance available is \$10,000, including any amount now in force or previously surrendered for cash."

If application is made for Government Insurance within 120 days after the applicant enters the service, no medical examination is required. Veterans of the World War applying for Government Insurance must undergo a complete medical examination. This applies also to all applicants for the Total Disability Insurance.

United States Government Life Insurance is free from restrictions as to residence, travel, occupation, military or naval service.

The low rates on Government Insurance are shown by the following extracts from the Premium Tables.

ORDINARY LIFE Monthly Premium per \$1,000 Insurance		Level Premiums for total Disability Provision when attached to a Life or En- dowment Insurance Policy for \$1,000 bearing the same effective date.	
		ORDINARY LIFE - FIVE YEAR LEVEL PREMIUM TERM (Premiums payable to age 65)	
Age	Monthly Payment	Age	Monthly Payment
17	\$1.08	17	\$6.12
18	1.10	18	.13
19	1.12	19	.13
20	1.15	20	.14
21	1.17	21	..14

Age	Monthly Payment	Age	Monthly Payment
22	\$1.20	22	\$0.15
23	1.23	23	.15
24	1.26	24	.16
25	1.29	25	.17
26	1.32	26	.18
27	1.35	27	.18
28	1.39	28	.19
29	1.43	29	.20
30	1.47	30	.21
31	1.51	31	.22
32	1.55	32	.23
33	1.60	33	.24
34	1.65	34	.25
35	1.70	35	.26
36	1.76	36	.27
37	1.81	37	.29
38	1.88	38	.30
39	1.94	39	.31
40	2.01	40	.33
41	2.09	41	.35
42	2.16	42	.36
43	2.25	43	.38
44	2.34	44	.40
45	2.43	45	.43
46	2.53	46	.45
47	2.64	47	.47
48	2.76	48	.50
49	2.88	49	.53
50	3.01	50	.57
51	3.15	51	.60
52	3.30	52	.64
53	3.46	53	.68
54	3.63	54	.73
55	3.82	55	.78
56	4.01	56	.83
57	4.22	57	.89
58	4.44	58	.95
59	4.68	59	1.03
60	4.94	60	1.11
		61	1.19
		62	1.29
		63	1.40
		64	\$1.51

Additional information on Government Insurance, as well as application blanks, are available to those interested by writing to the Veterans Administration, Washington, D.C., or to the Chief, Information Division, O.C.A.C.

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COMMISSION IN AIR RESERVE FOR FLYING CADETS

A total of 53 Flying Cadets, who graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, on February 28, 1934, and who for the past year served with Air Corps tactical units at various stations, completed their second year flying course on February 20th, and have been recommended by the Chief of the Air Corps for appointment as second lieutenants in the Air Reserve. Request has been made of the War Department to order these prospective Reserve officers to extended active duty with Air Corps tactical units, to begin on or about March 1, 1935. They are stationed at the present time, as follows:

Barksdale Field, Shreveport, La.

Eades, William	Lexington, Ky.
Hay, James Black	Waterloo, Iowa
Hinton, J.W.	Port Arthur, Texas
Keese, William Brewer	Wyoming, N.J.
Livingstone, Richmond A.	Pawtucket, R.I.
McMahon, George Robert	Huntington, W. Va.
Rodieck, Ralph Wm.	Palestine, Texas
Stone, Frank Copeland	Wichita, Kansas

Brooks Field, Texas

Altman, Dale Ellis	Gresham, Oregon
Clark, William Hogan	Golconda, Ill.
Holladay, Wendell Greer	Indianola, Iowa
Kester, Edson Eugene	Jacksonville, Fla.
Lerche, Andrew O.	Albany, N. Y.
Martin, Leslie Etheridge	Midlothian, Texas
Motley, Clifford	Norman, Oklahoma
Falmer, Albert Luther	Terrell, Texas
Farris, William Walter	Philadelphia, Pa.
Fierce, Arthur Jenkins	Montague, Mass.
Pierce, George Everhill	Montague, Mass.
Stewart, John Philip	Riverside, Calif.

Hamilton Field, Calif.

Bryant, Alexander W.	
Bullock, Cady Richmond	Glendale, Calif.
Burton, Alexander Tennile	Beverly Hills, Calif.
Capp, William Charles	Venice, Calif.
Ecklund, Sven Harold	Morrill, Neb.
Kugel, Richard Charles	Rhineland, Wis.
Luedecke, Alvin R.	El Dorado, Texas
McDermont, Verne Alexander	Riverside, Calif.
Moser, Glen Clune	Los Angeles, Calif.
Mundell, Lewis Leo	Fountain, Colo.
Olstedt, Ray Walter	Denver, Colo.
Peterson, Clair Arthur	Fargo, North Dakota
Proper, Louis William	Modesto, Calif.
Root, Edgar Walthall	Huntsville, Ala.
Sanford, George Samuel	Mobile, Ala.
Timper, Norman F.D.	Watertown, Mass.
Virgin, Edward Warren	Montgomery, Ala.

March Field, Calif.

Ashman, Robert	Appleton, Wis.
Carter, James Thomas, Jr.	Spartanburg, S.C.
Clement, Browne	Thorndale, Texas
Cock, Frank Richardson	Denver, Colo.
Eisenhart, Donald W.	Culbertson, Nebraska
Gray, Fred Colbert, Jr.	Abilene, Texas
Hatcher, Wm. Albert, Jr.	Detroit, Mich.
Hilger, John Allen	Houston, Texas
James, Weldon Marion	Fort Worth, Texas.
Ferland, Hugh Holton	Berkeley, Calif.
Rendle, Irvine Alfred	Rawlins, Wyoming
Shafer, George Harold	Culbertson, Nebraska
Spicer, Henry Russell	Los Angeles, Calif.
Todd, Paul Engberg	Engberg, Texas
Turner, John Harold	Corning, Iowa
Wilson, Paul Boyer	Carlisle, Pa.

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For the past five or six months, the 55th Pursuit Squadron, Barksdale, Field, La., has been flying P-26A's, and everyone is pleased with the airplane. In service tests on dive bombing and ground gunnery (standard straight approach) the very stable flight of the plane greatly facilitated sighting and some noteworthy scores were made.

PANAMA FLIGHT TRAINING AT ROCKWELL FIELD

Early on February 26th, the Panama Flight left March Field, Calif., en route to Washington, D.C., the official starting point of the long flight to the Canal Zone. The itinerary called for intermediate stops at Kelly, Maxwell and Langley Fields. A 40-hour check of equipment is scheduled to be made at Langley Field.

Prior to the take-off from March Field, the participating personnel were temporarily stationed at Rockwell Field to make preparations for the flight. On February 14th, three transports landed at Rockwell Field and unloaded officers, enlisted men and baggage, making the start of a ten-day period of training there before the flight across the continent to Washington.

The first few days were spent in getting acquainted with the B-12 Martin Bombers with their controllable pitch propellers, radio compasses, etc., as well as intensive training in instru-

ment flying under the supervision of the Advanced Air Navigation Training Unit.

On February 20th, the 12 Bombers, fully loaded with 817 gallons of gasoline, 54 quarts of oil, a crew of two men and sand bags to take the place of baggage, left Rockwell Field at 10:45 p.m., on an over water flight of 1200 miles. Proceeding out over the Pacific Ocean, the flight set a course for Hamilton Field, San Rafael, Calif., and after circling that field, returned to Rockwell Field over the same route, landing at 4:30 p.m.

The flight personnel were quite pleased with the functioning of their equipment and, after inspection on the ground, with the fine condition of same following the long flight. Members of the flight now feel that the 1150-mile flight over the water from Miami, Fla., to France Field, Panama, may be easily taken in their stride.

The flight reached Langley Field at 1:45 p.m., February 28th.

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WAR DEPT. ORDERS AFFECTING A.C. OFFICERS

CHANGES OF STATION: To Langley Field, Va.: Major Adlai H. Gilkeson from duty with Organized Reserves, 8th C.A., Fort Sam Houston, Texas; Captains Eugene L. Eusanik, Arthur K. Ladd and Malcolm N. Stewart, from Air Corps Tactical School, Maxwell Field; Captain Lawrence P. Hickey and 1st Lieut. Charles H. Howard, from Office of the Chief of the Air Corps, Washington, D.C.; Captain Clement McMullen from Maxwell Field; Captain John F. Whiteley from Wright Field; Captain Ennis C. Whitehead from Burksdale Field; 2nd Lt. Hugh F. McCaffery from Aberdeen Proving Ground, Md.

To Chanute Field, Ill.: 2nd Lieut. Daniel F. Callahan, Jr., from Panama; 2nd Lieuts. Wiley D. Gandy and Stuart P. Wright, previous orders in their cases revoked; 2nd Lieut. Earle T. MacArthur, Jr.

To March Field, Calif.: 2nd Lieut. Eugene H. Beebe, from Hamilton Field; Lieut.-Col. John H. Pirie, from Headquarters, 5th Corps Area, Fort Hayes, Ohio.

To Aberdeen Proving Ground, Md.: 1st Lt. Lloyd H. Smith, from Langley Field.

To Park Dale Field, La.: 1st Lieut. Wm. P. Sigan, from foreign service.

To Randolph Field, Texas: 1st Lieuts. Robert L. Easton and John F. Egan, from Hawaii; 1st Lieut. Bernard A. Bridget, from Panama.

To Pope Field, N.C.: 1st Lieut. Stuart G. McLennan, from Panama.

To San Antonio Air Depot, Duncan Field: 1st Lieut. Wm. E. Warren, from Panama.

To Mitchell Field, N.Y.: 2nd Lieut. Chas. B. Dougher, from Hawaii.

To Presidio of San Francisco, Calif.: Col. Roy C. Kirtland, from Hqrs. 2nd Corps Area, New York City.

To Rome, Italy: 1st Lieut. Thomas D. White, from Moscow, Soviet Russia, for duty as Assistant Military Attache and Assistant Military Attache for Air.

DETAILED TO THE AIR CORPS: 2nd Lieuts. Paul Birlingame, Jr., Infantry, and Horace L. Sanders, Field Artillery, and to Randolph Field, Texas, March 1, 1935, for flying training.

PROMOTION: 1st Lieut. Ronald A. Hicks to Captain, with rank from Feb. 1, 1935.

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MANY APPLICATIONS FOR ENGINEERING SCHOOL

The Office of the Chief of the Air Corps has informally informed the Commandant of the Air Corps Engineering School of the names of 150 Air Corps officers who have stated on their preference cards a desire to attend the Engineering School. "It is thought exceedingly probable," says the News Letter Correspondent, "that many of these officers are not acquainted with AR 350-350, which provides that officers will be selected for detail for the course by the War Department upon recommendation of the Chief of the Air Corps, and that application to attend the School may be submitted at any time through military channels to the Adjutant General.

This submission of an application to attend the School is essential in that an application blank indicating the student's military and educational qualifications is required. At the present time officers of the Air Corps are being selected for attendance who have from three to seven years' commissioned service and who have the necessary engineering requirements. In addition to expressing a desire on a preference card for the School, it is essential that the formal application be made."

MEETING OF INSTITUTE OF AERONAUTICAL SCIENCES

Wright Field was well represented at the Annual Meeting of the Institute of Aeronautical Sciences which was held in New York City on January 29th and 30th. Capt. E. J. Powers, Lieut. F. D. Klein and Mr. Opie Chenowith, of the Power Plant Branch, Captain F. M. Hopkins of the Air Corps Engineering School, and Mr. H. L. Carpenter, of the Electrical

Unit attended. Lieut. Klein and Mr. Carpenter presented papers on two outstanding Materiel Division developments, the former paper entitled "Aircraft Engine Performance with 100 Octane Fuel." and the latter, "Cold Temperature Starting of Air Corps Engines."

A brief resume of these papers is given below.

AIRCRAFT ENGINE PERFORMANCE WITH 100 OCTANE FUEL

By Lieut. Frank D. Klein

Prior to 1928, Air Corps engines operated with about 50 Octane Number Fuel. At present, fuel having an anti-knock value of 92 Octane by the Air Corps method of test is used in engines designed for maximum performance on such fuel, with a resulting increase in power output per unit weight of about 33-1/3 per cent.

Developments of the fuel industry made possible early in 1934 the production of commercial iso-octane on a large scale at a cost sufficiently low to make the outlook for Air Corps use of higher anti-knock fuels decidedly promising. Previously, prohibitive cost, limited availability and necessarily high lead content, resulting in excessive corrosion difficulties, had been limiting factors. The Air Corps, anticipating a need for 100 Octane fuel, prepared an experimental specification for such fuel on February 1, 1934. One thousand gallons of commercial iso-octane were procured in May, 1934, to be blended with a sufficient quantity of a good quality of aviation gasoline, to make 2,000 gallons of 100 Octane fuel, an amount sufficient for experimental multi-cylinder engine tests to determine the increase in power output possible with such fuel.

After serious consideration of physical properties and anti-knock value of fuels available, four were selected as the most interesting for comparison with Air Corps fuel of 92 Octane rating. Each of these had an anti-knock value of 100 Octane and conformed closely to specification requirements except in tetraethyl lead content. A Wasp at 2200 r.p.m. and Cyclone engine at 1950 r.p.m. were used for the tests.

On the Wasp engine, constant throttle mixture control runs and constant specific fuel consumption variable throttle runs were made. On these variable throttle runs, the throttle was opened progressively until the maximum allowable cylinder temperature of 550° F. was reached. In the mixture control runs, three of the four 100 Octane fuels appeared superior to the 92 Octane fuel, some irregularity in engine operation causing uncertainty concerning the test of the fourth 100 Octane fuel. In the

variable throttle, specific fuel consumption run at approximately .55 pound per brake horsepower per hour, two of the 100 Octane fuels appeared slightly superior to the other two and showed 620 h.p. as compared with 510 h.p. for the 92 Octane fuel, a 21.6 per cent increase.

On the Cyclone engine, constant specific fuel consumption, variable throttle runs were made with each of the five fuels at approximately .60 pound per brake h.p. per hour. The throttle was opened progressively in each case until the engine suddenly became very rough and cut out. This occurred before excessive cylinder temperatures were reached. Under these conditions the 100 Octane fuels showed a power output of approximately 800 h.p. as compared to 610 h.p. with the 92 Octane fuel, a 31 per cent increase.

With engines designed with high compression ratio and high degree of supercharge specifically for operation on 100 Octane fuel, still greater gain in performance should be obtained.

In several instances in testing Pursuit planes at Wright Field, 100 Octane fuel made possible full throttle operation over the speed course, and completion of rate of climb checking without overheating of cylinders, where with 92 Octane fuel the test could not be completed. Also, in the Mitchel Trophy Race held at Selfridge Field in 1934, 100 Octane fuel was successfully used to increase power output and raise the speed of the race. This permitted the airplanes to operate with a reasonable margin of safety at considerably higher speed, and no detonation was evident to the pilots.

In this race, which is limited to standard service type Pursuit planes, the winner averaged a speed of 216.8 miles per hour.

The marked increase of 15-30 per cent in power output with 100 Octane fuel over that obtainable with 92 Octane Number anti-knock value clearly demonstrates the extreme desirability from a military standpoint of adopting this fuel as a means of greatly increasing engine performance with relatively little increase in weight, provided that engines are designed to take full advantage of them.

NOTES FROM AIR CORPS FIELDS

San Antonio Air Depot, Texas, Feb. 20th.

During January, 1935, the Engineering Department of this Depot overhauled a total of 27 planes and 48 engines, and repaired 18 planes and 30 engines of various types.

The regular monthly conference and luncheon at this Depot for discussion of supply and engineering matters in this Supply Area was held on February 5th and was attended by the following Air Corps officers: Captains Ferry Wainer, C.C. Nutt and T.L. Gilbert, Kelly Field; Captain Alfred Lindeburg, Fort Crockett; Captain F.D. Lynch and Lieuts. C.R. Storrie and J.F. Thompson, Jr., Brooks Field; Captains H.A. Bartron and E.R. McReynolds, Randolph Field; Captain Paul C. Wilkins and Lieut. H.F. Gregory, Fort Sill, and Lieut. Gilger, Barksdale Field.

This conference was also attended by Capt. Max F. Schneider, Chief of the Inspection Division, Office of the Chief of the Air Corps, and the three Technical Supervisors, Captains H.A. Bivins, F.A.D. Control Area; B.J. Tocher, M.A.D. Control Area, and A.S. Albro of this Control Area, who were attending the annual Inspection Division Technical Conference then being held here; also by Captain C.A. Horn, Air Corps Instructor with the Arkansas National Guard, who was visiting this Depot on an airplane ferrying mission.

Lieut. Richard T. Aldworth, U.S.A. Retired, Superintendent of the Municipal Airport, Newark, N.J., was a recent visitor and greeted many old friends here. He flew to San Antonio in a Beachcraft 4-place plane, his mother being reported very ill.

Lieut. Aldworth will be remembered as one of the foremost pilots of the Air Corps prior to his retirement. He was on duty at this Depot for a number of years and retired December 16, 1929, for disability in line of duty.

Officers ferrying airplanes to or from this Depot recently were Capt. W.B. McCoy, A.C. Instructor, Tenn. National Guard; Capt. Y.A. Pitts and Lieut. E.H. Rice, Air Corps Detachment, Fort Leavenworth, Kansas; Lieuts. L.P. Holcomb, Air Corps, and D.K. Smith, Air Reserve, Scott Field, Ill.; and Lieut. R.N. Read, Air Reserve, Langley Field, Va.

Hamilton Field, San Rafael, Calif. Feb. 20th.

A squadron of P-26A Pursuit planes from March Field was scheduled to fly in the National Defense Parade in San Francisco on Washington's Birthday, following which the planes were to land at Hamilton Field for public inspection.

First Lieut. Walter R. Agee was forced down at Bakersfield recently due to a low ceiling. Piloting an air transport to Rockwell Field with five enlisted men who were assigned to the Panama Flight, he discovered a leak in the gas tank after landing. Patching up the leak, he took off for Rockwell Field the following day and arrived safely.

Private Ryder W. Finn, 11th Bombardment

Squadron, left recently for Hamilton Field to receive appointment as a Flying Cadet.

Private Paul W. Lawrence, 31st Bomb. Sqdn., is to undergo an examination in April for a Flying Cadet appointment.

Flying Cadet Glen C. Moser, with Pvt. Gerald S. Reynolds as passenger, completely washed out a PT-3 on Feb. 6th, about 6 miles north of Hamilton Field. The motor cut out completely, and Cadet Moser was headed directly for a canal embankment at the completion of the forced landing. However, he was able to slip the plane into the ground on the right wing tip to avoid the head-on collision. Only minor bruises were suffered by pilot and passenger.

Second Lieut. Edward W. Suarez, appointed E. & R. Officer and Post Parachute Officer during the temporary absence of 1st Lieut. Charles B. Stone, III, is also commander of the 31st Bomb. Squadron during the absence of Capt. Harold D. Smith on the Panama Flight.

Capt. Don L. Hutchins, Junius P. Smith and 2d Lt. Millard Lewis were appointed to conduct the preliminary examination of applicants for commissions as 2nd Lieutenants in the Air Corps, Regular Army.

113th Obs. Sqdn. Ind. Nat'l Guard, Indianapolis

The members of the Squadron wish to thank our Air Corps friends for their kind expressions of sympathy in our recent great loss of Lieuts. Henderson Wheeler and Richard Miller.

We feel quite proud of the interest shown in us by the Illinois Squadron at Chicago who flew a 5-ship formation down to witness our annual inspection, after which they took off for a night formation flight home. Lt. Russell Daniels from our Squadron moved to Oak Park, Ill., and was given a commission in the Illinois Squadron. We hope he will be as valuable to them as he has been to us.

Our Communications Section is putting the finishing touches on a short wave radio transmitter to be known as W9JKG. We hope this radio station will bring us in closer touch with the other Air Corps stations and also facilitate our communications training.

Let us remind all Air Corps units that the date of the annual 500-mile speedway race is not far off, and this affords a splendid opportunity for a visit to our station with a National Classic thrown in. We will consider it a pleasure and a privilege to furnish transportation and lodging for visiting officers, so make a date with us for Memorial Day.

Brooks Field, San Antonio, Texas, Feb. 19.

Twelve Flying Cadets were slated to be commissioned in the Air Reserve on February 20th, and ordered to active duty the following day, viz: Dale E. Altman, William H. Clark, Wendell Holladay, Edson E. Kester, Andrew O. Lerche, Leslie E. Martin, Clifford Motley, Albert L. Palmer, William W. Pannis, Arthur J. Pierce, George E. Fierce, John P. Stewart.

Brooks Field will receive 12 Flying Cadets V-6732, A.C.

from the graduating class at Kelly Field, to report here immediately after graduation, viz: Thomas Bartley, Jr.; George S. Brewer, John E. Cornett, William I. Fernald, Frank V. Haynes, Arthur V. Jones, Jr., Francis H. MacDuff, Norman L. Peterson, William Q. Raukif, Jeff A. Smith, Lloyd A. Waler, Jr., and Tracy R. Walsh.

The following personnel at this station will undergo the competitive examination from which 30 Regular commissions will be awarded:

Lieuts., Air Reserve, Robertson, Harcos, Moore, Hooks, Bateman, Collier, Endress, Denison, Rivard, Holloway, Fahey, Pippinger, Hausafus, Dross, Ellis, Moomaw, Pryce; Flying Cadets Holladay, Clark, Lerche, Motley, Altman, Martin, Kester, Fannis, G.E. Pierce, A.J. Pierce, Palmer, Staff Sgt. Blair, Privates Poupitch and Wackwitz.

Those not from Brooks Field who will be examined at this station include Lieuts., Air Reserve, Tibbs, Miller, C.L., Miller, C.A., Joyce, Malone, Kristofferson, Rafferty, Gebelin, Jr., Bordelon, Crutcher, Jr., J.F. Davidson, Fisher, Sartain, Prossen, Northrup, Chambers, McRay, Fauche, Jr., and Staff Sgt. O.E. Henderson.

Scott Field, Belleville, Ill., Feb. 20th.

Several changes in officer personnel occurred recently and are listed below:

Capt. Karl S. Axtater reported from Panama and was assigned to the 9th Airship Squadron; Capt. H.E. Carr is now at Rockwell Field completing the Air Navigation Training course; Capt. Rafael Baez, Jr., ordered from Hawaii, is now on three months leave and is due to report July 1st; 1st Lieut. Walter A. Fenander departed for Hawaii, as did Chaplain James G. De La Vergne; Capt. F.A. Johnson was ordered to his home to await retirement; 2nd Lieut. Irving R. Selby was ordered to sail for Panama.

The Scott Field Basketball team, guided by 1st Lt. W.L. Ritchie has gotten well under way, turning in six wins and three losses to date. The only Service tilts were two games with Chanute Field, honors being even. A heavy schedule was prepared, including local independent and Service teams. With a wealth of young but promising basketball material, a smooth, fast working combination should be developed.

The Post Championship was annexed again this year by the 24th Airship Service Squadron, after an exciting finale with the 9th Airship Squadron.

Scott Field boxing has gotten off to a flying start with four men entered in the District Golden Gloves Eliminations. Athletics in general have taken on a decided impetus with the organization of the Scott Field Athletic Association.

120th Obs. Sqdn. Colo. National Guard.

The sun continues to shine in Colorado, and the 120th Observation Squadron has carried out Operations Orders with practically no bad weather flying. We are accustomed to good flying weather and very seldom suspend operations because of inclement weather.

Considerable interest is being shown in a letter from the War Department, Chief of the National Guard Bureau, Jan. 29th, relative to Non-Pilot Observers. Several of the noncommissioned officers are taking the necessary action to obtain their commissions, and we are going to see several new faces in the commissioned officers' ranks soon. We have several qualified Observers among the NCO's who will be a credit to the Squadron.

On Feb. 8th, two airplanes from the Squadron assisted the 328th Engineers, who were in training at Fort Logan, in their problems relative to "Security on the March" and "Security against Aircraft" for which they were highly praised by Colonel Charles Larsen, commanding officer of that unit.

118th Obs. Sqdn., Connecticut Nat'l Guard.

An extended training flight in an O-38E from Hartford, Conn., to Brownsville, Texas, and return, was recently accomplished by Lieuts. Pincomb and Wiley. They departed Jan. 22nd for Dayton, O., via Buffalo, N.Y., choosing that route because of weather conditions which had by the following night developed into a blizzard over this area. The Dayton-Scott Field leg was flown that night along the lighted airway. The next day the pilots flew to Fort Crockett, Texas, where they spent the night and were hospitably entertained by old friends of flying school days. Brownsville was reached the next day and a pleasant and instructive period of three days was spent in inspecting the equipment and activities of the Pan-American Airways system.

A discussion with several of the Company's pilots relative to the problems encountered in flying operations in Central America provided the Guardsmen with much interesting information.

Doubtful weather in the Red River Valley delayed the return departure for Dallas, via Fort Crockett, until Jan. 29th. A possibly dangerous situation was avoided by means of the radio after departing from Dallas for Kansas City when the fliers, while in the vicinity of Ponca City, received a Dept. of Commerce weather broadcast stating that Kansas City had suddenly fogged in. The course was changed to Wichita, Kansas, and the night spent there. The following day the fog lifted at Kansas City long enough to permit the flight to be continued to that point and then closed down again for two days. On Feb. 2nd, the Connecticut men flew to Scott Field, the next day to Auburn, Ind., and the following day to Hartford.

The two airmen were highly pleased with the uniformly courteous and excellent service afforded them by all Army and Commercial fields along the route, and particularly around the Department of Commerce weather broadcasting service.

Barksdale Field, Shreveport, La., Feb. 15.

The 55th Pursuit Squadron, 1st Lieut. C.E. Crumrine, Squadron Commander for some time, has transferred to Maxwell Field, Ala., and

1st Lieut. Earl W. Barnes is now in command.

At the present time, this Squadron has about two pilots per airplane. The following is a roster of officers assigned to this Squadron: 1st Lieut. James A. Ellison, 2nd Lieuts. A.C. & H.N. Burkhalter, Jr., R.L. Carter, H.K. Mooney, Sory Smith, Dean C. Strother, Felix L. Vidal; 2nd Lieuts., Air Reserve: John V. Borden, Quinn M. Corley, Dudley S. Cox, Jay L. Gentry, Henry L. Hoxie, Philip B. Klein, Arthur E. Kingham, Jeff C. Mock, William I. Sanders, Marion D. Umruh. The following Cadets are attached for flying: J.L. Cunningham, F. R. Drake, William Eades, J.W. Hinton, W.B. Keese, O.K. Lawing, R.A. Livingston and G.V. Minnis.

Squadron training during the last month was confined largely to preparation of equipment and instruction of pilots incident to the one month aerial gunnery practice and field exercises at Chapman Field, Fla. Due to the shortage of equipment, only the following officers and cadets will participate in this flight: 1st Lieut. Earl W. Barnes, 2nd Lieuts. Dean C. Strother, Sory Smith, H.K. Mooney, Robert L. Carver, Felix Vidal, Henry L. Hoxie, Flying Cadets J.W. Hinton, R.A. Livingstone, William B. Keese, William Eades and J.L. Cunningham.

The 79th Pursuit Squadron, like the rest of the organizations in the 20th Pursuit Group, will be somewhat depleted during the month February 15 to March 15, having sent 14 pilots and 18 enlisted men to Chapman Field for maneuvers. The Squadron Commander, Capt. Camblin, will lead the detachment to Miami, and the Squadron will be commanded by Captain Whitehead during the absence of Captain Camblin.

Flying will be somewhat restricted since only three P-12's are left, together with two A-9's and two PT-3A's, the rest of the P-12's being sent to Miami.

Other activities, however, will be carried on as usual. Squadron athletics will be carried on to build strong teams to win, if possible, the track and baseball championships.

The basketball defeat at the hands of the 77th Pursuit Squadron kept the 79th from winning the Group Championship.

Two men from the Squadron, Strubbe McConnell from Shreveport and Howerton, from Oklahoma, were sent to Randolph Field to undergo training as Flying Cadets. Here's to them and the best of luck.

March Field, Riverside, Calif., Feb. 5th.

Lieut.-Colonel H.H. Arnold, Commanding Officer of March Field, returned from Alaska with something more than a knowledge of the terrain of the Great Northwest. He was reminded by the Canadians at one of their social functions given in his honor of the fact that they have some worth while customs designed to give entertainment, break the tedium of ordinary military service and at the same time to preserve and promote some of the spirit and morale of the "Old Army."

Shortly after his return from the Alaskan Flight, Col. Arnold instituted at March Field

what has come to be called "Wing Night." It is a stag affair at which all officers and cadets appear in uniform, have a formal dinner and follow some of the old customs both of our own Army, in its earlier days, and the British Army. After the formal dinner, a program of hi-jinks, vaudeville, frivolity and fun is given by selected officers for the amusement and entertainment of the others. Needless to say, presentation of the "Dumb-Bell" Trophy finds a place in the latter stages of this program.

These Wing Nights have come to hold a prominent place in semi-social activities of the command and play a big part in building up morale.

116th Obs. Sqdn., Washington National Guard.

Uncle Sam's invitation for additional officers in the Regular Army Air Corps has proven attractive to seven former Regular Army pilots now residing in the vicinity of Spokane, Wash. In the Headquarters building of the 41st Division Aviation, Wash. National Guard, on Feb. 20th, preliminary examinations were given by a board composed of Col. Frederick Knabenshue, Commanding Officer, 4th Infantry Regiment, Ft. George Wright; Major Robin A. Day, Instructor, 41st Div. Aviation, and Capt. John Walters, Division Aviation Flight Surgeon.

Two of the seven applicants are pilots with the United Air Lines, while two are members of the 116th Obs. Sqdn. Applicants for return to the Regular Army Air Corps include: Byron S. Cooper, 2nd Lt., now a member of this squadron, who graduated from the Advanced Flying School in 1927 and has had more than two years of Regular service - Emmett J. Corrigan, 2nd Lt., 116th Sqdn., who is a graduate of the Advanced Flying School in 1932 and had two years of active duty. Lieut. Corrigan attended Gonzaga University, Spokane, for two years - Richard Morden McGlinn, 1st Lt., now a pilot for the United Air Lines, who is a resident of Spokane, graduated from the Advanced Flying School in June, 1930, and had an 18 months' tour of active duty in the Air Corps - William Garfield Ditzen, 2nd Lt., a resident of Spokane, pilot on United Air Lines, graduate of the University of Calif., as well as the Army Advanced Flying School, and who had 18 months of active duty - David Reynold Nelson, 2d Lieut., a resident of Moscow, Idaho, who graduated from the University of Idaho and from the Advanced Flying School, Class of June, 1931, and had one year of active duty - John Ormond Mosman, 2nd Lt., a resident of Moscow, Idaho and graduate of the University of Idaho and from the Advanced Flying School, Class of June, 1932, and had a one year tour of active duty.

Final examinations will be held April 2nd, and possibly at Felts Field, Spokane, provided the class of candidates is large enough.

Six radio sets of an "unknown make" will be delivered to the 41st Division on April 1st, according to advice received by Major Robin A. Day, Instructor. Five sets are for the Douglas O-38 Observation planes, while the

other set is for the ground station. This equipment with the two present SC 134 sets, and will mean that all but one airplane will be radio equipped.

Maxwell Field, Montgomery, Ala., Feb. 20th.

Capt. John R. Tighe, Quartermaster Corps, Constructing Q.M. at the field for the past 14 months, departed Feb. 1st on leave of absence prior to his reporting at New York to sail for duty in Hawaii.

It has been under the direction of Captain Tighe that the completion of all the new construction at Maxwell Field was made possible. He is responsible for the expenditure of one and one-half million dollars since his arrival here in December, 1933, and has completed 25 new officers' quarters with garages, 20 new double sets of noncommissioned officers quarters with garages, a new Quartermaster Warehouse, a new addition to the Fire Department, the new Headquarters Air Corps Tactical School Barracks, Hangars Nos. 5 and 6, new film vault building, addition to Austin Hall, new Quartermaster Gasoline Station, street lighting system and roads and sidewalks throughout the post.

A visit to our Post will convince anyone that it is one of the most modern and beautiful in the Air Corps today, and all construction done here since December, 1933, was under Capt. Tighe's supervision. He has devoted his entire time and efforts to these vast projects, and the results obtained bear eloquent testimonial to his industry and application to duty.

Capt. Tighe is a graduate of the Quartermaster School, Administrative Course, 1932, and the Quartermaster School, Motor Transport School, 1928. He was first commissioned in the Army as a 2nd Lieut. of Infantry in 1917, and received his appointment as Captain in the Q.M.C., November 7, 1928. He came to Maxwell Field from Fort Bragg, N.C., and immediately assumed his duties as Constructing Quartermaster.

Capt. Kinsley W. Slauson, Q.M.C., now Post Q.M. at the field, has assumed the duties of Constructing Quartermaster.

Edwin M. Gavin and James H. Pride, both graduates of the Advanced Flying School, enlisted at Maxwell Field. Both are taking the examination for Regular Army commissions. Both of these Reserve officers served on active duty tours with Air Corps organizations.

Staff Sgts. Ray W. Clifton, John H. Williamson, Sgt. Wm. C. McDonald, Jr., and Pvt. Russell L. Waldron, all enlisted pilots at this station, are taking the examination.

Lieut. Ralph Snavelly was appointed Post Operations Officer. He relieved Capt. Claire L. Chemnault, Pursuit Instructor at the Tactical School, who can now devote his entire time to his duties as instructor.

Major Harmon, leading a flight of 43 airplanes, arrived at this station on Feb. 15th. He and his flight, consisting of 34 officers, 8 Flying Cadets, one enlisted pilot and 17 enlisted mechanics, remained overnight and departed the next morning for Chapman Field, Miami, to participate in gunnery exercises for

a period of 30 days.

General Westover and Sgt. Hymes in an C-38 airplane, arrived here Feb. 4th from Barksdale Field, enroute to Bolling

For the first time this year Maxwell Field has become bowling conscious, and a team representing the field has engaged in some serious pin splitting. All members of the team bowl an average of over 135 and are veterans at the game. Arrangements are under way for a match with the strong Fort Benning team.

The 54th School Squadron, in its last intersquadron game this season, defeated the Headquarters team, 38 to 29. This victory gave the 54th Basketeers a 100% record for the year in basketball. It is expected that every member of the team, which includes Capt. "Sammy" Nelms, Buie Hess, Jack Curtiss, Earl Knight and Lester Hamrick, will be selected for the Post Team to represent it on tours around this part of the country. Games have been scheduled with outside civilian teams.

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SOME OF THE MORE INTERESTING BOOKS AND DOCUMENTS RECENTLY ADDED TO AIR CORPS LIBRARY

Available for loan to Air Corps organizations only upon request to the Air Corps Library, Munitions Building, Washington, D.C.

- A 40.3/43 U.S. Air Corps. Rockwell Field, Calif. Celestial Navigation, 1934. 44 f. 47 diags. 25 cm. Above is written in simple language and manner suitable for beginner.
- D 52.41 Bristol Aeroplane Co., Ltd. Moteurs Bristol d'aviation "Bristol" Mercury et Pegasus. Filton, Eng., 1935. 16 p. incl. illus. 25cm. French text.
- D 52.41 Rolls-Royce, Ltd. Rolls-Royce Aero Engines. London, Eng. 3 p. incl. illus. 33cm. Text in French and English.
- D 52.41 Walter, S.A. Moteurs d'aviation, 1935, Prague. Caption title, 16 f. incl. illus. diagrams, 23cm. French text.
- 629.13 Un3me No.302 France. Air Ministry. Aeronautical technical services. Louis Kahn conformal orthodromic transcontinental itineraries; aerial and naval navigation maps published with the assistance of the Services techniques de l'aeronautique (1934). Dayton, 1934. 31 f. incl. maps, diagrams. 28 cm. (U.S. Air Corps Trans. 302.) Tr. by Materiel Div. from the French.
- 629.13 Un3me No.303 Leglise, Pierre. Ascent to the stratosphere of the "Explorer." Dayton, Feb. 4, 1935. 23f. 28cm. (U.S. Air Corps Trans. 303). Tr. by Materiel Div. from "L'Aeronautique", No. 185, Oct. 1934, and No. 186, Nov. 1934. Refers to the flight of Major Kepner and Captain Stevens.

INSPECTION DIVISION NOTES

A National Guard Air Corps unit recently submitted an Unsatisfactory Report on safety cap outlet indicators for CO₂ fire extinguishers stating that a short time after installation the caps, in the majority of cases, are found broken and extremely dry and brittle, although in each case it was determined that no leakage occurred. The following remarks are extracted from the Materiel Division reply to the Unsatisfactory Report:

* * * * *

"2. For your information, it has been found that by keeping these caps in the formaldehyde solution the glycerine in the caps is extracted, making them very brittle. In checking this matter with the contractor, information has been received that these caps may now be purchased in the dry state. They are to be soaked in water for 45 minutes just before installation. Technical Order 16-20-2 is being amended to provide for this new method of installation. A quantity of the caps in the dry state have been procured and are now available at the Fairfield Depot. The stock of caps in the formaldehyde solution will be disposed of.

"3. A copy of the change in the Technical Order should be received within the next twenty days."

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Replies to a questionnaire sent recently to a number of Air Corps activities indicated a general impression that the existing requirement that starter brushes, brush holders, and springs be inspected twice each 20 hours at intervals of 10 hours, was excessive. In view of the opinion of the Service activities contacted, the Materiel Division will shortly amend Page 10, Section IV, Technical Order No. 02-1-32, to provide that the above parts be inspected at intervals of 40 hours, instead of twice each 20 hours.

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A report received recently from an Air Corps station states that after flushing a tank on a field servicing truck to remove scale and sediment on completion of repairs to the truck, the personnel flushing the tank failed to completely drain the lines leading from the segregator to the servicing hose, with the result that water remained in these lines. Attention is invited to the fact that, when operating properly, the segregator will eliminate water in the tank, or in the lines leading from the tank to the segregator, but will obviously not eliminate water in the lines between the segregator and the discharge nozzle.

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From numerous informal reports received from individual pilots, it is apparent that maintenance personnel caring for transient aircraft continue to be deceived by the "foam" that frequently exists in aircraft oil tanks immediately after the engine is stopped. In several instances the error of servicing personnel in mistaking "foam" for oil has resulted in underservice as great as sixteen quarts. This error most commonly occurs when visiting aircraft stop only long enough for service and take-off is made as soon as service is completed.

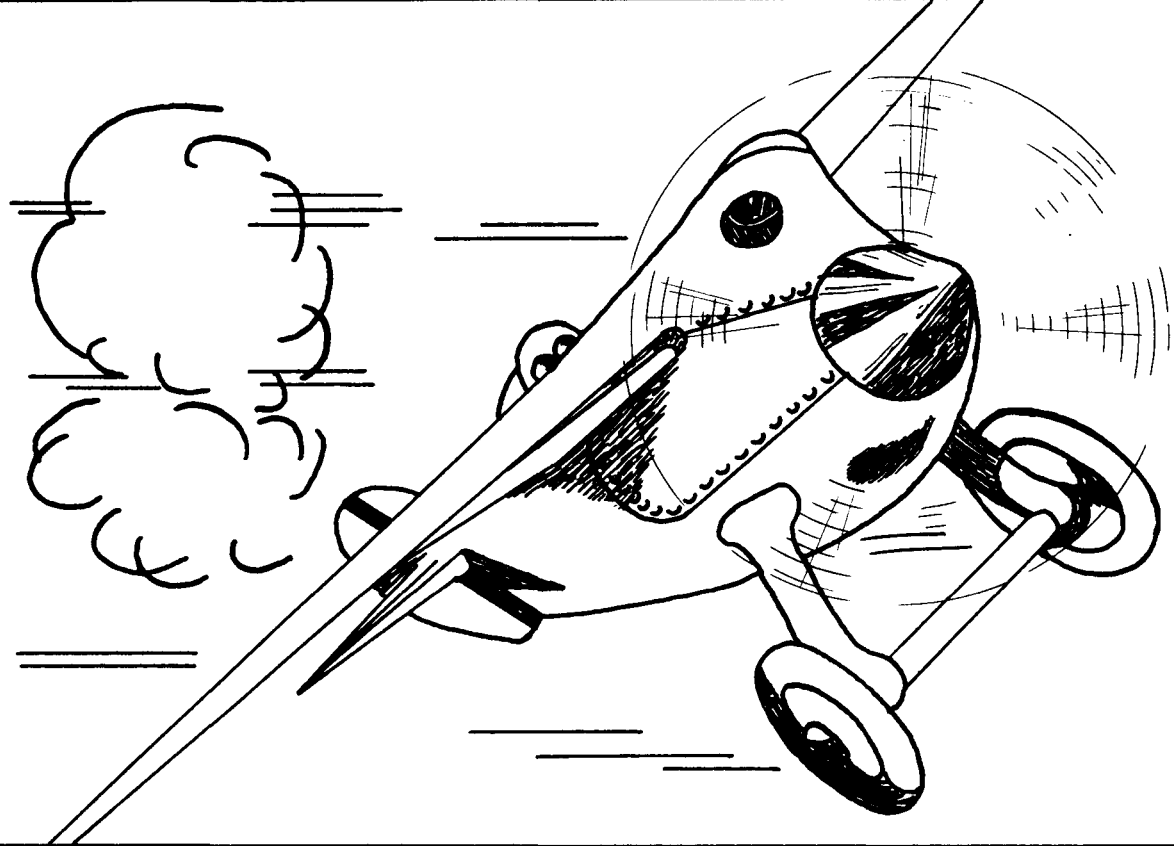
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An inspection of Forms No. 1 indicates that frequently maintenance personnel are making the pre-flight inspection of the quantities of fuel and oil in the aircraft fuel and oil tanks at the close of the maintenance day instead of immediately prior to the first flight of the day. Existing instructions require that the quantities of fuel and oil in the tanks be checked immediately before the first flight of the day, and that after the

quantities have been determined, they be recorded in Column 2 on the face of Air Corps Form No. 1.

Paragraphs 7 c and 7 g, Air Corps Circular 15-1, dated February 1, 1934, require that under certain conditions the officer in charge of transient aircraft maintenance sign the Exceptional Release on the reverse of Form No. 1, if a release is necessary for a transient airplane. This requirement is included to insure that local authority is aware of any failure on the part of the transient aircraft maintenance crew to properly maintain or repair transient aircraft.

AIR CORPS NEWS LETTER



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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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BRIG.-GENERAL ARNOLD AGAIN WINS THE MACKAY TROPHY

The Secretary of War announced that the Mackay Trophy for 1934 has been awarded by the War Department to Brigadier-General Henry H. Arnold, Air Corps, in recognition of his leadership as Commanding Officer of the U.S. Army Alaskan Flight of last year.

It is interesting to note that this same officer was the first winner of the Mackay Trophy in 1912, back in the early days of aviation. He was then a 2nd Lieutenant, 29th Infantry, detailed to the Aviation Section of the Signal Corps.

General Arnold received the first award for a reconnaissance flight he made on October 9, 1912, from College Park, Md., then the site of the Signal Corps Aviation School, over the triangle Washington Barracks, D.C., Fort Myer, Va., and return to College Park. He piloted the early type Wright biplane, powered with a 40 horsepower engine revolving two propellers in tandem by the chain and sprocket method. The instability of this airplane may be judged from the fact that, upon landing at College Park following the completion of his 41-minute flight, Gen. Arnold's appearance, according to reports, was that of "physical exhaustion and nervousness." He stated that on account of adverse atmospheric conditions during the flight, he was forced to center all his attention to controlling the airplane and was unable to look at the map which he carried in the seat alongside him. He further stated that his altitude on this flight varied from 1400 to 2800 feet, necessitated by the "strong, puffy and gusty wind."

Much water has passed over the dam during this span of 23 eventful years in the progress of military aviation, and in the proceedings of the Board of Air Corps officers, consisting of Lieut.-Colonel Arnold H. Krogstad, Majors Carl Spatz, Frank D. Lackland, Vincent B. Dixon and Lieut. Thomas M. Lowe, convened for the purpose of making recommendations to the Chief of the Air Corps on the award of the Mackay Trophy for 1934, it is stated that of the various flights made during that year, the U.S. Army Alaskan Flight, commanded by Brigadier-General Arnold, was the most meritorious.

Major-General Benjamin D. Foulcis, Chief of the Air Corps, approved this

recommendation.

It is a far cry from the early Wright biplane in 1912, limited to a speed of approximately 40 miles per hour, to the new Martin B-10 Bomber, which in various test flights made by Air Corps pilots, had attained speeds varying from 170 to 243 miles per hour, the last figure representing an outstanding air mail flight from Cleveland, Ohio, to Newark, N.J., when the pilot was favored with a tail wind.

The Alaskan Flight, participated in by 14 officers and 13 enlisted men, utilizing ten B-19 Bombers, involved a total distance estimated at approximately 8,300 miles. The Flight took off from Bolling Field, D.C., on the morning of July 19, 1934, and proceeding via Dayton, Ohio; Minneapolis, Minn.; Winnipeg, Manitoba, Canada; Regina, Saskatchewan; Edmonton, Alberta; Prince George, British Columbia, and White Horse, Yukon Territory, reached Fairbanks, Alaska, on the morning of July 24th.

This flight was made according to prearranged schedules, thus successfully demonstrating that Air Corps units could be moved by air from the continental United States to the Territory of Alaska in the event of an emergency.

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 20,800 square miles of Alaskan territory in the space of three days.

The return trip to Washington, D.C., featured a mass non-stop flight from Juneau, Alaska, to Seattle, Washington, 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 Mackay Trophy was presented to the War Department in 1912 by Mr. Clarence H. Mackay, and every year thereafter, except during 1913 and 1917, it was awarded annually to Air Corps officers for each year's most outstanding flight.

Throughout this period of almost a quarter of a century, General Arnold, one of the Army's pioneer aviators, has been intimately associated with aviation and he has seen it emerge from its swaddling clothes to its present im-

tant position both in the commercial as well as the military field.

Associated with the Trophy are some of the most noteworthy flight achievements of the Air Corps, among which were the expedition of four DeHaviland planes from New York to Nome, Alaska, and return, in 1920, headed by Captain St. Clair Streett; the record-breaking altitude flight of Lieut. John A. Macready in 1921; the record-breaking duration flight of Lieuts. Macready and Oakley G. Kelly in 1922, and their non-stop transcontinental flight the following year; the Around-the-World Flight, headed by Captain Lowell H. Smith, in 1924; the Pan-American Flight around South America, led by Major Herbert A. Dargue, in 1926; the non-stop flight from Oakland, Calif., to Honolulu, T.H., by Captains Albert F. Hegenberger and Lester J. Maitland in 1927; extremely hazardous spinning tests by Lieut. Harry A. Setton in 1928; remarkable long-distance and high altitude photographic flights by Captain Albert W. Stevens in 1929, and the mid-winter flight of the First Pursuit Group, under Major Ralph Royce, from Selfridge Field, Mich., to Spokane, Wash., and return, in 1930, under most adverse weather conditions.

In addition to General Arnold, other early Army fliers still in active service who won the Mackay Trophy are Majors Shepler W. FitzGerald and Byron Q. Jones, both of whom are at present members of the War Department General Staff. Major FitzGerald shared the award for 1914 with the late Captain Townsend F. Dodd for a reconnaissance flight over San Diego, Calif. Major Jones, recipient of the 1915 award, established an American duration record with a solo flight of 8 hours and 53 minutes.

Second Lieuts. Joseph E. Carberry and Fred Seydel received the award for 1913 for a reconnaissance flight over San Diego, Calif.

Colonel Edward V. Rickenbacker, premier American "Ace," was awarded the Trophy for 1918 for his extraordinary achievement in bringing down 25 enemy aircraft during the World War.

For the year 1919, the award was made to Captains Lowell H. Smith, John O. Donaldson, Felix Steinle, Lieuts. Belwin W. Maynard, Alexander Pearson, R.S. Worthington, E.M. Manzelman, R.G. Bagby, D.B. Gish and Lieut.-Colonel Harold E. Hartney for their flights between the Atlantic and Pacific Coasts and return.

Those who shared with Captain Streett in the 1920 award were Lieuts. Clifford C. Nutt, Eric H. Nelson, C. E. Cramrine, Ross C. Kirkpatrick, Sgts. Edmond Henriques, Albert R. Vierra and Joseph

E. English.

The personnel of the Around-the-World Flight who shared with Captain Lowell H. Smith the award for 1924 were Lieuts. Eric H. Nelson, Leslie P. Arnold, Leigh Wade, John Harding and Henry H. Ogden.

The personnel of the Pan-American Flight, under the leadership of Major Dargue, were Captains A.B. McDaniel, Ira C. Baker, C.F. Woolsey, 1st Lieuts. B.S. Thompson, L.D. Weddington, Charles McK. Robinson, Muir S. Fairchild, Ennis C. Whitehead and John W. Benton.

Major-General Benjamin D. Foulois, Chief of the Air Corps, received the award for 1931 for his flight leadership during the Air Corps Maneuvers that year, which constituted the largest concentration of airplanes flying in military formation in the history of the Air Corps.

The Navajo Indian Relief Flight was adjudged the most meritorious one in the Air Corps in 1932, and the award was made to 1st Lieut. Charles H. Howard as Commander of the 11th Bombardment Squadron and representative of this organization in this flight. Eight Bombardment airplanes from this Squadron were flown over dangerous mountains and canyon regions for the period of nearly a week, and food dropped over various villages inhabited by the Navajo Indians, who suffered hunger and other privations through being isolated from surrounding communities due to a snow storm unusually severe in its intensity.

First Lieut. James H. Doolittle, now a Major in the Air Reserve, shared with the late Lieut. Cyrus Bettis the award of the Trophy for 1925. In October of that year, Lieut. Bettis, in the Pulitzer Trophy Race, established a new speed record for land planes over a closed circuit by averaging 248.976 miles per hour. Two weeks later, Lieut. Doolittle, winner of the Schneider Trophy Race at Baltimore, Md., with the same airplane which was utilized by Lieut. Bettis in the Pulitzer Trophy Race, save the substitution of pontoons for the landing wheels, established a new speed record for seaplanes by averaging 232.875 miles per hour.

Captain Westside T. Larsen, Air Corps, was awarded the Trophy for 1933 in recognition of his pioneering flights in connection with the development of methods of procedure of Aerial Frontier Defense. These flights involved instrument take-offs and landings on both land and water, proceeding to designated points at sea and returning therefrom under instrument flying conditions. Through Captain Larsen's untiring zeal, various obstacles incident to flights of this nature were surmounted and the way was paved for the training of other Air Corps officers in the technique of this highly important art.

General Arnold becomes a "repeater" among the worthy company of holders of the

Mackay Trophy award who are still actively connected with the Army Air Corps, sharing this distinction with Captains Oakley G. Kelly and Lowell H. Smith.

It will be noted from the foregoing

that former Lieut. John A. Macready (now Major, Air Reserve) won the Trophy for three consecutive years, and that former Lieut. Eric H. Nelson (now Major, Specialist Reserve) won it on two occasions.

TEMPORARY PROMOTION IN THE AIR CORPS

The recent action of the War Department in putting into effect a policy of according temporary promotion to Air Corps officers is the culmination of a number of recommendations from various sources. To review briefly these recommendations:

The Morrow Board recommended as follows: "To provide rank commensurate with command during the present shortage of field officers in the Air Corps (Air Service), we recommend that Congress be asked to provide that the assignment by the Secretary of War of Air Corps officers to flying commands, such as wings, groups, squadrons, and schools, and not to exceed 12 important air stations, shall, when the Chief of the Air Corps certifies that no officers of permanent suitable rank are available for such assignment, carry with it the temporary rank appropriate to such command, for the period of such assignment."

The Air Corps Act of 1926 embodied this recommendation in substantially the same language, but added that the temporary rank would be limited to two grades above the permanent rank.

The War Department Special Committee (Baker Board) on Army Air Corps recommended that a system of selection and retirement similar to that in effect in the Navy and Marine Corps be provided for the whole Army, and then recommended further as follows:

"Pending the time when action under the previous suggestion results within the Air Corps in rank commensurate with responsibility, place in force the provisions of the Air Corps Act of 1926, providing for temporary advance in rank."

This recommendation was concurred in by the Federal Aviation Commission, which recommended as follows:

"There should be immediate and positive action to improve the promotion situation in the Army, with special reference to the Air Corps. The authority to provide temporary rank in the Air Corps, to make the rank commensurate with the responsibilities held, should be broadened and then used."

The War Department has issued War Department Circular No. 7, dated January 25, 1935, to make these recommendations effective, and to announce an initial list of the various positions which are to carry advanced rank. Further consi-

deration will be given to the provisions of Circular 7 of the War Department with a view to expanding the initial list of positions involving temporary grade to keep pace with the expansion of authorized programs of personnel and equipment. Thus there will be in the future a larger opportunity to accord temporary grade commensurate with the responsibilities discharged.

Since the purpose of this advanced rank is to accord to an officer discharging important duties the rank commensurate with his responsibilities, the temporary grade pertains to the position, and will therefore be given to the officer holding such position, to be retained by him during the period that he continues in the position.

In order to be eligible for a given position, an officer must possess the flying, technical, and other qualifications needed to discharge the duties of that position. It will continue to be necessary to have officers qualify themselves in Air Corps technical supply, maintenance, and administrative duties, as well as in the duties pertaining to tactical units. It will also be necessary to have qualified officers for duty on the General Staff, in the Office of the Chief of the Air Corps, as instructors and students in the general and special service schools, and in other positions for which the law does not provide temporary promotion.

Considerations of providing the broadest possible training for each officer, and securing equality of opportunity for all, will require the rotation of qualified officers in these positions and those carrying advanced rank.

War Department Circular No. 6 prescribes the method of classifying officers with respect to technical and other qualifications needed to discharge the duties involving temporary promotion.

The Chief of Air Corps is charged, under the Air Corps Act and War Department Circular No. 7, with the responsibility of certifying the officers for these positions involving advanced rank. In so doing he will, under War Department policies, give due weight to the importance of securing an exchange of officers between the GHQ Air Force and the other duties of Air Corps officers, in order that there may be obtained by this means a mutual understanding of

each other's problems and a furtherance of the best interests of the Service as a whole.

AIR CORPS OFFICERS RECEIVE TEMPORARY PROMOTIONS

Special Orders of the War Department thus far issued announced the temporary promotion of 35 Air Corps officers assigned to various duties at the Materiel Division at Wright Field, O.; the four Air Depots, the Air Corps Engineering School, and with various units of the G.H.Q. Air Force at Barksdale, Hamilton, Langley, March and Selfridge Fields.

These promotions became effective March 2, 1935, and the officers affected will retain their advanced rank for the period of their respective assignments. The Chief of the Air Corps has certified that no officers of suitable permanent rank are available for the duties assumed by the officers promoted.

Eight officers on duty as chiefs of branches at the Materiel Division were advanced to the rank of Major, viz: Captains James C. Taylor, Aircraft; James A. Woodruff, Armament; Edward H. Powers, Power Plant, and David G. Lingle, Repair, all in the Engineering Section; Kenneth B. Wolfe, Inspection Branch, Procurement Section; Bennett E. Meyers, Administrative Branch, Field Service Section; Frank D. Hackett, Miscellaneous Supply and Maintenance Branch, Field Service Section, and Victor H. Strahn, Chief of Flying Branch, Administrative Section.

Captain Romeyn B. Hough, Jr., Chief of the Industrial War Plans Section, was advanced to the rank of Lieut.-Colonel.

At the Middletown, Pa. Air Depot, Major Lawrence S. Churchill, Depot Commander, was advanced to the rank of Colonel; and to the rank of Major, 1st Lieut. Robert W.C. Wimsatt, Executive Officer; Captain Albert E. Simonin, Engineering Officer, and Captain Charles W. Steinmetz, Supply Officer. First Lieut. John A. Austin, Chief Inspector, was advanced to Captain.

Four officers at the Fairfield, Ohio, Air Depot were advanced in rank, the Depot Commander, Major Fred E. Coleman, to Colonel, and the other three to Major, viz: Captains Burton F. Lewis, Executive Officer; Harrison W. Flickinger, Engineering Officer, and James F. Doherty, Supply Officer.

At the San Antonio Air Depot, Duncan Field, Texas, three Captains were advanced to the rank of Major, viz: Morris Berman, Executive Officer; Ralph B. Walker, Engineering Officer, and Robert V. Ignico, Supply Officer.

Three Captains at the Rockwell Air Depot, Calif., were advanced to Major, viz: Charles G. Breneman, Executive Officer; Courtlandt S. Johnson, Engineering Officer, and Stephen J. Idzorek, Supply Officer.

Captain Frederick M. Hopkins, Jr., on duty as Assistant Commandant, Air Corps Engineering School, Wright Field, was advanced to Major.

Officers on duty with the 3rd Wing advanced to the rank of Lieut.-Colonel were Majors George E. Lovell, Jr., Executive and Operations Officer; Earl L. Naiden, 3rd Attack Group Commander, and Millard F. Harmon, 20th Pursuit Group Commander. Captain John P. Temple, Supply Officer, 3rd Wing, was advanced to Major.

Major Ralph Royce, Commander of the 1st Pursuit Group, Selfridge Field, was advanced to Lieut.-Colonel.

The rank of Lieut.-Colonel also was given to Majors Adlai H. Gilkeson, Commander of the 8th Pursuit Group, Willis Hale, Commander of the 2nd Bombardment Group, both at Langley Field, Va.; and to Clarence L. Tinker, Commander of the 7th Bombardment Group at Hamilton Field, Calif.

Captains Walter H. Reid, Supply Officer, 2nd Wing, Langley Field, and Ray A. Dunn, Supply Officer, 1st Wing, March Field, Calif., were advanced to Major.

MAJ. DUNCAN ASSUMES COMMAND OF LUKE FIELD

Army airmen in the Hawaiian Department extended a warm welcome to Major Asa N. Duncan, Air Corps, the new commanding officer of Luke Field.

As the Transport REPUBLIC approached the entrance of Honolulu harbor, a formation of Bombardment and Observation airplanes circled the vessel to honor him as well as five other officers of the Air Corps assigned to duty in the Islands, namely, 1st Lieut. William G. Bowyer, 2nd Lieuts. John K. Gerhart, William L. Travis, Milton F. Summerfelt and Franklin S. Henley. For the three last named officers this was their first duty assignment as members of the Air Corps. They graduated from the U.S. Military Academy in June, 1933, and from the Advanced Flying School, Kelly Field, in June of the following year.

In taking over the command of Luke Field, Major Duncan relieved Captain Wolcott P. Hayes, who held the command for several months following the departure of Major Vincent B. Dixon for duty in the Office of the Chief of the Air Corps as Assistant Executive, the position held by Major Duncan prior to his departure for foreign service. Major Duncan held several assignments during his tour of duty in Washington, and the personnel in the O.C.A.C. extend to him best wishes in his new assignment.

LIST OF MASTER SERGEANTS, AIR CORPS

January 31, 1935

Arranged According to Dates of Rank

1. Dolan, John	Mitchel Field	69. Maricle, Clarence M.	Panama
2. Stevenson, Calvin T.	Randolph Field	70. Mansfield, William J.	Post Field
3. Murphy, Christopher	Hawaii	71. Nelson, Otto F.	Scott Field
4. Cote, Ernest	Kelly Field	72. Leiby, Charles C.	Langley Field
5. Tittel, Horst W.	Mitchel Field	73. Brown, Ernest	Hawaii
6. Linard, Albert Y.	Ft. Leavenworth	74. Kelly, Thomas J.	Hamilton Field
7. Hamlin, Clyde B.	Barksdale Field	75. Carducci, Fred V.	Mitchel Field
8. Randle, Thomas P.	Hamilton Field	76. Ryan, William J.	Kelly Field
9. Ruef, Arnold	Fort Riley	77. Lunday, Samuel	Fort Bragg
10. Costello, Joseph	Brooks Field	78. Brown, Olin	Scott Field
11. Kellems, George W.	Randolph Field	79. Rhodes, Wilbur R.	Barksdale Field
12. Bertram, Herbert J.	Scott Field	80. Gribble, John T.	Panama
13. Hale, Carl T.	Hawaii	81. Wadsworth, Frank O.	Selfridge Field
14. Rickliff, Harry J.	Brooks Field	82. Manquart, Walter R.	Selfridge Field
15. Brandner, Jacob J.	Selfridge Field	83. Sparks, George L.	Philippines
16. Bernhard, Alfred	Crissy Field	84. Levy, Herman	Randolph Field
17. Wajdowicz, Kazimierz	Rockwell Field	85. Wallace, Bernard	Randolph Field
18. Strosnider, Clyde M.	Hawaii	86. Cooper, Earl L.	Randolph Field
19. Samarin, David	Wright Field	87. Williams, John E.	Kelly Field
20. Gosnear, Henry K.	Selfridge Field	88. O'Briant, Conrad L.	Kelly Field
21. Pulliam, William B.	Randolph Field	89. Pirisky, Joseph	Langley Field
22. Busch, Hans E.	March Field	90. Audhoff, Charles	Langley Field
23. Carmean, Harry P.	Randolph Field	91. Haynes, Clarence	Panama
24. Kilheffer, Cecil L.	Hamilton Field	92. Smith, DeWitt E.	Barksdale Field
25. English, Joseph E.	Panama	93. Travis, Robert R.	Panama
26. Biesiot, Peter	Kelly Field	94. Arnold, William	Hawaii
27. Beck, Harry	Mitchel Field	95. Hancy, Floyd E.	Langley Field
28. Donohoe, Michael J.	Fort Crockett	96. Granger, Albert	Fort Crockett
29. Miller, George	Crissy Field	97. Hughes, William C.	Scott Field
30. Fitch, William F.	Panama	98. Kindergram, Joseph	Hawaii
31. Johannsen, Walter	Kelly Field	99. Klutz, William E.	Kelly Field
32. Bennett, William J.	Scott Field	100. Neadell, Ezra F.	Randolph Field
33. Rector, Otto M.	Hawaii	101. Mills, Burch L.	Kelly Field
34. Dean, Charles H.	Maxwell Field	102. Feltz, William H.	Mitchel Field
35. Turner, Harry E.	Kelly Field	103. Hewitt, Harvey H.	Hawaii
36. Richards, Thomas E.	Mitchel Field	104. Braavard, Kristjan	Brooks Field
37. Chapman, Harry A.	Hawaii	105. Brittonson, Carl A.	Fort Crockett
38. Holtzman, Albert H.	Fort Crockett	106. Delgren, Carl B.	Brooks Field
39. Blakey, Walter M.	Brooks Field	107. Cates, Joe W.	Mitchel Field
40. Hawley, Victor C.	Langley Field	108. Dawkins, Paul H.	Post Field
41. Jones, Robert F.	Kelly Field	109. Dohrant, Henry A.	Hamilton Field
42. Bishop, Joseph E.	Scott Field	110. Stout, George	Langley Field
43. Wiseman, Ruben E.	Fort Crockett	111. Wilson, William A.	Rockwell Field
44. Gambie, Albert C.	Fort Bragg	112. Bills, Harry F.	Kelly Field
45. Davidsen, George E.	Barksdale Field	113. Kerr, Robert H.	Langley Field
46. Starling, Walter L.	Mitchel Field	114. Rose, Harry	Langley Field
47. Billker, Frank G.	Mitchel Field	115. Goff, Grover C.	Philippines
48. Costello, Elmer G.	Hawaii	116. Smith, John T.	Randolph Field
49. Murphy, David T.	Scott Field	117. Nero, Ulysses S.	Langley Field
50. Sorenson, Sigurd L.	Randolph Field	118. Waugh, John L.	Barksdale Field
51. Adams, Wilbur	Panama	119. Redfern, William R.	March Field
52. Fagg, Homer J.	Philippines	120. Crowder, Hawkins	Chanute Field
53. Mehagar, James D.	Brooks Field	121. Bianco, Joseph	Hawaii
54. Bottrill, Ralph H.	Kelly Field	122. Lucy, Willard D.	Panama
55. Tate, Fugh A.	Maxwell Field	123. Hartine, Boyd W.	March Field
56. Wiese, William E.	Hawaii	124. Anders, Joseph	Fort Crockett
57. Beecher, Milo	Fort Crockett	125. Fitzpatrick, John J.	Randolph Field
58. Slink, Stewart C.	Philippines	126. Crawlin, Charles F.	Hamilton Field
59. Bradbury, Carl W.	Fort Crockett	127. Wilson, Harry	Philippines
60. Taylor, Clyde M.	Langley Field	128. Petersen, Christian	Hamilton Field
61. Kashe, Harry R.	Langley Field	129. Davis, Samuel J.	Barksdale Field
62. Maylon, Charles	Bolling Field	130. Anderson, George	Randolph Field
63. Loupos, Nico G.	Scott Field	131. Turner, Arthur H.	Barksdale Field
64. Grant, Joe	Randolph Field	132. Crawley, James H.	Selfridge Field
65. Matos, Andrew	Bolling Field	133. Flynn, Louis E.	Brooks Field
66. Rumpel, Ralph J.	Panama	134. Cleverley, George J.	Kelly Field
67. Frazer, John W.	Kelly Field	135. Nelmar, John H.	Panama
68. Putnam, Marion G.	March Field	136. McKibbin, Martin H.	Kelly Field

137. Baxter, Wilford L.	Selfridge Field	175. Haddow, Robert F.	Hawaii
138. Reynolds, Monroe	Randolph Field	176. Berg, Walter S.	Chanute Field
139. McComas, Thomas R.	Chanute Field	177. May, Andrew	Rockwell Field
140. Stutts, Johnie W.	Randolph Field	178. Hayes, Hal F.	Bolling Field
141. Wilkes, Henry G.	Barksdale Field	179. Chowaniec, John	March Field
142. Butcher, John W.	Langley Field	180. Gilbert, Grover B.	Chanute Field
143. Wells, Leslie L.	Hamilton Field	181. Klosowski, Alexander	Maxwell Field
144. Lesperance, Alex	Philippines	182. Short, Ronald E.	Langley Field
145. Garner, Gervais J.	Kelly Field	183. Kolb, Julius L.	Panama
146. Taylor, Archie L.	Kelly Field	184. Lee, James A.	Aberdeen
147. Spoor, William W.	Panama	185. Richards, Thomas W.	Rockwell Field
148. Johnson, Chester H.	Langley Field	186. Morrill, Murton K.	Philippines
149. Dalton, Cody	Scott Field	187. Passock, John	Chanute Field
150. Susemihl, Magnus F.	Brooks Field	188. LaChance, Frank	Langley Field
151. Sweeney, Donald E.	Kelly Field	189. Duffin, Eugene H.	Maxwell Field
152. Berthanna, Maurice	Maxwell Field	190. Hohenst, William F.	Panama
153. Parker, Paul W.	March Field	191. Osburn, Chanley J.	Kelly Field
154. Brockaway, William B.	Hawaii	192. Horn, Aura E.	March Field
155. Colby, Chester F.	Chanute Field	193. Gail, Cecil	Patterson Field
156. Cox, Fletcher J.	Philippines	194. Stockwell, Raymond	Fort Lewis
157. Miller, Arvin E.	Langley Field	195. Young, Oscar	Chanute Field
158. Roth, Benjamin	Mitchel Field	196. Madorey, Frank B.	Fort Crockett
159. Merson, Vernon H.	Philippines	197. McAlho, Stephen	March Field
160. Vessey, William E.	Panama	198. Taylor, George O.	Brooks Field
161. La Londe, Emile E.	Bolling Field	199. Baird, Clarence	Langley Field
162. Woodward, Edwin B.	Harshorn Field	200. Church, William R.	Kelly Field
163. Killgore, Alvan	Philippines	201. Wechsler, Henry	Mitchel Field
164. Klingler, George P.	Selfridge Field	202. Hixson, William A.	Langley Field
165. Hukill, Leo	Bolling Field	203. Kieft, George W.	Mitchel Field
166. Montes, Luis H.	Kelly Field	204. Caywood, John	Scott Field
167. Shanley, Arthur J.	Randolph Field	205. Shakespeare, Thomas	Hawaii
168. Simmons, Robert J.	Kelly Field	206. Fraley, Daniel W.	Chanute Field
169. McGaha, Robert C.	Selfridge Field	207. Foyk, Charles	Mitchel Field
170. Rich, William J.	Chanute Field	208. Mondel, George	Maxwell Field
171. Smith, Carlton P.	Brooks Field	209. Landrock, Joseph F.	Selfridge Field
172. Stanaland, George P.	Philippines	210. Carter, James E.	March Field
173. Lersels, James R.	Hawaii	211. Brantley, Carl H.	Langley Field
174. McAleer, Edward	Langley Field	212. Hamer, Mike	Randolph Field

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INSTRUMENT FLYING TRAINERS

Reports from various activities indicate that the instrument flying Link type Trainers, which were procured for the training of Air Corps personnel in the use of blind flying instruments, have proved very satisfactory and reduce the amount of training in the blind flying airplane approximately two hours.

Regular periods of training on this device are being required at the activities where they are now located. The Office, Chief of Air Corps, recently issued instructions that additional trainers be procured as soon as funds become available. These will be allocated to Air Corps stations, as follows: seven to the Air Corps Training Center, three to Maxwell Field, two each to Barksdale and Bolling Fields, and one each to Clark, Nichols, Luke, Wheeler, Albrook, France, Hamilton, Crissy, Wright, Selfridge, Scott, and Bolling Fields, Fort Leavenworth and the Office of the Chief of the Air Corps.

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STORAGE OF GASOLINE AT NATIONAL GUARD CENTERS

Through the cooperation of the National Guard authorities, the Materiel Division of the Air Corps has made arrangements for the storage of the Regular Army supply of fighting

grade aviation gasoline at the National Guard activities indicated below:

Alabama National Guard, Roberts Field
Ark. National Guard, Arkansas N.G. Airport
Colorado National Guard, Lowry Field
Indiana National Guard, Stout Field
Ohio National Guard, Cleveland Airport
Tennessee National Guard, Sky Harbor Airport

The Regular Army supply of aviation gasoline at the above stations is on the property account of the Air Corps Instructor, and issues are made in the same manner as at a Regular Army station. The availability of these supplies eliminates the necessity for reimbursement to the National Guard organization when Regular Army aircraft are serviced at the airports concerned. It is the desire of the Materiel Division to make similar arrangements at other National Guard activities when the volume of traffic warrants such action and the necessary storage equipment is available.

The National Guard activities indicated in the foregoing also receive fighting grade aviation gasoline on Materiel Division quarterly contracts. The Materiel Division also furnished the fighting grade aviation gasoline for the Illinois National Guard, Chicago Municipal Airport; the Michigan National Guard, Wayne County Airport, and the Washington National Guard, Felts Field, Spokane. When

Regular Army aircraft are serviced at these airports, reimbursement for the supplies is made in the usual manner as for other National

Guard activities not participating in the Materiel Division contracts.

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THE NEW WHEELER FIELD

In his first contribution, the Correspondent from Wheeler Field, T.H., in welcoming the return of the News Letter, remarks that it seems an appropriate time to inform the Air Corps regarding that station. He goes on to say: "While we hope it may not be long until a 'Cross Country' from the mainland to Wheeler Field will be a routine training flight, we appreciate the fact that the two thousand two hundred miles of Pacific Ocean, separating us from the mainland, will prevent the bulk of the Air Corps from visiting Wheeler Field for the present.

The present Wheeler Field has been completed and in use only since May, 1933. The old Wheeler Field lies immediately adjacent to the present field. All buildings on the old field, except two old hangars used for storage, have been dismantled. The landing surface of the old field is in good condition and is used by all aviation units on Oahu as an outlying training field.

The new Wheeler Field is a modern flying field in every respect. The landing surface lies a mile and a quarter in the direction of the prevailing wind and averages nearly a half mile wide. The surface is red volcanic ash, eighty percent covered with a new growth of Bermuda grass. There are no hard surface runways at present.

Wheeler Field is the largest landing field in the Hawaiian Islands and the only field large enough for the take-off of large transport type airplanes with maximum load. The plan for the field contemplates that the old and new landing surfaces shall be joined to form one huge field.

Wheeler Field is the station of the 18th Pursuit Group, which is composed of the 6th and 19th Pursuit Squadrons and the 73th Service Squadron. The 11th Photo Section and 23th Attack Squadron are stationed at Wheeler Field and are attached to the 18th Pursuit Group.

The Pursuit Squadrons are equipped with P-12B, C, and E type airplanes. The Service Squadron operates OA-3 and O-19B type aircraft, and the Attack Squadron, A-3 type airplanes. The Photo Section employs an O-19C for photographic work. The number of assigned aircraft is adequate for effective flying training, but the type of Attack aircraft is obsolete.

The 18th Pursuit Group is manned by an average of 60 officers and 550 enlisted men. The bulk of the officer personnel is quartered in the five sets of field officers' quarters and the 37 sets of company officers' quarters on

the post. A few officers of other branches are quartered at Wheeler Field and a small number of Air Corps officers (usually not to exceed ten) are on commutation status. It is seldom necessary for an Air Corps officer to be on commutation status for more than three months. Quarters of the post, while not expensive, are generally scarce and not entirely satisfactory.

The quarters on the post, both for officers and noncommissioned officers, are one story, flat roof, concrete block structures faced on the outside with colored stucco. They are new, very attractive, quite comfortable, and consist of - a large lanai (porch), living room, dining room, kitchen, 3 or 4 bedrooms, servants' quarters, and a patio.

The noncommissioned officers' quarters are generally similar to the officers' quarters, but somewhat smaller.

The organizations are quartered in four permanent 3-story barracks constructed of concrete block faced with stucco.

The aircraft of each squadron are housed in a new permanent double hangar.

Group Headquarters and all facilities are housed in permanent buildings.

A combined officers' club, mess and bachelor officers' quarters is one of the most attractive buildings on the post. Accommodations are usually available for all bachelor officers assigned to Wheeler Field. The noncommissioned officers also have a very excellent club building.

Wheeler Field is not a separate post as are most Air Corps stations in the States. It is a part of the post of Schofield Barracks which is the home of the Hawaiian Division. The 18th Pursuit Group comes under the control of the 18th Composite Wing for tactical training; under the Hawaiian Air Depot for Air Corps Supply, and under the Hawaiian Division for administration, discipline and supply other than Air Corps.

Operating as a part of the large Post of Schofield Barracks has certain definite advantages from a social, recreational, economical and professional standpoint. A splendid feeling exists between the Air Corps and the personnel of Schofield Barracks. It is believed that the recreational facilities of Schofield are the best in the Army, and that athletics are nowhere so well organized or conducted on such a large scale. The 18th Pursuit Group successfully participates with the units of the Hawaiian Division.

Wheeler Field is located 21 miles northwest of Honolulu on a good, hard surface road. It is approximately in the center of the island of Oahu on a huge plateau about 800 feet above sea level. It is cooler than Luke Field, which is located

on Ford Island in Pearl Harbor. Wheeler Field receives considerable rain during the rainy season, but weather seldom

interferes with flying operations. It is never hot and what is more important at this season - it is never cold.

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DETAIL OF A.C. OFFICERS TO WAR COLLEGE

According to a recent announcement of the War Department, the following-named Air Corps officers have been selected for detail as students at the Army War College, Washington, D.C., for the 1935-1936 course:

Lieut.-Colonel	George H. Brett
Lieut.-Colonel	John F. Curry
Lieut.-Colonel	Barton K. Yount
Major	Robert C. Condee
Major	Walter G. Kilner
Major	Douglas B. Netherwood
Major	Laurence F. Stone
Captain	Francis M. Prady
Captain	Lester F. Miller

Orders effecting these details will issue at an early date, and as soon as the provisions of the War Department Appropriation Bill for the next fiscal year are known.

The orders will direct the officers selected to proceed to Fort Humphreys, Washington, D.C., in time to report to the Commandant of the Army War College between August 15 and 20, 1935.

Ed. Note: Under Par. I, General Orders, No. 1, War Department, February 14, 1935, the military post and reservation designated as Fort Humphreys, Va. will hereafter be designated as Fort Belvoir, Va. Under Par. II of the above order, the military reservation designated as The Army War College, Washington, D.C., will hereafter be designated as Fort Humphreys, D.C.

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CAPTAIN LARSEN LECTURES ON INSTRUMENT FLYING

Interest in military aviation in Spokane, Wash., swelled on a new tide recently when Captain Westside T. Larsen of Rockwell Field, Calif., arrived in a Martin Bomber to lecture officers of the 41st Division Aviation, Washington National Guard, on instrument flying.

Captain Larsen flew north via Salt Lake City and returned via Wenatchee, Wash. Announcement of his coming with the big Bomber attracted a large crowd to the airport to inspect the airplane, the second of its kind to visit Spokane.

The pleasant and willing manner in which Captain Larsen explained the many

details of the airplane increased in Spokane the many friends of the Air Corps.

To the officers of the National Guard Aviation, Captain Larsen presented several new and interesting sidelights on instrument flying, illustrating his lecture with specially prepared charts and pictures. He spoke of the instrument flying courses being conducted at Rockwell Field and praised the officers attending the Air Navigation School for the speed with which they are mastering the subject.

Of particular interest was the drift indicator on the Bomber and the manner it is used with the compass in maintaining a definite course.

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NIGHT FLYING OPERATIONS BY WASHINGTON NATIONAL GUARD AIRMEN

Greater night flying operations are scheduled for pilots of the Washington National Guard as a result of the completion in Washington of the Northern Transcontinental Airway from the Twin Cities to Seattle. Felts Field is now

the division point for two lighted airways one leading to Pasco and Pendleton and the other to Seattle, via Ellensburg. East of Spokane the Northern Transcontinental Airway goes to Missoula, Montana, and Butte, Montana.

The Commission recommends that every effort should be made to secure the enrollment of personnel of air line organizations in the Reserve forces of the Army or the Navy. The belief is expressed that the personnel organizations of the domestic air transport lines should be left largely undisturbed in the event of war, the need for transport pilots being greater on the routes to which they have been trained than in any military service in which they might be inducted. In anticipation of the degree to which military effort would engross the energies of the country, however, it is thought desirable that even those who were sure to be needed in their present transport positions should be enrolled in the Reserve. The War or Navy Department would then be in a position to keep track of them, and to make its own listings of the special duties for which they are qualified, in case it should be desirable in war to release personnel from certain lines for military service, or to transfer them from some lines to others of greater military importance.

The suggestion that enterprises receiving so much direct governmental aid as much be given to the air lines should be under full governmental control to the extent of requiring the enrollment of all their personnel in a Reserve was given careful consideration and rejected. To apply compulsion would, it is feared, endanger bringing the air lines too much under military influence. In any case it is believed that enrollment on a voluntary basis can be so nearly complete that the numerical gains by compulsion would be almost negligible. It is estimated that about three-quarters of the pilots now employed in air transport hold Reserve commissions. If special provision is made for them, and especially if the plan proposed for aviation insurance in the Reserve can be put into effect, the percentage of enrollment can no doubt be materially raised.

Extending the general doctrine of finding an appropriate place in the Reserve for all those who have specialized aeronautical talents, it is felt that some record should be made of the capacity and the availability of the 10,000 or more American civil pilots not employed in air transport. While some of them are over age for any military service, some physically unfit and some possessing so little experience as to start virtually from scratch on any military aviation training that might be given them, still it seems there must be within this body of piloting personnel a substantial amount of ability that would be of direct and immediate use in war. There should be further study of

means of securing its classification and enrollment, of course on a purely voluntary basis.

Much thought was given to the possibility of using a special class of Reserve as a means of lending some financial encouragement to private flying. Hostility was already expressed to direct subsidy to private pilotage or ownership, but it was felt that there might be much in favor of payment of a modest sum each year to those private pilots who demonstrate a certain minimum of competence and who keep up their practice and check in periodically with a military organization. Working over the details of such a plan, complications have appeared so great that any definite recommendation has been withheld. It is urged that something of the sort, or some equivalent means of accomplishing the same results, be kept under continuous study.

There is special advantage in giving attention to this matter now in that it anticipates an inevitable war-time problem. Aside from classifying the personnel, it has appeared that it would be well to prepare for one of the difficulties of war-time expansion by providing special short training courses, designed to supplement the present knowledge of civil pilots by giving them in a few months' time the specifically military training necessary to make them available for prompt mobilization in an emergency. In the event of war, any air force will have to solve the problem of taking into service a great number of prospective pilots with every imaginable degree of aeronautical experience, and of so classifying them as to make the best use of whatever previous training they may have had in abbreviating the period of their preparation for active service. Suggestion is made that courses be now developed to take men who have already shown that they know how to fly, and who display the necessary officer-like qualities, and to give them in the shortest possible period of time the particular things that they lack to make them into military or naval aviators qualified for immediate war service.

While this proposal for specialized training courses has obvious administrative complications, the Commission feels it to conform so nearly to one of the special problems of war, and to promise so valuable an experience and to be so useful in increasing Reserve personnel, that it earnestly commends it to the study of the War and Navy Departments.

Asserting that for everyone engaged in aviation the problem of insurance is an ever present worry and pointing to the extra heavy premiums charged when any profession connected with aviation is involved, the Commission, while taking into consideration the fact that the

standard government insurance is now available in amounts not exceeding \$10,000 to Reserve officers if they apply for it at a training school or on extended active duty, believes that the government should make some special provision for those who have qualified for military flying and enrolled in the Reserve, in order that they may fly as much as they desire and under any conditions that seem to them proper without considering the effect on their insurance policies.

The suggestion is made that government insurance, covering the aviation risk exclusively, be made available in amounts substantially beyond the present limitation, so making it possible for the officers to carry commercial life policies excluding the aviation hazard and to avoid any special abnormal increase in their premiums. We are recommending that in creating such insurance it very frankly be kept off an actuarial basis, with premiums arbitrarily set at a moderate level not fully covering the statistically indicated hazard but high enough to insure that only the amount really needed will be taken.

This proposal is made especially with reference to Reserve officers. The Commission foresees that there will be immediate protest that this is a discrimination against the regular service. Any corresponding recommendation there is omitted because insurance for the Regulars seem to be necessarily intertwined with the whole question of flying pay, now undergoing renewed study by an interdepartmental committee. The Regular aviator now receives recognition of his increased hazard in a 50 percent increase in his base pay, supposedly designed to provide, among other things, for the payment of surcharges on insurance premiums. The Reservist may have quite as high a surcharge to meet on an ordinary commercial premium, yet his total of active duty during the year is so small that his flying pay in most cases amounts to no more than a couple of hundred dollars. His is the case that seems particularly urgent from the insurance point of view, and suggestion is made that his case be given special attention as an additional inducement for the best aviation personnel to enter and remain in the Reserve.

Quite aside from any protection that may be furnished by insurance, it seems clear that members of all arms should receive equal treatment in the event of actual injury or death. Under the present law and regulations, Reserve officers on protracted active duty with the Army or Navy are given substantially the same treatment and privileges as Regular officers, including the privilege of hospitalization in case of injury and of compensation for dependents in case of accidental death. Reservists

on inactive duty, performing their flight practice from time to time through the year, receive on the other hand only limited hospitalization if injured, no retirement privileges, and no death benefit except a small contribution to funeral expenses. Officers of the National Guard, when practicing on government-owned airplanes outside their regular squadron drill periods, are reported to get even less protection.

Before aviation became a factor in military operations this discrimination may have seemed a minor matter, as the training of the Reserve in the other arms was not such as to make injury or death at all likely. With the coming of aviation the situation has undergone radical change, for the hazards of military flying are ever present and are quite as acute for a Reservist as for a Regular. It is accordingly recommended that the two groups be brought to a parity of treatment.

Convinced that aeronautical progress, in future as in the past, will be in direct proportion to the engineering ability and sound judgment of the technical personnel charged with its development, and which is particularly true in the military Services, such administrative and legislative steps as necessary should be taken to provide each Service with an adequate staff of professional specialists.

The development of personnel for the special responsibilities of aeronautical design, construction and procurement has never been placed upon a clearly established basis. There is at present no system for recruiting and training officers to carry on this important work. Aeronautics has passed through its pioneering stage and has fully earned a permanent status in the Army and Navy. The necessary group of aeronautical engineers needs also to be placed upon a permanent basis. A decision has indeed to be taken on whether primary dependence is to be placed on officers or civilian employees for technical work. The Navy has heretofore relied almost entirely on officers, while the Army has made a much larger use of civil-service personnel.

The past record of the Naval Bureau of Aeronautics in the handling of engineering development and procurement matters appears to leave little to be desired. This Bureau has had the continued services, in a responsible capacity, of officers of the Corps of Naval Constructors trained and experienced in industrial problems. There has been recently, however, a tendency to depart from former methods and to evolve a new plan by which an indefinite number of line officers are to be given basic training in aeronautical engineering. If this plan be placed in operation in such a way that the group of officers so trained can be continuously employed upon the work of

their specialty, with opportunities of advancement in rank equal to those of their line contemporaries, then the procedure still lacks the essential requirements of a professional status. We cannot conceive that a proper esprit de corps can be developed on such a basis. It cannot be conducive to efficiency or professional morale for the members of a professional group to be carried as extra members of an executive branch with an implication of restricted qualifications. The tendency would be for the more able officers to avoid specialization under such circumstances.

The balance of advantage would seem to dictate that aeronautical engineers should be commissioned in a staff corps, either a new one or the present construction corps, whose head should be responsible for the progress of its members in professional ability and experience.

There should be legislative authorization for a definite number of aeronautical engineers in each rank, sufficient to perform the peace-time work of the Navy with a reasonable surplus for the immediate requirements of war. To determine numbers, account should be taken of Reserve personnel available to be recruited from among the professional aeronautical engineers in civil life.

Officers to be designated as aeronautical engineers should be selected annually from recent Naval Academy graduates of special aptitude and should be given the opportunity to acquire practical experience in all phases of aeronautical work, including sufficient flight training for their specialty.

The Army Air Corps situation as regards aeronautical engineers also needs attention. Selected officers have been given special education and detailed to professional duty while others, after professional education, have been assigned to general duty. There appears to be no system, through rotation of tours of duty, to provide broad engineering and industrial experience for officers who must assume important administrative responsibility for procurement. The remarks made as to the desirable method of developing a staff of aeronautical engineers in the Navy apply in general to the solution of the similar problem in the Army Air Corps. A specific plan is not proposed, but recommendation is made that the War Department take stock of the present Air Corps personnel and devise an organization by which necessary specialists can be recruited, developed, and utilized effectively under the guidance of a leader of their own number.

PROCUREMENT OF MILITARY AND NAVAL AERONAUTICAL MATERIEL

The problem of air force materiel appears to divide naturally into three parts. There must be enough modern air-

aircraft in being to carry on peace-time exercises and to be ready for sudden appearance of war. There must be production facilities capable of rapid expansion to meet expanding war-time needs and to make up for the fantastically rapid wastage of equipment under war conditions. There must be a policy of development which will assure that the Service equipment currently in use will never be allowed to fall into a state of serious obsolescence, and that new types of steadily improving quality will always be in course of preparation.

All three points are essential, but the greatest among them is the third. Aircraft production can be stepped up, if threat of war seems to impend, on a few months' notice. Plants normally engaged in other types of work of less military importance can be converted to the building of aircraft in but little longer. But to develop a fundamentally new type of airplane or of engine to the point where it is ready to risk production takes years; not one or two merely, but several. Design and development cannot be extemporized.

If either quality or quantity had to suffer for economic reasons, there should be no hesitation in advising that substantial sacrifices be made under the second heading to maintain the highest possible standard under the first. It is not meant to minimize the importance of price. It must be taken into account, and a wide difference of price may often justify a minor sacrifice in performance. Price determines the number of aircraft that can be bought with a given amount of money currently provided. More than that, it serves also as a rough measure of the man-hours and facilities required for production of the type, and so of the demand that its production would make on the national man-power and industrial plant in war.

Price must, however, be kept as a rule in a secondary position. "We are convinced," says the Commission, "of the soundness of the basic principle that procurement policy should be planned with primary reference to getting for the Services the best equipment that the current state of the art allows, and keeping in constant development new equipment to take advantage of the constantly accruing advances in the art of aircraft design."

The value of an industry manufacturing military aircraft cannot be gauged in terms of its performance in peace alone. If no conditions except those of peace were ever to be encountered, there would be no need for military aircraft and no need for any kind of an industry to build them. The industry functions in peace with primary reference to the possibility that it will be called upon to play a part in war, and the test of fitness for war lies in the ability to expand and accelerate production with enor-

mous rapidity without loss of the organization's efficiency or unreasonable increases of cost.

There are two contending views on the organization of an aircraft industry. Some witnesses presented to the Commission the belief that readiness to expand is best assured by the maintenance of a very large number of individually small units. Others have maintained that larger units, permitting of a more complete framework of industrial organization and less dependent for their functioning on the ability of a single individual to watch over every detail, are more elastic and that a smaller number of larger companies is to be preferred.

The second view seems to accord with the general lessons of experience in industrial management. It seems in general to correspond most closely to the requirements of this particular industry and to the conclusions to which European nations have generally come.

In any case, it would appear necessary to place some limitation on the number of separate manufacturing units kept in military production because of the limited number of separate orders that can at any time be in course of execution. The Army purchases about seven or eight distinct types of aircraft, only five of which are bought in any considerable numbers. The Navy has an extreme production range of about the same order. Even if two sources of supply were kept always in production upon each of the major types, and if no manufacturer were allowed to participate in the development of more than a single type (which would seem a most undesirable restriction) there would be room for only about twenty military manufacturers at the very outside. Allowing for inevitable duplications where one manufacturer attains a leading position in the development of two or three types of aircraft, and for the impossibility of splitting the limited orders given for some types among two manufacturers without serious waste, we conclude that the actual maximum number of permissible units is a dozen or less rather than a score or more. To increase beyond that level would seem to make it inevitable that some of the plants will always be virtually out of work and in a state of collapse, a condition undesirable from any point of view. It has always to be remembered that this industry is peculiar in that it has essentially but a single customer. Compared with government orders, the total of other business to be done at home and abroad is still of minor magnitude. At the present time there are seven independent units actively engaged in military aircraft production in the United States, making it their major and in some instances their sole business. About as many more are in receipt of occasional orders and must

be considered as a part of the military industry, while a number of others are without Army and Navy business but clamoring to receive it.

This matter was gone into at some length because of a curious argument that the adequacy of the nation's military aircraft industry can be gauged by the number of independent units that it contains. It has been asserted that a country with forty manufacturers living from hand to mouth is inherently in a better position than one with half a dozen well organized plants able to turn to any type of work and to carry on and expand their operations without exclusive dependence upon any one individual's supervision. "We do not agree," says the Commission. "While a monopoly and the destruction of competition are of course to be shunned, we believe that a reasonable degree of concentration of manufacturing capacity is desirable for stability and to provide an integrated organization for emergency expansion.

To be continued.

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FAST TRAVELING BY 17TH PURSUITERS

An average speed of 223 miles per hour was maintained by the 17th Pursuit Group from March Field while traveling from El Paso, Texas, to Hensley Field, Dallas, Texas. The 17th, consisting of three squadrons equipped with P-26A's and commanded by Captain Ira C. Eaker, were enroute from March Field to Maxwell Field, Ala. A landing was made at Barksdale Field, La., for an overnight stay, but bad weather kept the Group there for two days. The three squadrons were commanded by Captains Morris, Peck and Hine.

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CRISSY FIELD OFFICERS HEAR GEN. WESTOVER

While on his inspection tour of Pacific Coast stations, Brigadier-General Oscar Westover, Assistant Chief of the Air Corps, visited Crissy Field, Presidio of San Francisco, Calif., and gave a short talk before the assembled officers of the field, briefly outlining some of the War Department policies applying to the Air Corps in regard to replacement and procurement of airplanes, training requirements and personnel increments. Although his stay was brief, General Westover found time to give attention to some of Crissy Field's problems.

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Thirty-nine applicants at Hamilton Field signified their desire to qualify as Regular Army officers at the written examination for appointments as second lieutenants, scheduled to be held on April 2nd, next.

THE COLD WEATHER TEST FLIGHT

The Cold Weather Test Flight operated during the entire month of February in the northern states where snow and ice lasts during all the winter season. Planes making the test comprised an assortment of service type airplanes, 17 in number, viz: 3 each of P-26 and P-12K (Pursuit); 3 B-12 Martin Bombers; 3 O-43A (Observation); 3 A-12 (Attack) and two C-27 Bellanca Transports. The purpose of the Flight was to gain information as to their operating efficiency in regions where King Winter reigns supreme.

The Flight, started from Selfridge Field, Mich., on February 1st, and landed at that field on the last day of that month. In command was Lieut. Col. Ralph Royce, whom one would not be far wrong in characterizing as the premier cold weather pilot in the Air Corps, since back in 1930 he led the First Pursuit Group on an extended flight from Selfridge Field to Spokane, Wash., in the dead of winter, and last August was a member of the Alaskan Flight Expedition.

Altogether, 21 officers and 25 enlisted men participated in this flight. The hardships were many, and those who hail from the Southland no doubt had many occasions to hum the popular tunes reminiscent of Dixieland. Comprising the Group Staff of the Flight, in addition to its leader, were Major Irvin B. March, Medical Corps, Flight Surgeon; Captain Calvin E. Giffin, Adjutant, Operations and Photographic Officer; Captain Fred C. Nelson, Executive and Engineer Officer, Lieut. (JG) James R. Lee, U.S. Navy, Official Observer; Lieut. Daniel C. Doubleday, Radio Officer; and Lieut. Donald F. Stace, Supply Officer. The enlisted personnel of the Group Staff were Master Sergeant Grover B. Gilbert, Photographer; Staff Sergeant Robert C. Carr, Operations and Finance Clerk; Cpl. Robert F. Traxler, Medical Dept., Medical Attendant, and Cpl. John A. Brock, Engineering Clerk.

Piloting the P-26A planes were Lt. Colonel Royce, 1st Lieuts. Earle E. Partridge and Paul M. Jacobs. The pilots of the P-12K's were 1st Lieut. Yantis H. Taylor, 2nd Lieuts. Clark N. Piper and Joe W. Kelly. The Observation pilots were Capt. Giffin, 1st Lts. Isaac W. Ott and Reuben Kyle, Jr.; the Attack pilots, 1st Lieut. Henry M. Bailey, 2nd Lieuts. Harvey P. Huglin and Paul D. Bunker; the Bombardment pilots, Capt. Arthur G. Hamilton, 1st Lieut. Paul H. Kemmer and 2nd Lieut. Birrell Walsh, and the Transport pilots, Capt. Nelson and 1st Lieut. Donald F. Stace.

The enlisted men of the Flight Section were Mr. Sgt. Robert McGaha, Line Chief, Staff Sgts. Mathies Cipelle, Henry Williamson, Karl R. Johnson, Elbert Dossett, Donald Bryan, Cayus P.

Peterson, John Murphy, Thomas B. Vinson, Norman D. Duggar, Robert F. Miltz, Sgts. Robert W. Land, William B. Buckley, Ludwig Kurrley, Roy H. Coulter, George W. Hollowell, Cpls. Raymond J. Koch, Harvid Sager, James S. Pollock, Howard N. Scales and Pvt. Jack Mathews.

The Provisional Winter Test Group got under way shortly after nine o'clock, February 1st, the first ship in the air being the Bellanca transport, with Capt. Nelson at the controls. With him were Maj. March, Lieuts. Doubleday, Lee and Mr. Sgt. Gilbert. In short order, the other 16 airplanes took off. Two hours later, the advance ship landed on a runway at Alpena Airport, Michigan, which had been cleared by snow plows.

The first arrivals following the Bellanca were the three F-26A's. Circling the airport, they proceeded to land. Two of them settled on the runways, but the third, piloted by Lt. Col. Royce, settled in 14 inches of soft snow. He promptly took off again, settled and taxied into position. The O-43A's were next to arrive, all of them landing on the runway. One of them, piloted by Lieut. Kyle, lost a side engine cowling when approximately ten minutes out from Selfridge Field. The cowl had struck the stabilizer and badly dented that member. When the Bombers came in, the onlookers experienced a momentary feeling of anxiety when two of them swerved at high speed toward the steep banks on each side of the runway.

No difficulty was experienced in landing, however. Two of the three A-12's, the next to arrive, landed on the runway, but the third settled in the heavy snow and promptly became stuck. The pilot, Lieut. Bailey, attempted to pull the airplane out, but it was not until several Selfridge Field pilots well versed in the art of snow taxiing came to his assistance that he obtained the necessary experience which served to stand him in good stead later in heavier going. The plane last to arrive was the C-27, piloted by Lieut. Stace, bearing the enlisted staff and a few Pursuit mechanics.

The Alpena Chamber of Commerce served coffee and doughnuts to the flight personnel.

At Alpena the airplanes were serviced from a 300-gallon tank truck with a motor take-off. The gas required chamoising, and it was almost dark before the last airplane was serviced.

Following an informal dinner, two members of the flight, Lts. Kyle and Ott, were driven to the airport and anticipated spending a restful night in the comfort of an "Arctic" sleeping bag. They were awake more than they were asleep, particularly along about 3:00 a.m., when the thermometer was hovering at 20 below and a brisk wind was creeping in through chinks in the bag. The enlisted men

awoke at 6:30, although those who slept in the arctic bags were awake some hours earlier.

The task of starting the engines began at nine o'clock. All were started without difficulty, and two hours later the Bellanca Transport took off down the mile-long runway. Encountering heavy fog over the Straits of Mackinac, Capt. Nelson, after making several attempts to get through, finally decided to land at the largest airport in that part of Michigan, the Sheboygan County Airport, Sheboygan. This was prompted largely by the amount of snow observed in that section of the State and because of the inexperience of most of the pilots in so far as snow flying was concerned. The snow on this airport was approximately 14 inches deep, soft and sticky, and was destined to give the pilots their first real taste of the difficulties of snow flying.

Lt. Doubleday contacted the other elements of the flight and guided them into Sheboygan. Due to the fact that the P-12K element had no provision for radio, because of the lack of generators on the fuel-charger type engines installed in these planes, it passed over the airport at Sheboygan both on the way out and on the way back to Alpena, to which point it was necessary to return when fog was encountered.

The B-12 element was first to arrive at Sheboygan. Lt. Walsh, in landing, struck the fence around the airport with the heel of his skis. When he attempted to taxi into position on the line, the snow piled up in front of the skis, and on opening the throttle to pull through, the B-12, as the News Letter Correspondent puts it, "rested its weary ear on the ground and went to sleep". The only damage to the Bomber were bent propellers and a ruptured fitting on the right ski.

To add to the difficulties in landing on a field none too good at best, a crowd which quickly formed on the arrival of the Transport, was absolutely beyond handling before the last element arrived, overrunning the field and adding to the general confusion.

During the landing and taxiing in the heavy snow, the fuselage on the O-43, piloted by Lt. Kyle, buckled badly and, after a test flight, Col. Royce ordered the pilot and mechanic to proceed to Wright Field for reinforcement of the airplane structure. Lt. Kyle took off at 2:00 p.m., and it was later learned that before he could reach Selfridge Field ceiling and visibility vanished completely and, after milling around for several hours, he breathed easier when he set down the airplane with its five remaining gallons of gas at Selfridge Field.

The A-12 element, accustomed to flying under these 50-foot ceilings, finally sneaked through to St. Ignace, where

the pilots and mechanics enjoyed a lunch prepared for the men of the P-12K element who failed to arrive. Later in the afternoon, the P-12K element once more took off from Alpena and arrived at Newberry. During the process of servicing the P-12K's there, Lieut. Taylor's feet were severely frost-bitten, this causing him much discomfort during the later stages of the flight.

The main portion of the flight departed from Sheboygan on February 3rd, leaving Lieut. Walsh and three mechanics there to await new propellers.

On arrival of the flight at Newberry, the exceptionally strong wind, coupled with the tendency of the P-26 to drop one wing, necessitated practically carrying them in from the field. Only by having one man ride the windward wing and two others pushing on the trailing edges of the wings were they brought into position on the line.

Due to insufficient hotel accommodations in Newberry, seven officers were taken care of by the Michigan State Police in their barracks, the group enlisted staff were quartered with the Michigan Department of Conservation Officers, and the remainder of the flight doubled up to utilize all available accommodations at the local hostelry.

A terrific snow storm on the morning of the fourth, necessitated the suspension of all work. All had checked out of the hotel, and a wild scramble ensued to regain the choice rooms vacated that morning.

During the night the thermometer registered 28° below. It rose three degrees in the morning but no great difficulty was experienced in starting the engines and no one seemed particularly cold or fatigued. The entire day was spent in testing equipment and making test flights on the four feet of snow covering the field. Several starters were broken, due to the electric energizers suddenly exerting too great a pressure on the starter shaft.

The starter shaft in Lieut. Jacob's P-26 was broken, but since the engine started he decided to go through to Laurium, the next scheduled stop, which he reached without difficulty. The C-27, which took off immediately afterward, was forced back after flying two hours when a heavy snow storm was encountered in the vicinity of Marquette.

On the morning of February 6th, all aircraft were started, and attempts were made to break them loose from the snow to which they were frozen fast. Officers and men pushing on the tail and trailing edges of the wings were blown about like leaves from the propeller blasts as the pilots opened throttles wide to secure every ounce of available power.

After hours of work, the first transport moved into the field ("steamed" would probably describe it more accurately, says the Correspondent) and made one

attempt after another to get off the 2600-ft. field. It became necessary to taxi in wide sweeping curves, at full throttle, to obtain sufficient speed to lighten the airplane enough to taxi fast, for no wind was blowing. After numerous unsuccessful attempts, a section of the fence surrounding the airport was removed and, with the additional space provided in the adjoining field, the C-27 finally took to the air.

Lieut. Bailey in his A-12 cleared the fence, but the two other A-12's simply steamed on through the fence into the next field. One of the A-12's was temporarily put out of commission when the pilot attempted a turn at high speed. The right ski dug down into a 5-foot drift and wrenched the ski fittings loose from the ski proper. The other C-27, piloted by Lieut. Stace, more heavily loaded than Capt. Nelson's, failed to get off without the help of a wind and was forced to remain at Newberry for two days until a runway could be plowed.

Conditions at Laurium were even worse than those at Newberry, 147 inches of snow during the winter having alternately thawed and frozen until it had worked down to a depth of six feet, with a top layer of four inches of soft snow. All airplanes experienced difficulty in getting off at Laurium and were finally flown, light, to Portage Lake at Hancock, Mich., where fuel was loaded into them and the crews were taken aboard.

Prior to the movement from Laurium, the flight performed several missions, and it was definitely decided at this stage that the functioning of the larger and heavier craft, such as the C-27's, the B-12's and the A-12's, equipped with wheel skis, was not all that could be desired, due to the wheel acting as a brake and imposing a terrific drag at take-offs and while taxiing.

During a ferry trip on February 7th, Lieut. Doubleday, flying Col. Royce's airplane, was circling with other planes over Portage Lake preparatory to landing, when the P-26 went into a spin at low altitude and crashed on the ice. Fortunately, the pilot suffered only a slight injury, but the airplane and engine were completely demolished.

This accident demonstrated the necessity of having skis and snowshoes for the Flight Surgeon and his assistant, and these were promptly purchased and stowed aboard each transport.

Capt. Hamilton proceeded in his Bomber to Duluth, where he was joined by Lt. Kyle, who had returned from Dayton, where the fuselage of his plane had been reinforced. Lieut. Kyle landed at the airport, and Capt. Hamilton set his Bomber down on the harbor ice. On the following day, Lieut. Kyle experienced considerable difficulty getting out of a 2400-foot field covered

with 31 inches of sticky snow.

The remainder of the Flight in Duluth on the afternoon of February 9th, and the testing of equipment began in earnest. Sunday was utilized in rest and short working periods for those who cared to accomplish the necessary maintenance. The lack of proper police measures to handle the huge crowd assembled on the harbor ice prevented any flying which might possibly have been accomplished that day. Several officers spent the day skiing. One officer in particular, describing his first experience at this sport, stated that it was fine for the first ten feet when he was going slowly, but after he had picked up flying speed in the course of the next 200 feet, someone stuck a grove of trees in front of him, and he had the choice of colliding with them or with the ground. He rolled himself into a knot and thereafter lost all his zest for skiing.

Officers of other branches of the Army stationed at Duluth, consisting of Col. A.K.B. Lyman and Capt. Doswell Gullatt, Corps of Engineers, and Maj. R. Ristine, Infantry, entertained the officers of the Flight during their stay at that city, having previously made all arrangements for the marking of the ice, parking of airplanes, storage of supplies, etc. This courtesy was particularly gratifying in that much time which would otherwise have been devoted to obtaining odds and ends and performing administrative duties was thus saved and made available for test purposes.

While at Duluth, members of the Flight were paid their per diem allowance for the first ten days of the flight, as was done thereafter each succeeding ten days, this being the first time on record such a payment had ever been made during an expedition of this nature. The details of this payment were worked out by Capt. H.S. Farish, Finance Department, the Finance Officer of Selfridge Field, and Capt. Arthur G. Hamilton, who acted as his Agent Finance Officer during this flight. Staff Sgt. Carr performed the necessary administrative duties as Finance Sergeant.

While the Flight was at Duluth, it was joined by Lieut. Frank D. Klein in an O-43 from Wright Field. He continued on with the Flight from that point, and brought with him the propane gas with which to prime the engines. Under actual test it failed to give satisfactory performance.

The News Letter Correspondent remarks that the craze for writing on airplane wings, fuselages, tails, fins, etc., seems to be stronger than ever, and he observed some members of the flight copying the addresses which were written in a feminine hand.

One other piece of equipment taken along for test purposes and which did not pan out was the heat gun or hot air heater. It was used in an attempt to melt

snow which had accumulated in the tails of several planes.

Operations from fields covered with heavy snows indicate that airplane fuselages should be more tightly sealed around the tail post. On some planes from 100 to 200 pounds of snow had accumulated in the tail section, making them particularly difficult to handle.

The entire Flight departed from Duluth at 2:20 p.m. on February 12th, and from this point onward the railroad was followed as closely as was consistent with good conditions, in view of the widely scattered houses. During the course of this flight, many interesting conversations over the radio were carried on, particularly with reference to the terrain over which the flight was operating. Not having any radio equipment, the P-12 element, on leaving Duluth, was dispatched to Hibbing, Minn., to try out the airport which was covered with four feet of snow. It was reported from Hibbing that the airplanes performed excellently under the conditions there encountered.

One of the interesting bits of radio conversation overheard was between Capt. Hamilton to Col. Royce. The Captain was flying the fast E-12 Bomber, and he said: "The P-26's have passed us, the P-12's and Observation have gone by, the Attack is just going by. Now, then, under ordinary circumstances without these skis we could outrun any of you, but, by golly, if the Transports go by I'm going to jump!"

On arrival at Grand Forks, N.D., the Flight was serviced from 50-gallon drums by hand pump. It took three hours to finish this task, it being well after 7:30 p.m. when the last mechanic departed from the field.

For some of the personnel, the morning of the 13th was the last day on which all the planes could be seen, and the departure from Grand Forks was the beginning of a series of adventures and races which lasted until the Flight returned to Selfridge Field.

The P-26's and the B-12's, having taken off at 9:00 a.m., arrived at Minot, N.D., and were refueled by the time the remainder of the Flight arrived at 11:00 a.m. Minot was scheduled as an overnight stop, but feeling that cold weather was about to set in at Great Falls, Montana, every effort was made to assemble the Flight at that point, so the P-26's and B-12's proceeded to Great Falls, via Glasgow. The remainder of the Flight decided to remain overnight at Minot.

The morning of the 14th found five airplanes in Great Falls with an extremely high temperature of 53 degrees. At Minot there was a temperature of 20 degrees, which swiftly went up to 30 and brought snow with it. At nine o'clock an effort was made to get off the ground. Lieuts. Taylor and Piper,

in two P-12X's got off, made a turn at the far corner of the airport, and were lost to view in the fog. Following the railroad, they arrived at Glasgow, and in the afternoon continued on to Great Falls. When the snow commenced, the remainder of the Flight returned to the hotel and sat around the lobby watching the progress of the two P-12's as the station agents up and down the main line of the Great Northern OS'd them past.

The Flight at Minot was again fog-bound on the 15th, but the section of the Flight at Great Falls moved out on a tactical mission to Butte and return to obtain experience in mountain flying and to search for colder weather.

Maj. March, the Flight Surgeon, and his enlisted assistant were with the Transports at Minot, as was the entire enlisted staff, and this separation seemed to be the beginning of a game between pilots and mechanics of the Pursuit ships, apparently all trying to see who could stay away from each other the longest. Minus the services of his mechanic for the greater portion of the time since leaving Selfridge Field, Lieut. Partridge served notice that he was qualified to take the air mechanic's examination.

At 9:00 a.m. on the 18th, the Flight at Minot departed for Glasgow, arriving three hours later. Lieut. Kelly, in his P-12X, was acting as the advance man and, despite the fact that he passed directly over the airport at Glasgow on three different occasions, finally landed in the yard of the high school and asked the direction to the airport. Refueling at this point was also accomplished by hand pump from 50-gallon drums and caused much delay. The photographer went aboard an C-43, was flown over the Fort Peck Dam Project, and obtained about 30 excellent plates of this \$100,000,000 flood control and irrigation dam.

The P-12 and the Observation planes had no particular difficulty taking off from the heavy snow in this high altitude, but the A-12's and C-27's commenced a "Ring-around-the-rosy". After about a dozen attempts, one A-12 and the two C-27's were still hugging terra firma. The continued use of full throttle finally resulted in the engine in Lieut. Bunker's A-12 burning out, while the "Cyclone" in Capt. Nelson's C-27 became weaker each time he tried to get off. Lieut. Stace's C-27 finally ran into a boundary marker at high speed, and several braces were torn out of the fuselage structure.

Removing the skis from his plane and reducing its load by 700 pounds, Capt. Nelson took off in a reasonable distance, but, after flying 20 minutes on the way to Great Falls, the full throttle work exacted its toll and he was forced back to Glasgow a short time before the engine gave up the ghost.

The section of the Flight already at Great Falls made a trip to Helena, where all members thereof were introduced in

the Montana Senate and House of Representatives, taking seats in the Rostrum during a short joint session of these bodies.

When the Observation and Attack ships arrived at Great Falls during a heavy dust storm and were informed that the remainder of the Flight was in Helena, one pilot remarked that he did not miss the trip since he had not only seen Helena but also Seattle and San Francisco go by in the dust.

On the morning of February 17th, with the possibility of cold weather definitely out of question, the entire Flight departed from Great Falls to Miles City, Montana, leaving Lieut. Kemmer and three enlisted men to change an engine on a B-12 which had burned out due to excessive use of full throttle. The C-27, with the damaged fuselage, at Glasgow was being repaired there by the crew chief and the six mechanics aboard, while the other C-27 and one A-12, also stranded there, awaited new engines to replace those burned out the previous day.

The P-12K element was dispatched by way of Lewistown, Montana, to conduct a tactical problem en route to Billings, but the remainder of the Flight proceeded to Billings along the mountain range. This flight was undoubtedly the roughest portion of the journey. A terrific dust storm, helped along by a 35-mile wind, with exceptionally strong gusts, made flying anything but comfortable. Sticks were torn from pilot's grasps and airplanes rocked violently as they drifted through the alternate rising and falling strata.

The morning of the 18th again found the Flight facing a dust storm and heavy winds. On the way from Billings to Miles City, the Flight passed over the site of Custer's Last Stand, the spot where every soldier in the battle fell being marked with a small monument. The course of the battle was followed up a ravine, where markers here and there indicated that stragglers had been picked off one by one until only a large group of approximately 20 monuments indicated the last stand. The O-43's and A-12's were dispatched over the battlefield and dipped their wings in salute at the site of the main body's stand. The people of Miles City extended a hearty greeting to the Army airmen.

The usual morning dust storm with its attendant high winds greeted the Army airmen on the morning of the 19th, but no particular difficulty was experienced starting the engines or taking off. An inspection of the skis revealed that the gravel airports in this part of the country were beginning to impose wear on the ski surfaces and the heel shoes.

At Bismark, N.D., the next stop, Infantrymen were on duty to maintain order. After refueling, the flight at-

tempted to move out but found it very hard to taxi amidst the swirling of gravel and dust of a 40-mile gale, which was a new experience for them.

Sgt. Peterson, Capt. Giffin's mechanic, jumped out to assist in pushing the tail around. After the airplane started moving, the pilot opened the throttle and took off, forgetting all about his mechanic. Lieut. Kyle waved his hand, motioning the Captain back, but the latter, thinking this was some new game, waved right back at him. When about 15 minutes out of Bismarck, the airplane hit a particularly rough bump. Instinctively, the Captain looked around and, failing to see his mechanic, thought for a moment that he had been thrown out. Then it dawned upon him that he had taken off without him, and he proceeded to lead his element back to Bismarck.

This loss of 15 minutes' time deprived members of this element of hotel comfort for the night. The rest of the Flight reached Fargo, N.D., although the P-12K's were forced to land without looking the field over and one Bomber landed blind. Capt. Giffin's Observation element ran into a terrific snowstorm off the edge of the Fargo airport and was forced back to the town of Barnesville, N.D., where they landed in a small field. There being no hotel accommodations in the town, the fliers were finally put up by the Sheriff, and they slept through the night with one eye open.

The limited area of the field was forcefully brought to the attention of the element the next day, following the cessation of the storm. It was necessary to lighten the airplanes and ferry the equipment by truck to a field approximately one mile distant in order to take off.

On the morning of the 20th, one C-27 departed from Glasgow and reached Fargo five hours later. The main portion of the Flight departed from Fargo an hour before noon for St. Paul, Minn. On this flight, failure of cylinder rings in the engine of Lieut. Piper's plane caused the loss of its entire oil supply, and he was forced to land at St. Cloud, Minn. Lieut. Klein was dispatched to St. Cloud to ferry Lieut. Piper to St. Paul.

Making use of the National Guard facilities at the St. Paul Airport, the mechanics proceeded to busy themselves on the airplanes. Forty-hour inspections were made, broken parts replaced and the airplanes prepared for the last long drive homeward. From tests on the ground it developed that all engines, except the V-1570's, had lost much of their power. The Bomber left at Great Falls arrived at Fargo this date, while the C-27 at Glasgow arrived at Minot, where it was held for repairs, for Lieut. Funker, in executing a take-off, crumpled a wheel.

Leaving Fargo, the C-27 joined the main flight at St. Paul, and pilots and mechanics met for the first time since February 13th. The crew chiefs went to

work with a will to clean up the planes for the last week of operations.

Work on the airplanes continued on the 22nd. Considerable difficulty was experienced in starting the engines in the Bomber which had arrived at Fargo on the 21st, due to the high wind and the minus four degrees temperature, but it finally reached St. Paul at 3:00 p.m. Lieut. Bunker's C-27 flew from Minot to Fargo with an extremely weak engine, and its chances of finishing the flight seemed doubtful.

February 23d found the Pursuit flight (less Lieut. Piper in his P-12K), the Observation Flight and the two remaining Attack ships departing for Wausau, Wis., where snow was again encountered.

On the way to Manitowoc the next day, the Observation flight encountered a severe snowstorm and was forced to turn back to Green Bay. Later an attempt was made to get through and, while making a turn, Lieuts. Ott and Klein became lost on the outside of the turn and continued on through the storm to Manitowoc.

At Green Bay a blizzard caught the flight on the ground. Due to the lack of cockpit covers, the front and rear cockpits filled up with snow. The two-foot snowfall, accompanied by the high wind, caused many drifts around the airplanes, and everyone was forced to dig out the following day. "Sun Dogs" were again in evidence that day, as well as the following day.

The flight reached Manitowoc on the 24th and, after servicing, an attempt was made to get away. The attempt was soon abandoned, for the poor gas here not only prevented the engines turning up their full r.p.m.'s, but caused such an excessive loss of power that it was necessary to drain all the gas from the tanks and flush the lines. The flight was at a standstill until suitable aviation gasoline was expressed from Chicago.

The poor gasoline put the finishing touches on Lieut. Piper's ailing engine, and it was with extreme difficulty that he took off for Chicago, in order to return to Selfridge before changing engines. Ten miles from Chicago the engine started throwing oil through the exhaust stacks, and he was forced to leave his P-12 in Chicago for an engine change. The wheels on the C-27, piloted by Capt. Nelson, were removed, and tests were run on the heavy snow at Manitowoc, using the plain ski only.

Manitowoc being the last testing point, the flight separated, some planes proceeding to Newberry for fuel, and others to Selfridge Field, via Chicago. The main portion of the flight arrived at Selfridge Field about 6:30 p.m., February 26th, terminating a very eventful flight and leaving only two or three

ailing aircraft to proceed homeward in a more or less leisure manner.

Although the personnel encountered many hardships during the entire month spent in combatting the elements in the frigid Northwest, the flight was not without its enjoyable incidents, for the men attended many luncheons, dinners and dances given in their honor by the citizens of the various communities where stops were made.

Among the conclusions, arrived at as a result of this flight were:

The abandonment of all cold starting, since it imposes too great a strain on the engines, and, in lieu of this, to heat the engines by firepots.

The necessity for redesigning of wheel skis for heavy ships to permit their cruising closer to their normal rated speed.

The priming of a greater number of cylinders during cold weather, although this is a desirable feature at all times.

Redesigning of engine covers, since the covers tested were entirely unsatisfactory.

Further development of winter flying equipment. The redesigning of cockpit and cabin heaters would probably eliminate many of the problems now facing the Equipment Board with reference to winter flying clothing.

Tightening up the fuselages on all types of aircraft to keep snow out of tails.

A study of the problems concerning working clothing for enlisted men during cold weather.

The abandonment of all light grade oils for winter flying, because of undue wear on engines.

Development of an air filter for use when encountering dust storms in the Northwest territory.

Further development of the self-buckling riveting device.

Design of suitable airplane ambulance for snow operations.

Development of portable office equipment for installation in Transport airplanes for use on long trips of this nature.

The interesting sidelights of the trip were the requests made upon Col. Royce at every stop to make speeches, assisted by his slides, on the Alaskan Flight and the present flight before men's clubs and high school students; his flying of different types of ships each day after his own was lost at Portage Lake; the excellent cooperation received from other branches of the service, particularly the Corps of Engineers; the interest in the flight manifested by the CCC Camps, the personnel of which endeavoring to do everything in their power to help the Flight with its problems; the excellent cooperation from railroads and air transport companies who checked the Flight when it was scattered and assisted it in obtaining weather data, and the conclusion reached that Pursuit can operate over any territory for any length of time, using wheel skis.

GOVERNMENT TOTAL DISABILITY INSURANCE

The Veterans Administration has recently furnished the following information to the Office of the Chief of the Air Corps relative to the Government Total Disability Policy, which may be applied for by holders of any form of Government Life Insurance Policies. The benefits of the Government Total Liability Policy are entirely independent of and in addition to any of the benefits of the Government Life Insurance Policies, and such benefit payments do not affect the face value of the later policies.

Upon the presentation of proof of total disability satisfactory to the Administrator, the Government Total Disability Policy pays to the insured the amount of \$57.50 per month during such periods of total disability; also all premiums becoming due on all Government Policies are suspended during such periods.

If a person holding a Government Life Insurance Policy, to which there has been attached a total disability rider, becomes totally disabled as a result of disease or injury and is continuously so disabled for a period of four consecutive months or more before attaining the age of sixty-five, and before default in the payment of any premium, and is so rated for insurance purposes by the Veterans Administration, such insured would be entitled to benefits, regardless of whether or not he is in the active service.

The fact of retirement from active service by reason of a disability does not necessarily constitute total disability for insurance purposes. The findings of a War Department Medical Board or reports of examinations by medical officers of the War Department is of aid to the Veterans Administration in making a determination as to total disability; however, the Veterans Administration reserves the right to examine and rate the insured-claimant before authorizing the payment of any benefits.

GOVERNMENT LIFE INSURANCE FOR RESERVE OFFICERS

A part of Section 300 of the World War Veterans' Act, 1924, as amended, is quoted below as being of interest to Reserve Officers:

"In order to give to every commissioned officer and enlisted man and to every member of the Army Nurse Corps (female) and of the Navy Nurse Corps (female) when employed in active service under the War Department or Navy Department protection for themselves and their dependents, the United States, upon application to the bureau and without medical examination, shall grant United States Government life insurance (converted insurance) against the death or total permanent disability of any such

person in any multiple of \$500, and not less than \$1,000 or more than \$10,000, upon the payment of the premiums as hereinafter provided. Such insurance must be applied for within one hundred and twenty days after enlistment or after entrance into or employment in the active service and before discharge or reinstatement."

Reserve Officers on active duty for sixteen days or more may apply for Government Life Insurance within 120 days from entrance upon active duty and before release from such duty.

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TACTICAL SCHOOL OFFICERS ADVANCED IN RANK

Effective March 11, 1935, 22 Air Corps officers on duty at the Air Corps Tactical School at Maxwell Field, Alabama, were advanced in rank, the Chief of the Air Corps having certified that no officers of suitable permanent rank are available for the duties being performed by these officers.

Captain Harold L. George, Chief, Air Force Operations Section, was advanced to Lieut.-Colonel.

The following Captains, who are Chiefs of Sections, were promoted to Major:

John I. Moore, Air Corps Extension Sec.

Lotha A. Smith, Attack Section.

Claire L. Chennault, Pursuit Section.

Grandison Gardner, Corps & Army Observation Section.

Frederick W. Evans, Observation Sec.

Emil C. Kiel, Communications Section.

Odas Moon, Bombardment Section.

Other officers promoted to Major, and their assignments, are:

Captain Austin W. Martenstein, chief, Personnel and Logistics.

Captain Warren R. Carter, Chief, Air Intelligence.

Captain Sigmund F. Landers, Executive Officer.

Captain Melvin B. Asp, Engineering Officer.

Captain Clarence F. Horton, Supply Officer.

The following Squadron Commanders were promoted to Major:

1st Lieut. Charles D. McAllister, 87th Pursuit.

Capt. Lloyd C. Blackburn, 51st Attack

Capt. Rufus B. Davidson, 54th Bomb.

Capt. Kenneth C. McGregor, 86th Obs.

1st Lt. Arnold H. Rich, 84th Service.

First Lieutenants advanced to the rank of Captain were:

Julian B. Haddon, Secretary.

Ernest S. Moon, Adjutant.

Ralph A. Shavelly, Operations Officer.

Frank F. Everest, Jr., Intelligence and Operations Officer, 51st Attack Squadron.

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The Secretary of War, on the recommendation of the Chief of the National Guard Bureau, announced that a special two weeks' course in instrument flying will be given at Rockwell Field, Coronado, Calif., beginning March 20th, for all Air Corps Regular Army Instructors on duty with National Guard Air Squadrons. This special course is in line with the present policy that all air units of the National Guard should be thoroughly trained and equipped for flying under all weather conditions. In this refresher course, all of the instructors will become acquainted with the latest methods and developments in equipment and will be better fitted to carry out their mission with the National Guard Air Corps.

The following Air Corps officers (Instructors) have been selected to attend, all of them, with the exception of 1st Lieut. Louis M. Merrick, having the rank of Captain:

<u>Name</u>	<u>Organization</u>	<u>State</u>	<u>Station</u>	<u>City</u>
Ronald Hicks	31st Division	Alabama	Roberts Field	Birmingham
Charles A. Horn	154th Obs. Sqn.	Arkansas	Little Rock Airport	Little Rock
Eugene B. Bayley	40th Division	California	Griffith Park	Los Angeles
Norman D. Brophy	45th Division	Colorado	Lowry Field	Denver
Louis M. Merrick	43rd Division	Connecticut	Brainard Field	Hartford
Morrill D. Mann	36rd Division	Illinois	Municipal Airport	Chicago
Guy E. Gale	38th Division	Indiana	Stout Field	Indianapolis
David R. Stinson	28th Division	Massachusetts	Boston Airport	East Boston
Harry H. Mills	32nd Division	Michigan	Wayne Co. Airport	Romulus
Arthur I. Ennis	34th Division	Minnesota	Hohman Airport	St. Paul
Arthur Thomas	35th Division	Missouri	Lambert Field	Robertson
William J. McKiernan	46th Division	New Jersey	Newark Airport	Newark
Ross F. Cole	27th Division	New York	Miller Field	New York, Staten Is.
Charles Backes	37th Division	Ohio	Municipal Airport	Cleveland
Richard H. Magee	29th Division	Pennsylvania	Philadelphia Airport	Philadelphia
Wendell B. McCoy	30th Division	Tennessee	Sky Harbor	Murfreesboro
Thomas W. Blackburn	33th Division	Texas	Municipal Airport	Houston
Robin A. Day	41st Division	Washington	Felts Field	Parkwater

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PROTECTION AGAINST MOSQUITOES ✓

Captain Bernard J. Toober, Air Corps, Technical Supervisor of the Middletown Air Depot Control Area, in a discourse on the subject of a well known insect pest, writes as follows:

"The question of protection from mosquitoes is given little thought by the average pilot until he finds himself, through some bit of bad luck, up against the proposition of fighting them off with whatever materials are at hand. I have had too many hunting and fishing trips turned from pleasurable excursions into periods of inconvenience ranging from annoyance to misery simply because the party forgot to provide itself beforehand with something more resistant to their attacks than wood-smoke or improvised headnets cut from the tent mosquito bar. Nor, except in the north in the extreme dead of winter, is there any assurance that a district will be free from the pests. Snow on the ground is no help; I have seen as many mosquitoes during the spring break-up in the north as I ever saw in the Florida Everglades, and they had, as very mean cohorts, legions of black flies and midges. In case of a forced landing in infested country, especially if personnel are injured, attacks by these insects may result not only in torture but death.

Three preparations or "dopes" are here presented. These will cover all situations. The first contains a repellent and an ingredient to render this repellent more agreeable to the user without hindering its effect on the insect. The latter two contain, in addition, a

substance to give body to the dope and prevent too rapid evaporation of the repellent.

a. This is a light liquid deterrent. Carried in a small vial, it is to be used if bothered by mosquitoes in hotel bed rooms or when working on planes in the evening. It should be about as follows: one ounce of citronella, one ounce spirits of camphor and one half ounce oil of cedar. Pennyroyal may be substituted for spirits of camphor. The effect of this mixture, daubed on hands, face and neck is temporary, and the application must be frequently renewed. It is of little value in the presence of a concentration of the enemy forces or during prolonged periods of attack.

b. The following is less pleasant to use but will work a lot better: one ounce oil of citronella, one half ounce oil of cedar or oil of pine, and both ingredients mixed with four ounces of vaseline or lanoline. Either latter ingredient must, of course, be heated.

c. The best preparation for serious use is a rather disagreeable mixture concocted with the following: two pounds of mutton tallow, heated and strained; one half pound of black tar (Canadian or pine tar), to be added to the tallow while the latter is hot. Stir thoroughly and when nearly cool stir in four ounces of oil of citronella and two ounces of pennyroyal. This mess, if it is to be used by all hands around a hunting or fishing camp, is cooled in the jar from which it is to be used. If it is to be divided into various containers, as it would

normally be when distributed among personnel of a flight, it should be handled before cold. The Canadian tar is added to make this stuff set in a sort of dark glaze. When applied in a couple of coats it is almost impenetrable to the mosquito or black fly even after the odor of citronella, the active repellent in all these dopes, has worn off. It should not be

washed off while in enemy country. It won't improve your looks, but a visage lumpily contoured with mosquito bites is no prize subject for an art photograph either.

d. Incidentally, if bitten, the application of the wetted end of a piece of soap is about as good as anything.

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THIRD ATTACK GROUP MOVES TO BARKSDALE FIELD

When Colonel Gerald C. Brant, now Commanding Officer of the Third Wing, landed at Fort Crockett, Galveston, Tex. on the afternoon of February 18th and issued orders for the immediate removal of the 3rd Attack Group to Barksdale Field, it climaxed two years of expectant waiting on the part of the personnel of the Group, who expected to move to that field upon its completion.

An advance detachment departed from Fort Crockett by air on the morning of the 19th, and the ferrying of the Attack Group's airplanes began at the same time. The initial ferry flights were led by 2nd Lieuts. K.E. Crosher for the 8th Attack Squadron; F.L. Calhoun for the 13th and G.M. Murchison for the 90th. The advance party was strengthened by additional men during the week following, the necessary equipment being transported by air.

All of the A-12's, training planes and other aircraft of the Group were immediately transferred to the new station, with the exception of planes on maneuvers, others temporarily out of commission, and one command plane. Transports of the organizations were in continuous use between the two stations.

The 8th, 13th and 90th Attack and the 60th Service Squadrons, together with the Third Attack Group and Wing Headquarters, were represented at Barksdale Field by detachments until the full strength of these organizations arrived on February 27th by troop train, motor convoy and private automobiles. At the time, 105 men arrived by train, 135 by convoy and 235 by private cars. The troop train was commanded by Capt. E.M. Morris, and the motor convoy by 1st Lieut. Don W. Mayhue.

Advance parties made all arrangements for the main body to move directly into its new quarters. Kitchens were ready for operation upon its arrival, and the entire Group settled quietly into its new base, ready for the reorganization of the Third Wing.

Major Earl L. Naiden, Commanding Officer of the Third Attack Group, remained at Fort Crockett until the evacuation of this post was completed, flying to Barksdale Field on the morning of

February 28th.

Colonel Brant assumed command of Barksdale Field on February 26th, and of the 3rd Wing on March 1st.

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DUKE OF GLOUCESTER VISITS ALBROOK FIELD

Albrook Field was the scene of much activity, pomp and ceremony on March 4th, when Prince Henry, Duke of Gloucester, third son of the King of England, took off from there for an hour's flight to view the Panama Canal from the air.

Prince Henry was enroute from Australia to Jamaica. He remained in the Canal Zone only about 12 hours, and Albrook Field was the only Army post he visited.

The Air Corps troops of Albrook Field, in their best inspection uniforms, composed the guard of honor. On the Duke's arrival, following a salute of 21 guns, he was welcomed to the post by the Department Commander, Major General Harold B. Fiske; the 10th Composite Wing Commander, Colonel W.C. McShord, and Major Robert L. Walsh, commander of the 16th Pursuit Group. As the guard saluted, the flourishes and ruffles, followed by the British National Anthem, were played by the 68th Infantry band, loaned for the occasion. The Prince inspected the guard and complimented its commander very highly on the appearance and set-up of the Air Corps soldiers.

Two Douglas Amphibians were on the ramp to take the Prince and his party over the Zone. The Prince flew with the British Minister in a Naval airplane piloted by Lieut.-Commander Ralph E. Davison. His party, consisting of Major-General Howard-Vyse, Captain Curtis, Captain Kerr, Captain Schreiber, E.A. Cleugh and A.M. Williams, flew in the second amphibian, piloted by Lieut. C.W. Cousland, Air Corps. The party was escorted by a flight of six P-12's commanded by Captain Frank O'D. Hunter.

On his return, Prince Henry expressed himself as being deeply grateful for the courtesies shown him and called for the pilots of the amphibian and the commander of the Pursuit escort to thank them personally for accompanying him.

GENERAL PRATT ASSUMES COMMAND OF THE 2ND WING

Brigadier-General Henry C. Pratt, Air Corps, who was appointed to that rank by virtue of his being assigned on March 1st to the command of the Second (East Coast) Wing, recently departed for Langley Field, Va., to take over his new duties. He had been for some time on temporary duty in the Office of the Chief of the Air Corps conferring on various Air Corps matters.

General Pratt is an officer of broad military experience who has contributed his share in bringing the Air Corps to its present state of efficiency.

He joined the aviation branch of the Army during the World War, being appointed a Major in the Aviation Section, Signal Corps, on August 5, 1917, and assigned to duty at Kelly Field, San Antonio, Texas. During the War, General Pratt served brief tours of duty at Call Field and Brooks Field, Texas; in the Executive Section of the Office of the Director of Military Aeronautics, Washington, D.C., and with the A.E.F. in France on special duty.

Returning to Washington in December, 1918, he was assigned to duty as a member of the Board on Peace Organization and, upon completion of that work, was detailed as a member of the Advisory Board, serving therewith until August 31, 1919. He was then assigned as a special student at the General Staff College, Washington Barracks, D.C., and graduated therefrom on June 29, 1920.

General Pratt's next assignment was at Kelly Field, Texas, in command of the First Aero Wing. He served at this field until September, 1920, when he was assigned as Air Officer of the 8th Corps Area, Fort Sam Houston, Texas.

Although he learned to fly while at Brooks Field during the War, General Pratt, desirous of obtaining specialized flying training, was assigned to duty at Kelly Field as a student in Bombardment training in April, 1921. Upon the completion of this training, he was assigned to duty as a student at the General Service School, Fort Leavenworth, Kansas, graduating in June, 1923. From Fort Leavenworth he proceeded to the Army War College, Washington, D.C., and graduated from this institution on June 30, 1924.

For the next four years, General Pratt was on duty in the Office of the Chief of the Air Corps, first as Chief of the Training and War Plans Division, and later as Executive of the Training and Operations Division.

On June 1, 1928, he was assigned as Commanding Officer of Mitchel Field, New York, and of the 9th Observation Group. August 1, 1929, saw him trans-

ferred to the Hawaiian Department for duty as Air Officer. He held this office until July, 1930, when he was appointed Brigadier-General and Assistant Chief of Air Corps and assigned to duty at Wright Field, Dayton, Ohio, as Chief of the Materiel Division. Upon the termination of his four-year appointment, he reverted to his regular rank of Lieut.-Colonel.

General Pratt was born in New Mexico on September 2, 1882. He attended the Pennsylvania Military College for one year and was then appointed to the United States Military Academy. Upon his graduation in June, 1904, he was commissioned a second lieutenant of Cavalry. His service with the Cavalry branch of the Army was continuous until his appointment in the Aviation Section, Signal Corps, during the War to the rank of Major. He reached the rank of 1st Lieutenant on March 30, 1911; Captain, July 1, 1916; Major, July 1, 1920, and Lieut.-Colonel, June 20, 1923, all these constituting permanent promotions. During the War he held temporary rank as Lieutenant-Colonel and Colonel.

General Pratt commanded the Air Corps Manuevers at Wright Field, Ohio, in 1929. He served on many important boards during his military career and received high commendation for his valuable work during the War.

He holds the flying ratings of "Airplane Pilot" and "Airplane Observer."

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HONOR PAID TO DECEASED WAR-TIME FLYER

Approximately 400 people congregated at Hamilton Field, Calif., on Sunday, March 3rd, from the Bay districts to honor the memory of 1st Lieut. Lloyd Andrews Hamilton, after whom the Marin County flying field is named.

Past Department Commander Warren Atherton of the American Legion, State of California, dedicating the bronze plaque to Lieut. Hamilton, stressed that the deceased had been the victim of national unpreparedness. Lieut.-Colonel Clarence L. Tinker, in response, emphasized the destructive elements within the nation and hoped that this would be the dawn of a new day in which our fitness for war would sweep aside the possibility of armed conflict. Then, at the request of Mr. Don Barbeck, 5th District Commander, American Legion, the listeners bowed their heads for 30 seconds in reverence to the memory of Lt. Hamilton, who gave his life for his country as a war flyer at Lagnicourt, France.

TROPHIES AND AWARDS FOR ARMY PILOTS

In the leading article in this issue of the News Letter, announcing the award of the Mackay Trophy to Brigadier General Henry H. Arnold, a brief history is given of the first Army aviation Trophy, which was tendered in 1912 by Mr. Clarence H. Mackay to the Aero Club of America for award by the War Department annually to the officer or officers making the most meritorious flight of the year. The National Aeronautic Association, successor of the Aero Club of America, is the present custodian of this Trophy.

The next Trophy to make its bow to Army flyers was the one donated by former General William Mitchell, of the Air Service, in memory of John E. Mitchell, his brother, who was killed in action during the World War. The contest for this Trophy is a strictly military event for pilots of the First Pursuit Group of the Army Air Corps, and the winner retains it in his possession until the victor of the next year's contest is announced.

Thus far, ten contests have been staged, the first in 1922 during the Air Races held at Detroit, Mich., when the winner, Lieut. D.F. Stace, averaged a speed of 148 miles per hour. There were six competitors in this event, all piloting the MB-3 airplane.

The following year, during the International Air Races at St. Louis, Mo., the late Captain Burt F. Skeeel carried off the honors, averaging a speed of 156 miles per hour.

Up to last year, the high speed record for this annual classic was held by the late Lieut. Cyrus Bettis, who in 1924, during the International Air Races at Dayton, Ohio, averaged a speed of 175.43 miles per hour.

In 1925, Lieut. Thomas K. Matthews won the Trophy with an average speed of 181.5 miles per hour. The race was held at Mitchel Field, N.Y., and the winner piloted a Curtiss PW-3 Pursuit plane.

In 1926, when the International Races were held at Philadelphia, Lieut. L.G. Ellicott, in a Curtiss P-1 Pursuit, averaged 180.45 miles per hour, and he held the Trophy for one year, relinquishing it to the late 1st Lieut. Irvin A. Woodring, who on October 12, 1927, at Fairfield, Ohio, when the Mitchel Trophy Race was one of the features incident to the dedication of Wright Field, averaged a speed of 158.968 miles per hour. Fifteen P-1 Pursuit planes entered the Race, and there was but one minute and 23 seconds difference in the time of the first and the last plane.

Lieut. B.H. Lawson won the 1928 contest, which was held during the International Air Races at Los Angeles, Calif., his average speed being 154.743 miles per hour.

At Cleveland, Ohio, in 1929, the

locale of the International Air Races that year, Lieut. Paul B. Wurtsmith was the winner of the Trophy, averaging 152.17 miles per hour.

In 1930 the Mitchel Trophy Race was held at the home station of the First Pursuit Group - Selfridge Field - and 2nd Lieut. Louis A. Vaupre, winner of the contest, averaged 146.7 miles per hour.

No contest was held during the years 1931, 1932 and 1933, but last Fall, when the race was again held at Selfridge Field, Captain Fred C. Nelson eclipsed all speed records previously attained in the contests for this Trophy. As a matter of fact, this was the case with all the participants in the 1934 event. Captain Nelson averaged a speed of 216.832 miles per hour

The first competition for the General Mason M. Patrick was held during the Air Races at Los Angeles, Calif., in September, 1928. This Trophy was donated by the Hon. F. Trubee Davison, former Assistant Secretary of War for Aviation, as a perpetual memorial to General Patrick upon the latter's retirement as Chief of the Air Corps. Under the provisions of the gift, it was to be competed for annually by the commissioned pilots of the 3rd Attack Group.

This Trophy is a beautiful bronze plaque, 18 inches wide and 24 inches long. It is mounted on a piece of ebony. The upper half of the Trophy depicts a scene from the race. Planes are shown approaching, from the right, and a pylon at the extreme left. The lower half of the Trophy has been reserved for the purpose of recording the names of the winners from year to year. Seventeen pairs of wings are divided into five columns; the two outer columns have four wings each, while the three inner columns have three wings each. The columns are separated from each other by lighted torches. Each year the winner's name is engraved above one of the wings. At the base of the plaque is the following inscription:

Major General M.M. Patrick
For the Third Attack Group Race
Presented by F. Trubee Davison

Twelve pilots of the 3rd Attack Group participated in the first contest, all piloting the standard A-3 Attack plane, powered with the Curtiss D-12 engine, and the winner, Lieut. G.R. Acheson, averaged a speed of 139.525 miles per hour.

In 1929, when the Air Races were held at Cleveland, Ohio, 13 pilots of the 3rd Attack Group entered the competition. They piloted the identical type airplane flown the year before, but the speeds attained were considerably improved. Second Lieut. Ivan M. Palmer, the winner, averaged a speed of 149.020 miles per hour.

The contest for the Trophy in 1930 was held at Fort Crockett, Galveston, Texas,

the home station of the 3rd Attack Group. Nineteen pilots of the Group participated, flying A-3B planes. The winner, Lieut. L.C. Westley, averaged a speed of 149.12 miles per hour over six laps of a 10-mile triangular course, or a total of 60 miles.

First Lieut. Don W. Mayhue won the 1931 contest, which was also held at Fort Crockett. His average speed was 142.59 miles per hour.

No contests for the Trophy have been held since 1931.

The Cheney Award was established in memory of 1st Lieut. William H. Cheney, Air Service, who was killed in an air collision at Foggia, Italy, January 20, 1918. The donors of this award are Mrs. Mary L.C. Schofield, Peterboro, N.H., and Mrs. Ruth Cheney Streeter, of Morristown, N.J., the mother and sister, respectively, of Lieut. Cheney, who have jointly set aside a trust fund of \$10,000, the interest accruing therefrom to be used to make up the cash award. It is to be 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 which shall have been performed in connection with aircraft, but said act need not necessarily be of a military nature.

Those eligible to receive the Award are officers and enlisted men of the Air Corps, Regular Army; officers and enlisted men of the Air Reserve, and the widow or next of kin in the event of a posthumous award. Announcement of this award is made on January 20th of each year, that date being the anniversary of Lieut. Cheney's death.

A die of suitable design has been made, and bronze plaques are struck off each year the award is made, engraved with the name of the recipient as determined by the Cheney Award Board. An engraved Certificate, describing the meritorious act performed, is also given the recipient, together with a sum of money, usually \$500., the income derived from the trust fund after the necessary expenses in connection with the award have been defrayed.

The first award in 1927 was made to Master Sergeant Harry Chapman for conspicuous bravery in the Airship ROMA disaster, which occurred in February, 1922.

Awards for subsequent years were made as follows:

1928 to Lieut. Uzal G. Ent, Air Corps, for heroism during the National Elimination Balloon Race. He was aide to Lieut. Paul Evert, pilot of the Army balloon, and when it was struck by lightning, Lieut. Evert was killed and the balloon caught fire. Instead of jumping with his parachute, Lieut. Ent remained in the burning balloon, en-

deavoring to revive his companion, despite the danger of the balloon exploding at any moment.

1929. Lieut. William A. Matheny, Air Corps, for valor during an airplane crash in Nicaragua. He was pilot of a bombing plane being flown to Panama, Lieut. Dwight Canfield being co-pilot. Forced down in the jungles of Nicaragua, the plane caught fire. Lieut. Canfield, stunned and unable to move from the vicinity of the burning plane, he was rescued by Lieut. Matheny, who rushed into the flames and dragged him away from his perilous position.

1930. No award.

1931. Lieut. Robert D. Moor (posthumously). His conduct was that of "noblesse oblige" of an officer pilot toward an enlisted passenger dependent upon him for security. During a flight, when his plane became disabled, Lieut. Moor, disregarding his own safety, managed to keep it under control long enough for his passenger to jump with his parachute, but too late to save himself.

Private John B. Smith. This was a case of loyalty and devotion toward an officer of his service. Trapped in the burning wreckage of a crashed plane, the helpless pilot was released therefrom only through the valiant efforts of Private Smith, who slid headfirst into the blazing cockpit and unfastened the pilot's shoe which was tightly wedged in the rudder bar.

1932. Private, 1st Class, Arden M. Farley. His act of valor occurred on December 6, 1932, near Pontiac, Mich., when he rescued 2nd Lieut. William H. Dum, Air Reserve, from a burning plane after a forced landing.

1933. To three men for the first time in the history of the Award, viz: 2nd Lt. Wm. E. Bogen, Air Reserve; Staff Sgt. Roy D. Dodd, 16th Service Squadron, and Sgt. Thomas J. Rogers, 19th Attack Squadron. The act of valor occurred at Fort Clark, Texas, May 4, 1933, when the plane piloted by Lieut. Bogen fell in a group of trees and burst into flames. These three men re-entered the burning airplane and saved the lives of two trapped passengers.

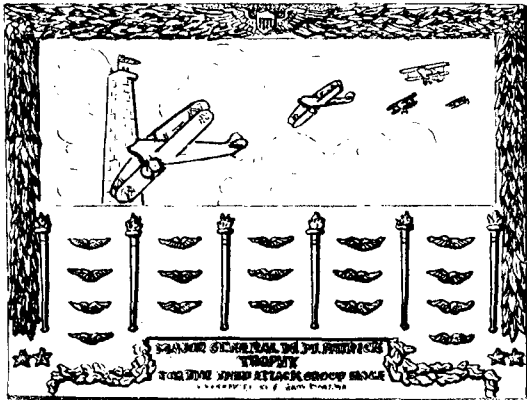
1934. No award. No act was considered outstanding, and the Chief of the Air Corps for the same reason the award for 1930 was not made, stated that it should not be cheapened by being awarded for any but a highly meritorious act.

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The accompanying pen and ink drawing of the three Trophies and the Cheney Award, above described, is the handiwork of Mr. Frank Dunnington, of the Information Division, O.C.A.C.

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The cover design for this issue of the News Letter was made by Mr. "Bob" Fitzgerald, of the Technical Data Section, Materiel Division.



PATRICK TROPHY

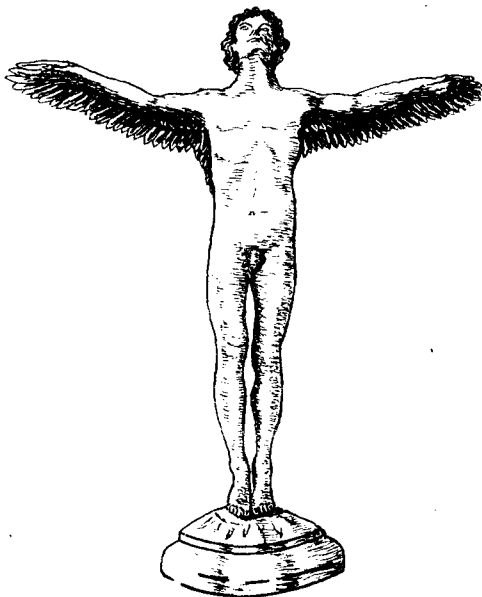


MACKAY TROPHY

AWARD AND TROPHIES

PRESENTED ANNUALLY TO

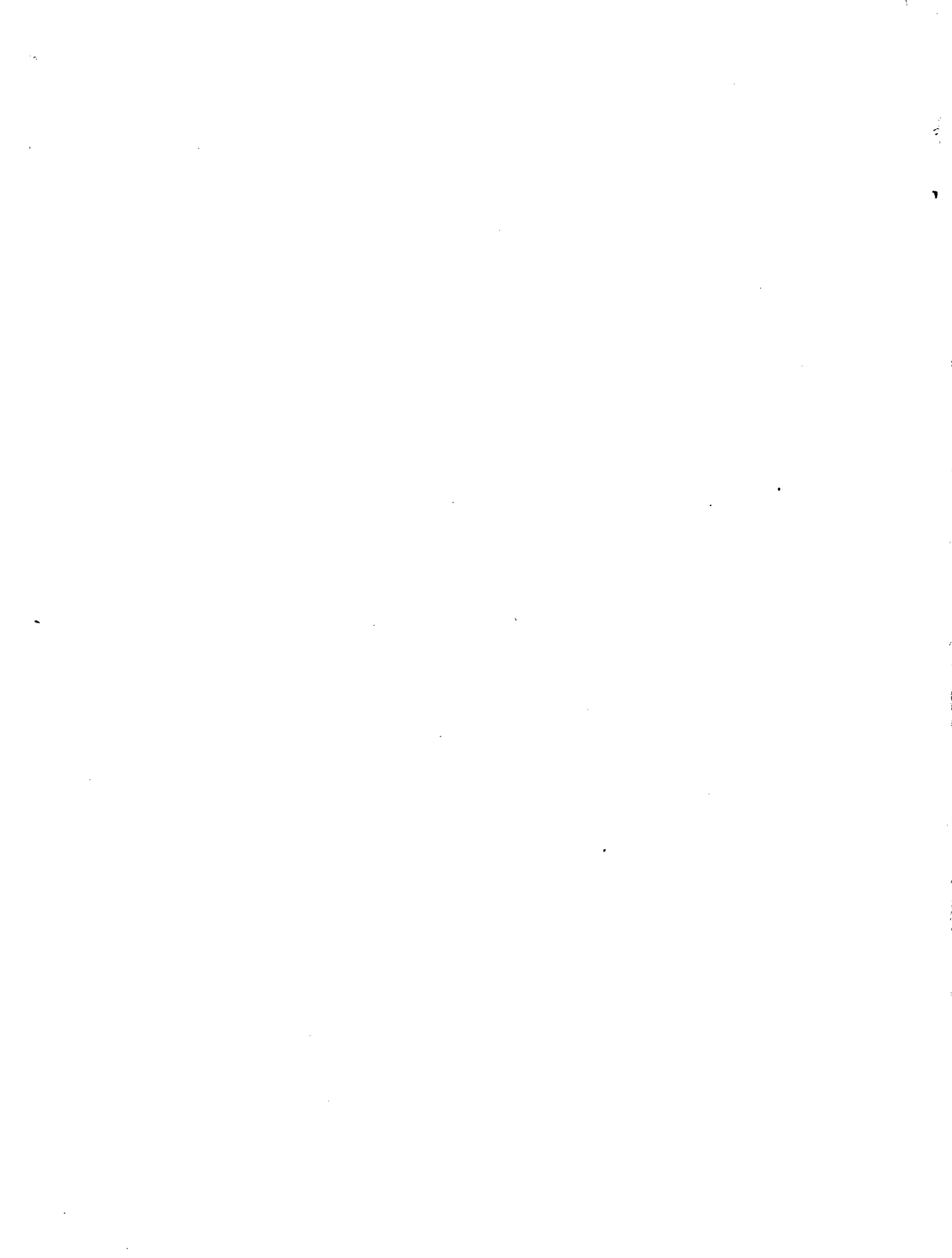
AIR CORPS PERSONNEL



MITCHELL TROPHY



CHENEY AWARD



PROMOTIONS FOR AIR CORPS OFFICERS IN HAWAII

Special Orders of the War Department, just issued, announce temporary advanced rank given Air Corps officers on duty with various units in the Hawaiian Department, effective March 12, 1935. The Chief of the Air Corps certified that no officers of suitable permanent rank are available for these duties. The advanced rank is effective for the period of each officer's particular assignment.

In the 18th Composite Wing, Major Michael F. Davis, Executive and Operations Officer, is advanced to Lieut.-Colonel, and 1st Lieut. Signa A. Gilkey, Assistant Operations Officer, to Captain.

Officers of the 5th Composite Group advanced in rank are Major Asa F. Duncan, Group Commander, to Lieut.-Colonel; Captain Phillips Melville, Intelligence and Operations Officer, to Major, and 2nd Lieut. Donald N. Yates, Adjutant, to First Lieutenant.

In the 18th Pursuit Group, Major Ernest Clark, Group Commander, is advanced to Lieut.-Colonel; Captain Clayton L. Bissell, Intelligence and Operations Officer, to Major; 1st Lieuts. James L. Daniel, Jr., Supply Officer, and John E. Bodle, Engineer and Armament Officer, to Captain; and 2nd Lieuts. Lauris Norstad, Adjutant, and Curtis E. LeMay, Radio Officer, to First Lieutenant.

Squadron officers advanced in rank are enumerated below, as follows:

Squadron Commanders
(All Captains)

Name	Squadron	Temp. Rank
Frank H. Fritchard	4th Obs.	Major
Early E.W. Duncan	6th Pursuit	"
James E. Duke, Jr.	19th Pursuit	"
Arthur G. Liggett	23rd Bomb.	"
Samuel G. Frierison	26th Attack	"
Lucas V. Beau, Jr.	50th Obs.	"
Wolcott P. Hayes	65th Service	"
John V. Hart	72nd Bomb.	"
Roscoe C. Wriston	75th Service	"

Flight Commanders
(All 1st Lieuts.)

Name	Squadron	Temp. Rank
Elmer J. Rogers, Jr.	4th Obs.	Captain
Fay R. Uptegrove	4th Obs.	"
Fay E. Clark	6th Pursuit	"
John C. Crosthwaite	6th Pursuit	"
Bryant L. Boatner	6th Pursuit	"
George H. Sparhawk	19th Pursuit	"
Russell Keillor	19th Pursuit	"
David P. Laubach	19th Pursuit	"
Robert D. Johnston	23rd Bomb.	"
Delmar T. Spivey	23rd Bomb.	"
Harvey F. Dyer	26th Attack	"
Homer L. Sanders	26th Attack	"
Harold G. Peterson	50th Obs.	"
Murray C. Woodbury	50th Obs.	"
Charles F. Born	72nd Bomb.	"
Reginald Heber	72nd Bomb.	"

Supply Officers
(All 2nd Lieuts.)

Name	Squadron	Temp. Rank
Richard H. Wise	4th Obs.	1st Lieut.
John K. Gerhart	23rd Bomb.	"
Joseph F. Carroll	50th Obs.	"
Louis A. Guenther	72nd Bomb.	"

Communications Officers - All 2nd Lieuts.

Name	Squadron	Temp. Rank
Charles F. Densford	4th Obs.	1st Lieut.
Russell H. Griffith	6th Pursuit	"
Leo P. Dahl	19th Pursuit	"
Richard C. Hutchinson	26th Attack	"
Robert A. Stunkard	50th Obs.	"

Engineer Officers - 1st Lieutenants

Name	Squadron	Temp. Rank
Waldine W. Messmore	65th Service	Captain
Aubrey L. Moore	75th Service	"

Engineer Officers - All 2nd Lieutenants

Name	Squadron	Temp. Rank
William J. Clinch, Jr.	4th Obs.	1st Lieut.
Mark E. Bradley, Jr.	6th Pursuit	"
Thomas D. Ferguson	26th Attack	"

Intelligence and Operations Officers - all 1st Lieutenants

Name	Squadron	Temp. Rank
Morris E. Nelson	6th Pursuit	Captain
Glenn O. Barcus	19th Pursuit	"
Ralph E. Koon	23rd Bomb.	"
Robert Loyal Easton	26th Attack	"
Ford J. Lauer	72nd Bomb.	"

Armament Officers - All 2nd Lieutenants

Name	Squadron	Temp. Rank
Carl W. Carlmark	4th Obs.	1st Lieut.
Llewellyn O. Ryan	6th Pursuit	"
Julian M. Chappell	50th Obs.	"
D.L. Kilpatrick, Jr.	72nd Bomb.	"

Addenda. Second Lieut. William L. Kennedy, Engineer Officer, 23rd Bomb. Squadron, promoted to 1st Lieutenant.

Officers on duty at the Hawaiian Air Depot, who were advanced in rank, are - Major Laurence F. Stone, Depot Commander, to Lieut.-Colonel; 1st Lieut. Oscar F. Carlson, Supply Officer, to Captain; and 2nd Lieut. John W. Egan, Chief Inspector, to 1st Lieutenant.

Effective March 19, 1935, the following-named officers of the Air Corps are assigned to duty in the Hawaiian Department and will have the temporary rank indicated:

To Captain: 1st Lieuts. Robert W. Warren and William J. Sams, both Intelligence and Operations Officers, the former with the 4th Obs. and the latter with the 50th Obs. Squadron.

To 1st Lieut.: 2nd Lieuts. Francis H. Griswold, Supply Officer, 6th Pursuit Sqdn.; Richard S. Freeman, Armament Officer, 19th Pursuit Sqdn.; Mills S. Savage, Armament Officer, 26th Attack Sqdn., and William E. Offutt, Armament Officer, 75th Service Squadron.

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Major William O. Ryan and 1st Lieut. Gordon P. Saville, Air Corps, now on duty at Maxwell Field, Ala., assigned to duty, respectively, as Director and Secretary, Air Corps Board, Maxwell Field, received temporary promotions, effective March 11, 1935, the former as Lieut.-Colonel and the latter as Captain.

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Effective March 11, 1935, Major Edward L. Hoffman, Air Corps, was assigned to duty as Group Commander, 12th Observation Group, Brooks Field, Texas, this assignment carrying with it the temporary rank of Lieut.-Colonel.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Office, Chief of the Air Corps, Washington - 1st Lieut. Lawrence J. Carr, from Bolling Field; Captain George L. Usher, from Langley Field; Captain Rowland C.W. Blessley, from Crissy Field; Major Wm.E. Lynd, from Mitchel Field; 1st Lieut. John S. Griffith, from Kelly Field.

To Randolph Field, Texas: 1st Lieut. Herbert M. Newstrom, from Crissy Field.

To Fort Bragg, N.C.: 1st Lieut. Fred A. Ingalls, from Crissy Field.

To Panama: Major Donald P. Muse, from Crissy Field.

To Farmingdale, L.I., New York, for duty as Air Corps Representative of the Seversky Aircraft Corporation: Captain John S. Gullet, from Materiel Division, Wright Field.

To Materiel Division, Wright Field, O: Capt. Harry G. Montgomery, from Selfridge Field.

To Fort Sam Houston, Texas, for duty as Control Officer, Southwestern Airways: Capt. Charles A. Pursley, from duty with Organized Reserves, Pittsburgh, Pa.

To Peoria, Ill.: for duty in connection with recruiting - Col. Theodore A. Baldwin, from duty at U.S. Disciplinary Barracks, Governors Island, N.Y.

To Randolph Field, Texas: Capt. Douglas Johnston, from Hawaiian Department.

RELIEVED FROM DETAIL TO THE AIR CORPS:

2nd Lieut. Harold C. Davall, to Hawaiian Department for assignment to duty with Infantry.

PROMOTIONS: to 1st Lieutenant: 2nd Lieuts. John N. Stone, rank Feb. 6th; Phineas K. Morrill, rank Feb. 7th; Thomas R. Lynch, rank February 11th.

ASSIGNMENTS: Lieut.-Colonel Walter H. Frank, Group Commander, 9th Bombardment Group, Mitchel Field, N.Y.; Lieut.-Colonel John H. Firie, Group Commander, 17th Attack Group, March Field, Calif.; Captains Carlton F. Bond, Adjutant, 3rd Wing, Barksdale Field, La.; Angier H. Foster, Intelligence and Communications Officer, 3rd Wing, Barksdale Field; Malcolm N. Stewart, Intelligence and Communications Officer, 2nd Wing, Langley Field, Va.; Alfred E. Waller, Assistant Operations Officer, 2nd Wing, Langley Field, Va.

Following officers are relieved from assignment to duty as students at the Air Corps Tactical School, Maxwell Field, Ala., and will then report to the Commandant thereof for duty on the staff and faculty: Captain Byron E. Gates, 1st Lieuts. Haywood S. Hansell, Jr., Leonard H. Rodieck, John M. Weikert.

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CHANGES AT LANGLEY FIELD

During the first week of March, Langley Field, Va., was in the process of changing from a Regular Air Corps Station to a Headquarters G.H.Q. Air Force, 2nd Wing Headquarters G.H.Q. Air Force, 8th Pursuit Group, 2nd Bombardment Group, and Station Complement. The reassignment of personnel, barracks and duties to conform to the new set-up is practically complete. General Frank M. Andrews arrived on the Post on March 1st, and General Pratt was expected on March 7th. A Wing Re-

view was scheduled for March 6th, participating units from Selfridge Field, Mitchel and Langley Field to be received by General Andrews.

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19th WING IN REVIEW FOR SIX GENERALS

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

The final review of all the troops in the Pacific Sector, prior to their entry into the annual department maneuvers was so timed as to coincide with the presence at the Balboa docks of the Transport REPUBLIC. Among the passengers on the Transport were Major Generals Paul B. Malone, enroute to command the 9th Corps Area; Hugh A. Drum, enroute to command the Hawaiian Department; Brigadier-Generals James A. Woodruff, enroute to command the Port of Embarkation at Fort Mason, Calif., and Edward M. Shinkle, Ordnance Department, on an inspection tour. Besides the visiting Generals in the reviewing stand were Major-General Harold B. Fiske, commanding the Panama Canal Department, and Brigadier-General John W. Gulick, commanding the Pacific Sector.

The first air unit, a provisional battalion of 480 strong, commanded by Captain W.B. Gates, marched by the reviewing stand following one of the Infantry regiments. The precision of its marching received much enthusiastic comment, despite the excellent example set by the preceding battalions.

The next Air Corps element to pass the reviewing stand was the motor column. Although the tactical transportation of the 16th Pursuit Group had been in the hands of the organization only a few weeks, drivers had been sufficiently trained so that lines and columns were well held throughout the ceremony.

The final element in the review was the 16th Pursuit Group, 14th Observation Squadron attached, Major Robert L. Walsh, commanding. The timing of the aerial pass-by was admitted by all spectators to be perfect. The Pursuit Group had remained well out of sight during the passing of the ground elements in review. Just as the last motor tractor cleared the reviewing stand, the first element of the Group arrived and passed over it.

After the review, General Gulick, the Sector Commander, issued a General Order praising the participating troops.

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The NEWS LETTER would appreciate hearing from Kelly Field, Texas; France Field, Panama Canal Zone; Chamute Field, Kaintoul, Ill.; and more frequently from Selfridge, Mitchel and Randolph Fields. Reference is made to Circular Letter No. 35-1, Office of the Chief of the Air Corps, dated January 4, 1935.

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Members of the Air Corps who possess any talent in pen and ink sketching are cordially invited to submit cover designs for the News Letter on letter size paper. Use India ink.

NOTES FROM AIR CORPS FIELDS

Hamilton Field, Calif., March 5th.

The Chinese Aviation Mission touring this country to investigate methods and management of Army posts in the United States and Europe, visited Hamilton Field on March 4th. The Mission is headed by Col. P.T. Mow.

The Masons of the field were invited to San Rafael on the night of March 3th, as guests of the San Rafael Pyramid, to hear a lecture on "Americanism" and enjoy the vaudeville and refreshments especially prepared for them as guests of honor on the special occasion of "Hamilton Field Nite."

The noncommissioned officers of the field were entertained on the evening of March 2nd by the American Legion Post No. 28 of Petaluma.

Captain Harold D. Smith is still at Langley Field tuning up the 10 Martin Bombers for the long "hop" from the Capital to the Canal Zone.

Two men of the 70th Service Squadron died recently. Private Melville F. Mundell died in bed, cause unknown. He previously served in the 65th Service and the 28th Attack Squadrons, Hawaiian Department. Corporal Angus D. McDonald jumped to his death from the second story of the west wing of the Letterman General Hospital. He began his service back in 1920. About a year his automobile collided with a street car and broke his arm. On December 5th, last, he fell on the floor of the hangar and broke his arm in the same place. Despondency due to the slow healing of the break is believed to be the cause of his fatal jump.

Major Robert C. Murphy, post surgeon during the absence of Major Fabian L. Pratt on the Panama Flight, addressed the Masons of Marin Lodge No. 191 at San Rafael on the night of February 20th on the subject of "George Washington, the Mason." Thirty Hamilton Field Masons attended. The following evening, Major Murphy lectured to the cadets of the San Rafael Military Academy on "George Washington, the Officer and Gentleman."

Eight Reserve officers terminated their active service on February 28th and reverted to civil life, viz: 2nd Lieuts. Jean R. Byerly, Wilton B. Miller, James J. Roberts, Bernard A. Schriever, Elmer P. Schwarz, John D. Treher, Joel L. Crouch and Sterling T. Love.

On February 21st, 16 Cadets at this station received their commissions in the Air Reserve, viz: Alexander W. Bryant, Cady R. Bullock, Alexander T. Burton, William C. Capp, Sven H. Ecklund, Richard C. Kugel, Alvin R. Luedecke, Glen C. Moser, Lewis L. Mundell, Fay W. Olmsted, Clair A. Peterson, Louis W. Proper, Edgar W. Root, George S. Sanford, Norman F. Timper and Edward W. Virgin.

First Lieut. Alford V.P. Anderson reported for duty from the Philippines.

First Lieut. John T. Morrow, who just completed his tour of duty in Hawaii, will report to this field upon the completion of leave of absence granted him.

Langley Field, Hampton, Va., March 5th.

First Lieut. Lloyd H. Tull was transferred to Aberdeen Proving Ground, being replaced by 2nd Lieut. Hugh McCaffery.

Reserve officers recently relieved from duty at the field and reverting to inactive status were: 2nd Lieuts. E.C. Rohl, G.K. Crain, H.L. Deitz, B. Lay, Jr., Francis Pope, Frank P. Smith, Ladson G. Eskridge, Keith N. Allen, Franklin K. Paul, John S. Lambie, Jr., James B. League, Jr., William T. Hudnell and Roger H. Kruse.

Second Lieuts. William T. Hudnell, Harold L. Neely, James H. C. Houston, George C. Diggs, Harold L. Kreider, John O. Neal and Edward S. Allee, who recently reverted to inactive status upon completion of tours of duty at the field, are now busily preparing for the forthcoming examination for commissions in the Air Corps, Regular Army.

Barksdale Field, Shreveport, La., March 5th.

Captain Ennis C. Whitehead, after a very short stay at the field, was transferred on March 1st to the GHQ Air Force at Langley Field.

Completing one year of active duty as Flying Cadets, William Eades, James B. Hay, J.W. Hinton, W.B. Keese, R.A. Livingstone, G.R. McMahon, F.W. Rodieck and Frank C. Stone were commissioned 2nd Lieutenants in the Air Reserve and placed on active duty.

Second Lieuts., Air Reserve, J.L. Gentry, P.B. Klein, J.C. Mock, W.F. Grabill, L.R. Williams and W.M. Heid returned to civil life following the termination of their active duty.

Two enlisted men, James R. Howerton and Strubbe McConnell, Jr., departed February 23d for Randolph Field to commence flying training as Cadets.

Flying training for the 20th Pursuit Group is being conducted under the direct supervision of Group Operations. All airplanes of the Group have been pooled to facilitate control. Operations are being confined principally to night, instrument and radio beacon flying.

San Antonio Air Depot, Duncan Field, Texas.

Visiting this station to have repairs made to the supercharger on their P-30 were Capt. E.G. Montgomery and Lieut. L.H. Dawson of Selfridge Field.

Captain W.B. McCoy, Air Corps Instructor, Tennessee National Guard, ferried an O-25A plane from this Depot to Sky Harbor.

Captains C.J. LaGue and H.H. Montague, and Lieut. Booth, of the Colorado National Guard Air Corps, Lowry Field, Denver, ferried two O-19E airplanes from this Depot to their home station on February 28th.

41st Division Aviation, Wash. Nat'l Guard

In preparing for the annual National Guard encampment, which this year will be a division camp, Major Robin A. Day, Air Corps, Instructor, is urging that the Air Corps be made an active part of every maneuver and problem.

"We don't want to just be in the picture; we want to be a part of the picture," Major Day informed Colonel Alex Sabiston of the Division Staff. "We will have the airplanes, pilots and gasoline necessary for all the work you can give us. In case of an emergency, the Air Corps would be called upon for many things, but no one will know just what these mean unless it is made an active part of the camp training program."

Officers in the 41st Division, Felts Field, Spokane, are taking an active part in the newly organized Washington National Guard Association. Functioning for the first time in legislative matters, the Association is attempting to reinstate the clothing allowance for officers, and the retained pay for the enlisted personnel.

Of particular interest to the National Guard Air Corps is legislation whereby officers and enlisted men will receive the same treatment accorded Regular Army Air Corps officers in case of injury or death. National Guard insurance is also being considered by the Association.

That for which pilots of the Division have dreamed about ever since the formation of their organization has come true. Major Day, Instructor, was authorized by Adjutant General Maurice Thompson to issue cross-country flights on immediate request within a radius of 150 miles of the home station, or to such airports as will permit return the same day on one tank of gasoline.

Heretofore it was necessary for pilots to request their cross-country flights from the Adjutant General, whose headquarters is 200 miles across the State. Often adverse weather conditions made the flight impossible on the day designated, making necessary another request upon the Adjutant General.

In keeping with this new policy, pilots of the organization have launched a program of "125 minimum flying hours this year" for every pilot in the Squadron. In several instances, this minimum has already been exceeded, due to the great transcontinental distance traveled by pilots of the Division to Nashville, Tenn. and Miami, Fla.

Lack of radio equipment is hampering the training program. On the daily weather flights by the Squadron to altitudes ranging from 18,000 to 21,000 feet, it developed that the SC-134 set is not always dependable.

National Defense week found the Squadron taking an active part in the Spokane program to help build "A Legal Limit Army and Navy Second to None."

On a night flight a three-ship formation was sent up to demonstrate to Spokane's 120,000 population the ease with which enemy aircraft could destroy the city without being detected other than to hear the drone of the

motors. At the conclusion of the flight, three parachute flares were dropped. The demonstration was enthusiastically received by the newspapers and radio.

A special training program, executed at the regular Sunday morning drill, was arranged for the public as part of the National Defense program. A field radio set was established in the open for communications with airplanes circling in view of the crowd. A drop and pick-up message mission was executed, as was dummy bombing, formation and instrument flying. The public was invited and encouraged to inspect the airplanes, buildings and other equipment.

Hawaiian Air Depot.

Many changes have occurred in the administrative personnel of the Depot during the past year. The Headquarters Staff is now composed of - Major Laurence F. Stone, Depot Commander; Capt. Arthur G. Liggett, Adjutant; and 2nd Lt. Louis A. Guenther, Airways Supply and Maintenance Officer. The Engineering staff is headed by Capt. E.R. Page, with 1st Lieut. Oscar F. Carlson as assistant. First Lieut. Russell Scott is being relieved as Depot Supply Officer, which position he occupied for two years, and 1st Lieut. Charles F. Born will assume this duty.

Production for the Depot during January included the major overhaul of 7 airplanes and the assembly of a Bomber overhauled at Rockwell Air Depot.

Of particular interest to personnel of the Depot is the recent acquisition by the War Department of land for the new Kamehameha Airport, which means that the new Hawaiian Air Depot is getting closer to a reality. While no definite information is on hand as to the availability of funds for buildings, it is understood Congress will be asked to appropriate approximately \$11,000,000 for the project.

Crissy Field, Presidio of San Francisco.

The personnel and buildings of the post were recently inspected by Colonel Douglas Potts. The 91st Observation Squadron and the 15th Photo Section were commanded by Major Floyd E. Galloway in the absence of Major Donald P. Muse. Following the troop inspection, Colonel Potts inspected airplanes and transportation, barracks and all departments. The Inspector was well pleased with the appearance of the post.

San Francisco culminated its Defense Week program with a large parade on Feb. 22nd, and was ably abetted by a large number of units from the United States Battle Fleet anchored in the harbor at the time. Many other defense organizations participated, including two Navy blimps and a squadron of P-26's from March Field. Crissy Field turned out its entire quota of airplanes in a 5-plane formation (one A-3, one BT, one OA-4 and two O-25C's).

A wave of ambition considerably cut down the officer strength, with attendant rearrangement of squadron duties for both enlisted men and officers. Clair L. Wood, Eyvind Holterman,

George H. Macintyre, Russell E. Laird, Maurice E. Glaser, Jasper N. Bell, Robin C. Cannon, Robert E. Jarmon and Fred J. Stevens, all 2nd Lieuts., Air Reserve, enlisted in the 91st Obs. Squadron with high hopes of obtaining a commission in the Air Corps, Regular Army. Harold A. Gunn, our only remaining Reserve officer on active duty, is also making a bid for a regular commission.

First Lieuts. Ralph E. Holmes and Robert M. Kraft, from Hawaii, and Herbert L. Newstrom from Panama were assigned to the field, the first named as Personnel Adjutant. The two last named officers are attached to the Letterman General Hospital, Lieut. Newstrom to receive treatment for a lung injury received in Panama, and Lieut. Kraft to appear before a retiring board.

Lieuts. John W. Kirby, Wycliffe E. Steele and Willard R. Shepard were temporarily assigned to the field pending departure for foreign service.

In the space of a few months, Crissy Field has fostered five brand new boys. The boating and cigar-producing fathers are Captain LeRoy A. Walthal, 1st Lieut. Fred L. Anderson, 2nd Lieuts. Richard C. Lindsay, William Ball and Elvin F. Maughan. Private (former Lieut.) Clair L. Wood was the only one to step out of line with a beautiful girl.

Ed. Note: Lieut. Maughan not so long ago was on duty in the Information Division, Office of the Chief of the Air Corps. No doubt he and other friends of Captain E.E. Hildreth, of the Information Division, will be interested to hear that the Captain passed around the cigars last week when Junior, his first, arrived in this troubled world and immediately gave a fine demonstration of his lung capacity.

Four airplanes of the 91st, preceded by a truck convoy, recently journeyed to Watsonville, Calif., for an overnight stay. It is stated that Watsonville has a very fine airport, and the guess is hazarded that it may be the site of the 91st's summer encampment.

Materiel Division, Wright Field, Dayton, O.

It was good during 1934 to welcome back to the Materiel Division several old friends whose lot had been cast with it before, either at McCook Field or the present Wright Field. Because of those former years of association, we hope it seemed a little like a return home to them, as it seemed to those of us who are perennially here. Names of some of them and the duties to which they were assigned are as follows: Majors O.P. Echols, Chief of Engineering; W.F. Volandt, Procurement Section; Captains A.W. Brock, Assistant Executive; F.O. Carroll, Asst. Chief, Engineering Section; and Carl F. Greene, Aircraft Branch.

The return of Brig.-General A.W. Robins, formerly Executive, who replaced General Pratt as Chief of the Division and who is expected to arrive in April, will, it is hoped, also be a pleasant home coming. General Robins is at present attending the Army War College in Washington, the assumption of his new duties being deferred in order that he may obtain his diploma for the course. Colonel

Robert Goolrick is now acting Chief of the Division. He was recently promoted.

March 5th was General Pratt's last day at the Materiel Division, and he made it an impressive one by bidding a personal farewell to each of the employees. Since they number approximately a thousand strong, this was truly a labor of good will and friendliness, and was most deeply appreciated.

Probably no Chief of the Materiel Division has ever elicited greater measure of esteem on the part of those serving under him. The word "General" when referring to him bore an inflection of affection and respect even on the lips of those who came little in contact with him. Nor was this esteem caused by any definite act or circumstance. General Pratt came to the Materiel Division in Aug. 1930, and served there practically with no interruption until March 5th. It was definitely an example of the influence of character and personality upon a large and varied group of people. He liked Dayton, the Materiel Division, and its people. He sincerely believed in their desire to cooperate with him. And upon leaving he said he believed no man had ever had finer cooperation from a large group than himself. Men who are able to make such statements usually have only themselves to thank, but the nice part is that they do not realize it.

As Chief of the Materiel Division, General Pratt has been close to the sources of practically all Army aircraft technical development. The results and processes of the Wright Field laboratories have become thoroughly familiar to him. Such knowledge must be valuable to him in his new duties, enabling him to judge and analyze the equipment requirements of his squadrons. The best wishes for happiness and success in his new field go with him.

Mr. P.L. Bronson, Secretary of the Chamber of Commerce of Rapid City, South Dakota, came to Wright Field to discuss with Captains A.W. Stevens and O.A. Anderson arrangements in Rapid City for the coming Stratosphere Flight. At present it is planned that assistants connected with the preparation for the flight will move into last year's camp near Rapid City some time in May, the probable flight date being set for some time in June.

Lieut.-Col. Frank D. Lackland, who recently reported for duty as Chief of the Field Service Section, left for a tour of the south and west in order to become familiar with the supply and engineering activities of the Air Corps stations in these areas.

Major J.G. Taylor, Captain P.P. Hill and Lieut. B.W. Chidlaw flew the new Douglas YOA-5 amphibian airplane from the contractor's plant to Wright Field at an average speed of 166 miles per hour. This is quite an accomplishment in an airplane of this size.

Lieut. B.S. Kelsey returned to his permanent assignment in the Aircraft Branch after a special course in navigation, lasting six weeks and conducted at Rockwell Field.

The new Kellett Wingless Autogyro is now at the Materiel Division for performance test and evaluation.

SOME OF THE MORE INTERESTING BOOKS AND DOCUMENTS
RECENTLY ADDED TO THE AIR CORPS LIBRARY

Available for loan to Air Corps Organizations only upon request to the
Air Corps Library, Munitions Bldg., Washington, D.C.

- C 21 The renovation of the Air Army, by General Picard. 2 p. French
France/3 Test. From "Miroir du Monde", Nov. 17, 1934. Discusses doctrine of
 use, equipment policy and personnel policy.
- C 70/21 Command of the sea or command of the air? By A. Meurer. Trans.
 from "Deutsche Wehr", May 8, 1931. Tr.-5375-b-2. 11p.
- C 71.7 Germany's air defense problem, by Bogatsch. Trans. from "Deutsche
Germany/2 Wehr", Jan. 8, 1932. Tr.-B-6149. 26 p.
- D 00.12/2 Experimental study of a biplane of infinite span, by Henry Girerd.
No. 53 Paris, Air Ministry, 1934. 2 pts. illus. diagrs. (Scientific
 and technical publication E3) French text.
- D 52.1 Potez military airplanes and seaplanes. Paris, Henry Potez, 1934?
Potez/40 28 p. illus. French text.
- 629.13 The 1934 contest for the Deutsch de la Meurthe trophy. Wash.
Un3/tm National advisory committee for aeronautics, Feb. 1935. 43p.
No. 765 illus. diagrs. (Technical Memo. #765.)
- 355.21 Germany's secret armaments, by Helmut Klotz. Lond. Jarrolds, 1934.
K69 190p. In this book Dr. Klotz, an ex-officer of the German Navy
 and ex-Member of the Reichstag writes of the new and terrible
 weapons under mass production in specified German factories. He
 also tells us that the Epp plan - Scheme for the war contemplated
 by Germany against Belgium, Holland and France- in spite of pub-
 licity is still going on.
- 356/L62 The future of infantry, by B.H. Liddell Hart. Lond. Faber, 1933.
 83 p. Not only gives future information relative to the Infantry,
 but tells of the past. The author says that in order to forecast
 the future trend of infantry you must know the past.
- 629.1309 Histoire de l'aeronautique. Paris, L'illustration, 1932. 569 p.
D69 Considered the most complete work of its kind. Beautifully
 illustrated.
- 629.191 The gyroscopic compass, by T.W. Chalmers. Lond. Constable, 1920.
Ch35 167 p. A non-mathematical exposition.
- 940.5/Si4 America faces the next war, by F.H. Simonds. N.Y. Harper, 1933.
 Brief study of the approaching struggle in Europe and whether the
 United States will be drawn into the conflict. 82 p.

Selected Magazine Articles

The modern trend of retractile undercarriage. How they originated some
sixteen years ago. Representative types reviewed. The vogue spreads to bi-
planes. In "Flight", Feb. 14, 1935.

The Training of an aeronautical engineer. Author claims that it takes
from five to six years from time of leaving school to reach stage when a
student may consider himself qualified. In "Journal of the Royal Aeronautical
Society", Feb. 1935.

Trend of development in Military aircraft. In "Journal of the Royal
Aeronautical Society", Feb. 1935.

A new method for calculating the climbing speeds of aeroplanes of great
climbing capacity. In "Journal of the Royal Aeronautical Society", Feb. 1935.

General Information

Recently the Library has started a card file giving characteristics and
performances of foreign military airplanes.

INSPECTION DIVISION NOTES

This office is in receipt of a number of complaints with reference to the "greaseless" wheel bearings used in the wheels of some of the older type airplanes. Existing instructions prohibit the use of grease.

These comments were referred to the Materiel Division by memorandum, reading in part as follows:

"2. * * * The prohibition against greasing axles was placed in effect to avoid grease working into the brake drums or working in between the bushing and the wheel, which would permit the bushing to turn inside the hub, which is not designed to take care of such action."

The reply of the Chief, Materiel Division, stated:

"1. Activities have been prohibited from using grease in plain bearing Bendix wheels for reasons mentioned in paragraph 2 of basic communication. No lubricant is required in bushings with the graphite insertions and any grease applied has a very detrimental effect causing rapid deterioration of the graphite. When these graphite insertions are destroyed, the bushing has a tendency to freeze to the axle, thus turning inside the hub. Installation of these bushings is confined to the control depots as they must be press-fitted into the hub and line reamed with a special reamer after installation for the proper clearance. Where sufficient clearance has not been allowed, stations were advised to apply dry graphite occasionally to the inside of the bushing or portion of axle on which the bushing rotates. Worn condition of the axles, particularly on the O-19 series airplanes, has caused frequent replacement of bushings as the brake adjustment is very difficult to maintain where an out-of-round condition in the bushing exists.

"2. No airplanes equipped with plain bushing type wheels have been procured for a number of years. The cost of replacing this type wheel on existing aircraft in service with the roller bearing type wheel is too great to warrant such action."

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The Air Commerce Bulletin, dated February 15, 1935, issued by the Bureau of Air Commerce, U.S. Department of Commerce, contains a suggestion that airmen desiring to establish radio contacts with ground personnel on the Federal Airway System call and communicate with intermediate radio stations, whenever practicable, instead of trying to work with weather broadcast stations. The article appears on page 186. There are, in addition, articles on the icing of aircraft carburetors and aircraft radio antennae, which, it is thought, will be of professional interest to all Air Corps personnel.

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Technical Regulations No. 1210-1, August 6, 1934, covering Radio Sets SCR-AA-183, and SCR-AA-192, have been published and distributed by the War Department.

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The following radiogram was sent to the Rockwell, San Antonio, and Middletown Air Depots:

"Due to P Twenty Six A Airplanes being of all metal construction and the fact that inspection of airplanes of this type after ten months of use in the Rockwell Area indicates condition does not warrant overhaul the first overhaul period for airplanes of this type may be extended to fifteen months provided inspection does not indicate airplanes should be overhauled prior to fifteen months use stop Request receipt acknowledge."

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The following difficulties have been extracted from recent Unsatisfactory Reports:

"R-1820-37 Engine: An inspection of the engine after removal from the airplane revealed that the exhaust valve guide boss of No. 6 Cylinder had burned away."

"Altimeter Assembly, Type C-5: This instrument was installed 11/27/34, in accordance with Section III, Technical Order 05-30-1. After 90:55 flying time the altimeter read approximately 200 ft. too high. It is believed that the case leaks around the crystal enough to cause an incorrect static pressure." (3 reports)

"Lubricator, Style No. 3, Part No. AN 285-9: An inspection revealed that the ball check of the lubricator, style No. 3, Part No. AN 285-9, had come out of the body of the lubricator on No. 4 Cylinder Exhaust V-6739, A.C."

Rocker Box, thereby allowing the grease in the Rocker Box to drain out, by gravity, when hot."

"Installation of Oxygen Equipment P-26A Type Airplanes: Difficulty has been encountered in installing Container, Liquid Oxygen, Part No. 32-D5450-1, Serial No. 324, capacity, 2.5 liters, manufactured by Pollak Manufacturing Company. The circumference of this container at largest part is 26 inches and it is too large to fit in the bracket installation oxygen container, Part No. 14-853, and the strap, Part No. 14-853-1."

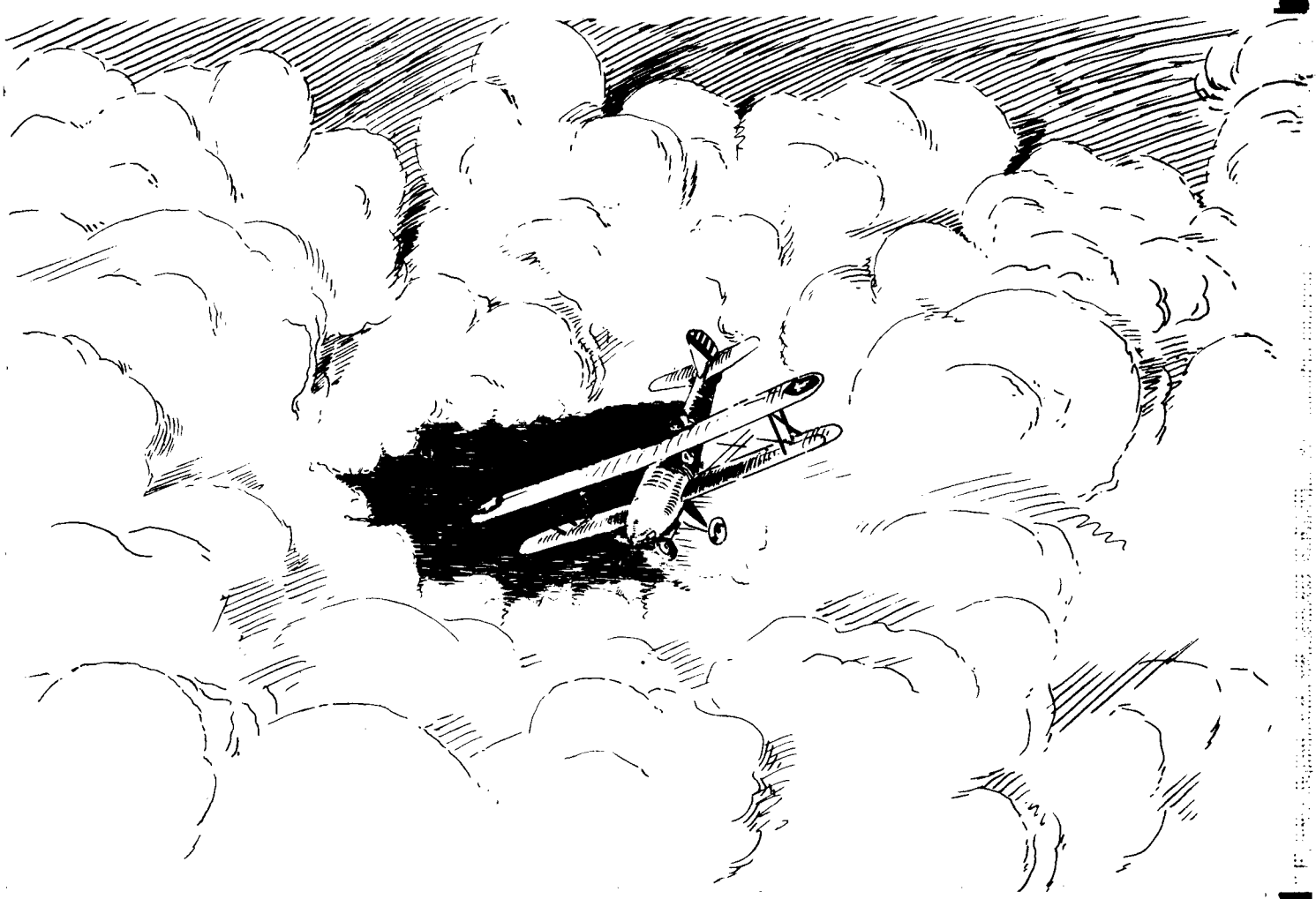
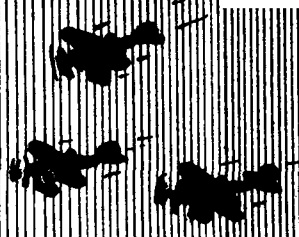
"P-26A Airplane: It is reported that Tube, solenoid box L.H. to Magneto L.H., Part No. 15-2810-53, is completely loose at both ends and is held in place by the wires only. It will allow oil to enter the junction box or magneto."

"Warning Vibrator, Foot Pedal, Type B-1, Part No, unknown: The vibrator failed due to burned and broken bakelite installation ring of breaker mechanism. It is believed that this failure was caused by continued operation of the part either due to malfunction of the throttle rod contact fingers or continued vibration of the part during an extended glide of the airplane with the landing gear up and the throttles closed."



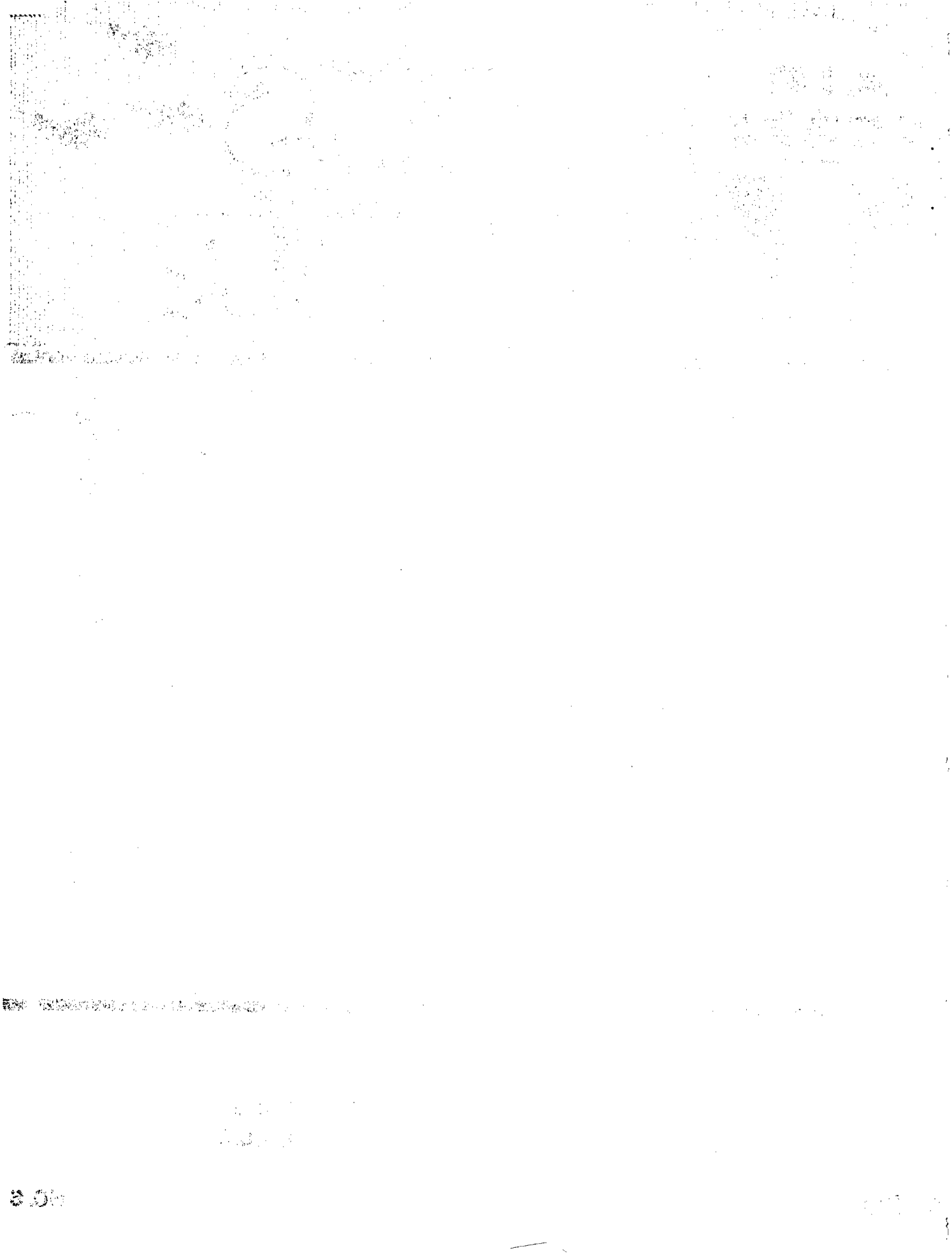
NEWS LETTER

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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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FIELD EXERCISES OF SECOND BOMBARDMENT WING, AIR CORPS

The following extracts are taken from the report of Major B.Q. Jones, Air Corps, who commanded the 2nd Bombardment Wing (now part of the Second Wing, GHQ Air Force) on its recent maneuvers in the Fourth Corps Area:

"1. Pursuant to authority of 4th Indorsement, A.G.O., Washington, D.C., dated December 6, 1934, to the Commanding General, Third Corps Area, Baltimore, Maryland, the Second Bombardment Wing, providing its own shelter and messing facilities, engaged in field exercises in the Fourth Corps Area, first concentrating at Miami, Florida, January 11, 1935, and then engaging in combat maneuvers and concentrating in five other areas, returning to its home station February 3, 1935.

a. A detachment of the 19th Airship Squadron accompanied the Wing to Miami, Florida, returning to Langley Field from that place.

2. Strength of Units: The personnel participating in these field exercises, including 4 officers and 14 enlisted men comprising the Airship Squadron detachment, totalled 99 officers, 19 Flying Cadets and 255 enlisted men. The strength of the 2nd Bombardment Group was 45 officers, 11 Flying Cadets and 114 enlisted men, and that of the 8th Pursuit Group, 43 officers, 8 Flying Cadets and 114 enlisted men. This Group personnel, together with 4 officers and 8 enlisted men of Headquarters 2nd Bombardment Wing, 2 officers and 2 enlisted men of the Medical Corps and one officer and 3 enlisted men of the supply detachment, made up the total personnel strength as above stated.

The equipment included 29 Bombardment, 44 Pursuit and 9 Transport planes, 45 trucks and one ambulance.

3. Organization:

a. Shortage of airplanes, including transport, required the organization of the Wing into two groups of two squadrons each with motor vehicles attached for the transportation of personnel and equipment.

b. A detachment of Air Corps Station Supply accompanied the Wing as an Air Corps mobile advanced supply point. The Air Corps Supply Officer also acted as Wing contracting officer.

c. For the combat maneuvers from dispersed airdromes the command was divided into opposing Red and White Forces,

each under the command of a group commander and composed of one squadron each of Bombardment and Pursuit operating over two opposing Army fronts.

d. The Flight (of 2 elements of 3 planes each) operated as the basic tactical unit; the squadron as the basic administrative and tactical unit; the group as the basic supply, administrative and tactical unit; the wing as the major tactical command.

The Group commanders and staffs directed the tactical employment and administered the needs of their composite groups (half Pursuit and half Bombardment) in their respective combat sectors. The Wing Commander and staff functioned as the superior headquarters in the theatre of operations.

(1) The Group Commanders and Staffs evidenced unfamiliarity in the employment of the attached Squadron of the other group. This was due to lack of training in the tactics and technique of the other class of combat aviation.

4. Operations:

a. The Wing, messing, sheltering (in tents), maintaining and supplying itself thruout the exercises, concentrated at Miami, Fla., Jan. 11, 1935, two days late due to bad weather. It dispersed for combat maneuvers to airdromes in the Tampa, Fla. area Jan. 15th, concentrated at Tampa, Fla., Jan. 17th, and performed the prescribed 20 hour maintenance inspection of equipment. It then dispersed for combat maneuvers to airdromes in the Tallahassee, Fla., area Jan. 20th; concentrated at Mobile, Ala., Jan. 23rd, where a planned 40 hour maintenance inspection could not be performed due to cold weather that forced the movement of the Wing Jan. 25th to New Orleans, where, with better hangar facilities (and moderating weather), the necessary maintenance was accomplished. From there the Wing dispersed for combat maneuvers to airdromes in the Montgomery, Ala., area Feb. 1st, from whence, time limitations required the return of the Wing to Langley Field, Feb. 3rd, omitting concentrations and maneuvers in the Atlanta area. Several demonstration side flights were made by units for outlying cities.

(1) Air temperatures from 15° to 75° were encountered. Rain and some snow were experienced only one day.

b. Sixteen independent Air Corps camps

were made; 3753 hours were flown; 3315 convoy road miles and 2878 air line miles were covered in Wing movements.

c. There was but one forced landing, that of a transport plane with engine trouble on the airdrome at De Funiak Springs, Florida. Several accidents occurred on the ground in landing and taxiing.

d. The 19th Airship Squadron, sending forward its own mobile field mooring mast by truck to Miami, flew this TC-13 airship to Miami, remained at that place while the Wing was concentrated there, returning directly to Langley Field upon the departure of the Wing for the Tampa area.

5. Communications:

A ground radio net between the Wing and Group headquarters and between the Wing and the Air Corps net thru Maxwell Field was satisfactorily maintained by using SCR-187 sets installed in airplanes with improvised power furnished while on the ground by the unsatisfactory but only available power unit (Type P E - 41).

6. Equipment:

a. Special equipment lists for the reduced strength units were prepared and used on the exercise.

b. Absence of air transportation required extensive use of motor vehicles and the duplication of certain items of camp and mess equipment.

7. Supply: Replenishments by air transport of non-perishable rations and of the equipment and supplies (including 5 engines) were effected from stations in the rear (principally Maxwell and Langley Field). Bad weather interfered but slightly with this method of supply. Occasional isolated items, not warranting flights to distant supply points, were expressed overland. One lower P-12 wing could not be transported by air and was shipped overland.

(1) Six motors and 2 wings were changed in the field.

(2) Four airplanes were shipped by freight to Air Corps Depots for overhaul.

8. Evacuation:

Evacuation of personnel was effected by air (2 officers and 6 enlisted men were evacuated for all reasons to Army stations including points as far as Langley Field).

9. Comments:

a. The principle of troop movements is the same for air as for ground troops, EXCEPT that air movements are more affected by adverse weather.

b. As was the experience in the Air Mail Operations, airplanes should be provided with, or moved to adequate hangar facilities for their proper maintenance inspections in rainy weather and when air temperatures approach or drop below freezing.

c. With proper transportation, small

strength Bombardment and Pursuit squadrons can operate indefinitely in the field from previously prepared airdromes without the assistance of service squadrons.

d. Except for lighter tent poles and pins, the present army camp and field kitchen equipment is most suitable for Air Corps field operations.

(1) Inadequate bedding caused real hardship for the men in cold weather in spite of the fact that Sibley stoves were used.

(2) Special bivouac equipment (especially unheated tents) is undesirable.

(3) The sanitary advantage of paper plates merits their consideration as a standard item.

e. For true self-sufficient Air Corps combat mobility, high speed transport planes are essential for the movement of personnel, equipment and supplies not transportable in combat planes. Transport planes must be unit equipment and actually accompany the flights of their units.

(1) A small transport (the Lockheed C-12), because of its small size and higher cruising speed, was most valuable for evacuation of personnel and the shipment of emergency items.

(2) Baggage space of 16 cu. ft. (4'x2'x2') provided in a few of the monocoque fuselages (P-12E's) was of great value for the transportation of pilots' bedding and clothing rolls, tool kits, spare parts, supplies and field equipment.

f. Self-sufficient mobility of Air Corps Combat Units without transport planes requires duplication in essential items of camp equipment and motor vehicles.

(1) When equipped with motor vehicles, daily movement of Air Corps units is restricted to that of their motor convoys. Changes of base of Air Corps units equipped only with motor vehicle transportation can, in suitable weather, be effected up to the maximum one day's flying range of the airplane by dispatching the convoy echelon ahead in sufficient time.

(2) The $\frac{1}{2}$ ton truck proved unsuitable due to its limited carrying capacity.

(3) Eight passenger reconnaissance trucks and five 6-ton fast moving convertible passenger motor busses would prove the most suitable motor transportation for limited mobility of Air Corps troops.

(a) Two such reconnaissance trucks and four such motor busses would suffice for double echelon movement of single place Pursuit squadrons not equipped with transport planes. Two each would suffice for Bombing squadrons.

g. Maximum combat power with the greatest possible mobility, concealment and security, with ability to concentrate rapidly in critical areas, can only be obtained by the preparation and manning of numerous small dispersed flying fields equipped with concealed cover for the shelter and messing of personnel and housing of air-

planes. This could reduce combat units to combat crews, airplanes and administrative overhead, all ground personnel being provided by service squadrons. This scheme of organization and operation should be reserved for war conditions. For peace time training and field exercises it is more economical and convenient to allow combat units to be self-sufficient, including the necessary ground personnel in their tables of organization.

h. If combat mobility and rapid troop movements are not to be interfered with, combat unit transport planes should not be employed along the line of communications.

(1) The line of communications should provide its own transport planes.

i. An advanced mobile supply point for all classes of supplies should accompany each independent Headquarters in the field.

j. The 22% Pursuit squadron over-strength in spare combat planes was inadequate, while the 33-1/3% Bombardment squadron spare plane overstrength was excessive.

(1) The Bombardment planes were never subject to more than cruising and formation flying speed either in the troop movements or combat maneuvers. On the other hand the Pursuit planes, besides flying the normal cruising and formation speeds, were subjected to the severe stresses of repeated air combats and attacks at all altitudes.

(2) Spare transport planes should have been available from the rear.

k. Properly designed mobile (by air) ground radio sets and power units should be provided all squadron and higher headquarters for use in the ground radio net between dispersed airdromes.

l. Mobile (by air transport) night lighting equipment is essential for night operations.

m. Gasoline and oil should be procured in less quantities than estimated to meet requirements, with options to increase the amounts on call to 50% in excess of the estimated requirements.

(1) Small quantities in 1/2 gal. sealed tins of a special quick starting airplane gasoline should be provided for cold weather (freezing) starting of engines.

(a) As much as three hours were required under freezing conditions to get all the motors of the unit started.

(2) The establishment in the several combat areas of distributing points for airplane fuel and oil, the delivery by trucks to the several airdromes in the areas and the servicing of airplanes from 50 gal. gasoline drums and from 1 gal. sealed oil cans proved most satisfactory.

(a) The same method of distribution of all classes of supplies, not excepting ammunition and bombs, could be effectively applied.

n. The development of gun camera films in the field was unsatisfactory, due to conditions of cold and varying mineral salts in the water.

o. The march and camp discipline of the command was superior.

(1) Military camp organization and practices should be adhered to by Air Corps Units.

(2) Special per diem funds should be provided for the quartering and messing of individuals and small detachments isolated from their units by the exigencies of the operations (forced landings, repairing and caring for damaged aircraft left behind, etc.).

p. Obstructions, soft and wet surfaces (only disclosed by personal reconnaissances) prevented the use of many airdromes otherwise suitable for the dispersion of units.

q. The outstanding tactical observation of the exercises was the fear of unit commanders of air attacks against their airdromes and their desire for the dispersion and concealment of their camps and airplanes on auxiliary flying fields.

r. In view of the probable infrequent employment in Army sectors of group masses of Pursuit, Bombardment and Attack aviation and the need for the employment in those sectors of balanced combat teams of Pursuit, Bombardment, and Attack and Observation aviation, careful consideration should be given to the development and training of such teams by the organization at home stations of composite groups composed of balanced forces of the four classes of combat aviation.

(1) Group commanders, as combat leaders, should be trained in the tactical employment of all classes of aviation.

(2) Combat squadrons should be developed and trained as members of balanced combat aviation teams which, in the opinion of the undersigned and except for the Air Force Reserves, should consist of composite groups composed of Pursuit, Bombardment, Attack and Observation units. * * * * *

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GOOD-BYE LIBERTY ENGINES

The Materiel Division Correspondent of the News Letter, touching on the status of Liberty engines, states that instructions have been issued to depots to list on Surplus Property Disposal all V-1650 engines, spare parts, equipment, and accessories, except those obligated for school loans. Service activities, with the exception of Kelly Field, have been instructed to dispose of this property in accordance with Air Corps Circular 65-12. Kelly Field has been authorized to retain three Liberty engines and sufficient spare parts, equipment, and accessories for the maintenance of the C-1C airplane assigned to that station.

PURSUIT INTERCEPTION OF BOMBARDMENT AIRPLANES

The Handley Page Bulletin (London, Eng.) for March, 1935, prints an interesting article on the ability of fighter "Pursuit" airplanes successfully to combat the operations of multi-engined Bombing airplanes. The article appears in English, French and Spanish, without quoting the author's name.

Two of the most interesting points brought out are: first, that the initiative lies with the Bombing airplane and, second, that unfavorable weather hampers the fighting airplane more in its effort to locate in the air its target, (the Bombing airplane) than such weather hampers the Bombing airplane in locating its target, which is usually fixed on the ground. In especially unfavorable weather, it is probable that fixed targets would always be selected.

Under the initiative which lies with the Bombers, they are able to select a time of arrival at the target most unfavorable to fighter action. In addition, they select the altitude and the route, the former of which may be altered from time to time and the latter of which may be made circuitous, in order still further to baffle efforts at interception. Due to the fact that Bomber action can be carefully predetermined, many aids can be employed in accomplishing its task, such as radio directional devices and special air navigation instruments. Due to the nature of the task confronting the fighter airplane, such aids are not applicable.

In the single-seater fighter operated by one man, it becomes necessary to place the offensive action of the fighter airplane in fixed synchronized guns, which are aimed by the pilot's action in controlling the direction of the airplane. For such a method of fire to be effective, the fighter airplane must have a considerable margin of superiority in speed and maneuverability over the target it is to attack.

Examining the conditions which prevailed in this respect in the World War, it is found, according to the article in the Bulletin, that the fighter had a margin of 50% superiority during most of the period of the World War in which combats between fighter and bombardment airplanes were common. Until recently, designers have been able to maintain the speed of the Pursuit at approximately 50% above that of Heavy Bombardment. In the last year, due to the unusually effective design of multi-engined Bombardment, taken in conjunction with ability to reduce the head resistance of the motors in comparison with their horsepower, the speed of the Bombardment airplane has rapidly overhauled that of the Pursuit airplane.

Even though it may later be possible again to restore the approximately 50% speed superiority of the Pursuit plane, this speed will then be so great as to give rise to serious doubt of a pilot's ability successfully to perform the maneuvers and firing essential to success in the tactics of the fighter as such tactics were carried out during the World War.

While not referred to in the article, the discussion presented therein suggests that a revolution of fighter design and tactics may be the answer to the successful combating in the air of Bombardment operations. In the matter of design, this may take the form of a multi-engined fighter of somewhat similar characteristics to the Bomber and of only slightly superior speed. This type of fighter would naturally involve a superiority of fire power, perhaps both in the matter of number of guns and also a greater range for the guns. With such conditions obtaining for the fighter airplane, the tactics may then be modified to give the greatest advantage to this superior fire power. It is probable that such tactics may take the form of a "stern chase" and a "running fight" such as are employed in the tactics of naval vessels, but utilizing an added dimension.

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MEXICAN FLAG PRESENTED TO KELLY FIELD

In appreciation for courtesies shown Mexican Army fliers who graduated from the Air Corps Training Center, General de Division Pablo Quinoza, Secretary of War of the Mexican Republic, presented to the Air Corps Advanced Flying School, Kelly Field, Texas, a beautiful silk Mexican flag and a carved trophy box on which the coat of arms of both nations is hand carved.

The presentation of these gifts was made to Colonel Jacob E. Fickel, Com-

mandant of the Advanced Flying School, by Lieut. Luis Noriega, who graduated from this School last October, and Lieut. Daniel Maldonado, another Mexican flier. These two fliers made a special trip from Mexico City in order to present the gifts.

The flag bears the insignia of the Mexican Air Force, and will be added to the collection which the Advanced Flying School now boasts of and which is displayed at the Aviation Club.

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During February, the Engineering Dept. of the San Antonio Air Depot overhauled 20 planes and 44 engines and repaired 20 planes and 26 engines.

The crowd of 5,000 present at Kelly Field on the occasion of the recent landing of 40 new Pursuit planes of the First Wing, G.H.Q. Air Force, testified to the air-mindedness of San Antonio citizens.

TEMPORARY PROMOTIONS IN THE AIR CORPS

Effective March 15, 1935, the assignments of the following-named officers to duty in the Philippine and Panama Canal Departments were confirmed, the Chief of the Air Corps having certified that no officers of suitable permanent rank are available for these duties:

PHILIPPINE DEPARTMENT

Captain Isaiah Davies, Intelligence and Operations Officer, 4th Composite Group, was promoted to Major, and 1st Lieut. Charles W. O'Connor, Engineering Officer, Philippine Air Depot, to Captain.

Squadron Officers

Captains Martinus Stenseth, Thomas W. Haste, and Harvey W. Drosser, commanders of the 2nd, 28th Bomb. and 66th Service Squadrons, respectively, were promoted to Major.

Flight Commanders, all 1st Lieutenants, promoted to Captain, were Hugo P. Rush, George W. Mundy, Alfred R. Maxwell, 2d Observation; William D. Old, Clinton W. Davies, Ford L. Fair, 3rd Pursuit; Charles H. Caldwell, John S. Mills, and David R. Gibbs, 28th Bombardment Squadron.

Intelligence and Operations Officers, 1st Lieut. Leon W. Johnson, 2nd Obs., and 2nd Lieut. Gerald Hoyle, 28th Bombardment Squadron, were promoted to Captain.

First Lieut. Richard D. Reeve, Supply Officer, 66th Service Sqdn., was promoted Captain.

Second Lieutenants promoted to 1st Lieutenant, were: Winslow C. Morse, Engineering Officer, 3rd Pursuit; Leslie O. Peterson, Armament Officer, 2nd Observation; Harold W. Bowman, Carl A. Brandt, Supply Officers, 3rd Pursuit and 28th Bombardment Squadrons, respectively; Hugh A. Parker and John H. Bundy, Communications Officers, 28th Bombardment and 3rd Pursuit Squadrons, respectively.

PANAMA CANAL DEPARTMENT

In the 6th Composite Group, Captain Willis R. Taylor, Intelligence and Operations Officer, was promoted to Major; and to the rank of Captain: 1st Lieuts. Ward J. Davies, Supply Officer, and Donald W. Benner, Engineer and Armament Officer.

In the 16th Pursuit Group, promotions were as follows: To Major: Captain Frank O'D. Hunter, Intelligence and Operations Officer; To Captain: 1st Lieuts. Robert S. Israel, Supply Officer, and Charles A. Ross, Engineer and Armament Officer; To 1st Lieut.: 2nd Lts. Earl W. Hockenberry, Adjutant, and Edward W. Anderson, Radio Officer.

Squadron Officers

<u>Name and Rank</u>	<u>Organization</u>	<u>Temp. Rank</u>
<u>Squadron Commanders</u>		
Capt. Homer B. Chandler	7th Obs. (RS)	Major
1st Lt. Dixon M. Allison	24th Pursuit	Major
Capt. Richard H. Ballard	25th Bomb.	Major
Capt. George H. Beverley	29th Pursuit	Major
Capt. Warner B. Gates	44th Obs.	Major
1st Lt. Orrin L. Grover	74th Pursuit	Major
1st Lt. Burton M. Hovey, Jr.	78th Pursuit	Major
Capt. Alonzo M. Drake	80th Service	Major

<u>Name and Rank</u>	<u>Organization</u>	<u>Temp. Rank</u>
<u>Intelligence and Operations Officers</u>		
1st Lt. Otto C. George	7th Obs. (RS)	Capt.
1st Lt. George H. Macnair	24th Pursuit	Capt.
1st Lt. Bernard A. Bridget	25th Bomb.	Capt.
1st Lt. Joseph H. Atkinson	29th Pursuit	Capt.
1st Lt. Guy B. Henderson	44th Obs. (RS)	Capt.
1st Lt. James W. Brown, Jr.	74th Pursuit	Capt.
1st Lt. William E. Hall	78th Pursuit	Capt.
<u>Flight Commanders</u>		
1st Lt. John F. Guillet	7th Obs. (RS)	Capt.
1st Lt. George R. Geer	7th Obs. (RS)	Capt.
1st Lt. Herbert E. Rice	24th Pursuit	Capt.
1st Lt. Mollie J. Coutlee	24th Pursuit	Capt.
1st Lt. Neil B. Harding	25th Bomb.	Capt.
1st Lt. Frank H. Robinson	25th Bomb.	Capt.
1st Lt. Thayer S. Olds	29th Pursuit	Capt.
1st Lt. Samuel R. Prentnall	29th Pursuit	Capt.
1st Lt. Allen W. Reed	44th Obs. (RS)	Capt.
1st Lt. H. W. Pennington	44th Obs. (RS)	Capt.
1st Lt. Joel E. Mallory	74th Pursuit	Capt.
1st Lt. Ronald R. Walker	74th Pursuit	Capt.
1st Lt. F. A. Armstrong, Jr.	78th Pursuit	Capt.
1st Lt. David D. Graves	78th Pursuit	Capt.
<u>Supply Officers</u>		
2nd Lt. Ralph P. Swofford, Jr.	24th Pursuit	1st Lt.
2nd Lt. Richard J. O'Keefe	25th Bomb.	1st Lt.
2nd Lt. Frank P. Hunter, Jr.	44th Obs. (RS)	1st Lt.
2nd Lt. Nelson P. Jackson	74th Pursuit	1st Lt.
2nd Lt. Hoyt D. Williams	78th Pursuit	1st Lt.
1st Lt. Leo W. DeRosier	80th Service	Capt.
<u>Communications Officers</u>		
2nd Lt. Dwight Divine, 2d	24th Pursuit	1st Lt.
2nd Lt. P. Ernest Gable	25th Bomb.	1st Lt.
2nd Lt. Jacob E. Smart	44th Obs. (RS)	1st Lt.
2nd Lt. Millard C. Young	74th Pursuit	1st Lt.
<u>Engineering Officers</u>		
2nd Lt. Winton S. Graham	25th Bomb.	1st Lt.
2nd Lt. Jarred V. Crabb	29th Pursuit	1st Lt.
1st Lt. Joseph A. Bulger	80th Service	Capt.
<u>Armament Officers</u>		
2nd Lt. George F. Hartman	44th Obs. (RS)	1st Lt.
2nd Lt. Lawrence B. Kelley	25th Bomb.	1st Lt.
<u>Transport Officer</u>		
2nd Lt. Thomas B. Hall	80th Service	1st Lt.

Effective March 16, 1935, the following officers on duty at Air Corps schools were assigned to duties carrying therewith advanced rank:

At the Air Corps Training Center, Randolph Field, Texas, Captain Arthur E. Easterbrook, Executive Officer, was advanced to Lieut.-Colonel; Captains Charles H. Dowman, Director of Ground Training, and John K. Cannon, Director of Flying Training, to Major.

Officers on duty with the Air Corps Primary Flying School advanced in rank were: To Lieut.-Colonel: Major Lloyd N. Keesling, Assistant Commandant; To Major: Captains Walter Miller, Executive Officer; Edward D. Jones, Engineering Officer; Leonidas L. Koontz, Supply Officer; Aubrey C. Strickland, Director of Flying Training; Clyde V. Finter, Director of Ground Training; Bob E. Nowland, Primary Stage Commander,

and Paul L. Williams, Basic Stage Commander.

Officers on duty with the Air Corps Advanced Flying School, Kelly Field, Texas, advanced in rank were: To Lieut.-Colonel: Major Harrison H.C. Richards, Assistant Commandant; To Major: Captains Lewis A. Dayton, Executive Officer; Clifford C. Nutt, Engineering Officer; Thomas L. Gilbert, Supply Officer; Robert D. Knapp, Director of Flight Training; Perry Wainer, Director of Ground Training - To Captain: 1st Lieuts. Wilfrid H. Hardy, Adjutant; Glen C. Jamison, Operations Officer; Otto P. Weyland, Secretary; Wallace E. Whitson, Chief, Bombardment Section.

Captain Myron R. Wood, Commanding the 67th Service Squadron, Randolph Field, advanced to Major.

Squadron Officers, Kelly Field, Texas:

<u>Name and Rank</u>	<u>Squadron</u>	<u>Temp. Rank</u>
<u>Squadron Commanders</u>		
Capt. Ulysses G. Jones	39th Obs.	Major
Capt. James A. Healy	40th Attack	Major
Capt. John A. Laird, Jr.	41st Obs.	Major
Capt. Thomas S. Voss	42nd Bomb.	Major
Capt. Louis N. Eller	43d Pursuit	Major
Capt. Roderick N. Ott	68th Service	Maj.
Capt. Louie C. Mallory	81st Service	Major
<u>Intelligence and Operations Officers</u>		
1st Lt. James B. Burwell	39th Obs.	Capt.
1st Lt. George L. Murray	41st Obs.	Capt.
1st Lt. Edgar T. Selzer	42nd Bomb.	Capt.
1st Lt. Samuel E. Anderson	43rd Pursuit	Capt.
<u>Engineering Officers</u>		
2d Lt. Anthony Q. Mustoe	39th Obs.	1 Lt.
1st Lt. Adolphus R. McConnell	68th Serv.	Capt.
1st Lt. Edward H. Underhill	81st Service	Capt.
<u>Flight Commanders</u>		
1st Lt. George A. Whatley	39th Obs. "A"	Capt.
1st Lt. Clifford P. Bradley	39th " "B"	Capt.
1st Lt. Augustine F. Shea	40th Attack	Capt.
1st Lt. James M. Fitzmaurice	40th Attack	Capt.
1st Lt. Carlisle I. Ferris	41st Obs. "A"	Capt.
1st Lt. Joseph Smith	42d Bomb. "A"	Capt.
1st Lt. George H. Steel	42d Bomb. "B"	Capt.
1st Lt. Clyde K. Rich	43d Pursuit	Capt.
1st Lt. Howard E. Engler	43d Pursuit	Capt.
<u>Armament Officers</u>		
2d Lt. Roy D. Butler	42d Bomb.	1 Lt.
2d Lt. Kenneth A. Rogers	43d Pursuit	1 Lt.
<u>Supply Officers</u>		
1st Lt. Ralph C. Rhudy	68th Service	Capt.
1st Lt. Roger J. Browne	81st Service	Capt.

AIR CORPS TECHNICAL SCHOOL, CHANUTE FIELD, ILL.

Captain Earle G. Harper, Assistant Commandant, was advanced to Lieut.-Colonel. Other officers on duty at this School advanced in rank are as follows: To Major - Captains Edwin F. Carey, Executive Officer; Samuel M. Connell, Engineering Officer; William Turnbull, Supply Officer; William A. Hayward, Director, Mechanics; Walter T. Meyer, Director, Communications; - To Captain - 1st Lieuts. Robert W. Harper, Adjutant; Herbert W. Anderson, Operations Officer, and William O. Eareckson,

Secretary.

Captains Walter K. Burgess, Commander of the 48th Pursuit Squadron, and James B. Carroll, Commander of the 98th Service Squadron, both at Chanute Field, Ill., were advanced to Major.

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OFFICERS DETAILED TO AIR CORPS TECHNICAL SCHOOL

Special Orders of the War Department recently issued direct various Air Corps officers to pursue courses of instruction at the Air Corps Technical School at Chanute Field, Rantoul, Ill., and to report to the Commandant of that School not later than September 1, 1935, for duty as students.

The officers detailed to pursue the 1935-1936 airplane maintenance engineering-armament course are enumerated below, as follows:

<u>Name and Rank</u>	<u>Present Station</u>
1st Lt. Herbert L. Grills	Randolph Field,
1st Lt. William T. Hefley	Brooks Field
1st Lt. Carl B. McDaniel	Randolph Field
1st Lt. Eugene H. Rice	Ft. Leavenworth
2nd Lt. Carl R. Feldmann	Randolph Field
2nd Lt. Oliver S. Picher	Langley Field
2nd Lt. Clark N. Piper	Selfridge Field
2nd Lt. George F. Schlatter	Selfridge Field
2nd Lt. Daniel F. Callahan, Jr.	Chanute Field
2nd Lt. Wiley D. Ganey	Chanute Field
2nd Lt. Hilbert F. Muentzer	Chanute Field
1st Lt. Joseph F. Carroll, Jr.	Hawaii

1935-1936 Communications Course

1st Lt. George F. Kinzie	Chanute Field
2nd Lt. Stuart P. Wright	Chanute Field
1st Lt. William E. Karnes	Fort Sill, Okla.
1st Lt. Frederick A. Pillet	Randolph Field
1st Lt. Edwin L. Tucker	Randolph Field
1st Lt. Louie P. Turner	Langley Field
2nd Lt. Thomas C. Darcy	Langley Field
2nd Lt. Joe W. Kelly	Selfridge Field
2nd Lt. Minthorne W. Reed	Selfridge Field
2nd Lt. Fred S. Srocks	Kelly Field
1st Lt. Richard H. Wise	Hawaii

1935-1936 Photographic Course

2nd Lieut. William M. Prince	Hawaii
1st Lt. William O. Eareckson	Chanute Field
2nd Lt. Earle T. MacArthur, Jr.	Chanute Field

Note: The officers detailed to pursue the Communications Course are directed to report to the Commandant of the Technical School not later than October 1, 1935, while those assigned to the Photographic Course will report on or about September 15, 1935.

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First Lieuts. Narcisse L. Cote and August W. Kissner, Air Corps, on duty in the Philippine Department, were advanced to the temporary rank of Captain. The first-named officer is on duty as Supply Officer of the 4th Composite Group, and the last-named as Engineer Officer of the 66th Service Squadron. These promotions are effective March 22, 1935.

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Air Corps officers receiving permanent promotions, with rank as of March 1, 1935, were Capt. Calvin E. Giffin to Major, 2nd Lts. George E. Price, Richard C. Lindsay to 1st Lt. Second Lts. John G. Fowler and John L. Nedwed promoted to 1st Lieut. with rank as of March 2, 1935.

THE AIR DANGER

The French publication FIGARO for February 19, 1935, publishes an interview of General Duchene, Inspector General of A.A. Defense. After commenting on aerial danger, General Duchene considers protective measures to be enforced.

"The London air pact can only provide energetic and immediate retaliation for a sudden air attack against civilian populations, whose effect would be greatly reduced by appropriate passive defense measures. France, as well as England, is under the constant menace of an attack by air.

The largest possible number of individuals should be evacuated from the dangerous zone in case of bombardment by air. Only persons necessary for national defense or for the economic life of the nation should be permitted to stay in threatened cities; no exception should be permitted in the limited number of cities to which this measure is applied. Approximately 60% of the population of these towns can be evacuated. This dispersion is a humanitarian measure - keeping a large part of the population outside of the danger zone - and will facilitate the distribution of masks and the use of shelters prepared beforehand for those who have to stay.

The enemy's effort will be brought to bear on towns where a moral result may be anticipated, but more particularly so on strategical points, to curtail the duration of the war by aiming at vital resources: depots, workshops, public administrations, financial establishments, telephone centers, electric plants, railroads, etc. Once the population has been removed, efforts will be devoted to the protection of workmen, administrative personnel, etc.

The objection of the population at parting from those left behind in the menaced zone has been expected, but cannot change the adopted policy. The same thing was done during the last war, when civil populations had to leave their homes in the zone where fighting was going on, their transportation to the rear being provided for. The population will not have to go very far: to small neighboring towns, villages and farms. The population will thus be fairly safe from bombs without being completely uprooted from its immediate interests.

The preparation for dispersion and provision for transportation will be no harder to organize than the mobilization of the army, as this is truly a civilian mobilization which will be made compulsory by law. Accommodations will be provided by requisition. The expense will be the responsibility of the Government, the same as for other war expenses; expense does not count when it is a question of the safety of

the population.

Transportation will be provided for, to avoid panic and traffic jams, and the population of Paris will be evacuated within a few days.

This enforced dispersion will be made easier by the bombardment itself: during 1914-1918, when air warfare was far from being as dangerous as it would now be, one million people voluntarily left Paris; a much larger number in face of a graver peril would certainly be willing to leave.

Efficient action on the part of the authorities will be absolutely necessary, otherwise it would degenerate in a mad flight, in riots, etc., if not properly executed. No improvisation is possible in such a matter, and advance measures must be taken."

The newspaper adds that a conspiracy of silence against the air danger would lead the nation to a disaster. Parliament will be responsible if the law on passive defense is delayed further. The preparation for protective measures would mean that 80% of the human lives endangered in certain cities could be saved, but any further delay in this organization would be a crime against the country.

"LE TEMPS" for the same day prints a long article on "Aerial Defense," referring to the session of the Chamber of Deputies, February 7th, when discussion was begun of "one of the main problems of national defense in case of war which promises to be, above all, an air war."

A report submitted by M. Guerin stresses the danger of aviation in a war to come, as it would attack objectives of all kinds (military, economic and moral) and would use any means: explosive bombs, fire bombs, and gas. Warfare which used to be limited to the zone of the armies will now extend to the entire territory. Civil populations are now familiar with this danger and protection and defensive measures must be adopted.

The High Committee for Passive Defense of the Ministry of the Interior ruled that the expense of passive defense should be borne by those benefitting by it: administrations, public services, departments, towns, private associations or individuals, the Government contributing certain sums only in exceptional cases, in the general interest of the nation or in consideration of the particular situation of those concerned.

"It is not understood why private individuals should not receive from the State the same protection against air danger as they do against land and naval dangers, in exchange for heavy taxation.

But this would swell a budget already too heavy. Municipalities' budgets, on which most of the burden would rest, are already below present requirements, and it would be useless to expect important appropriations on that side.

Other measures, less costly, are easier to enforce, but they must be coherent and efficient."

In a proposed bill for the passive defense of the territory, Article I states the compulsory character of the law, and Article II charges the Ministry of the Interior with the direction, coordination and control of its organization. The article states that "this is making a liaison agent between several departments out of a purely civil ministry. The Presidency of the Council would seem more fitted for the mission, as it is placed above the other ministries, as a sort of liaison agent, and has under it the Secretariat of National Defense. The latter is a permanent organization which could be given facilities to organize this protection, in collaboration with a large number of civil ministries.

Representatives of the services concerned could sit on a permanent Executive Committee (war, air, navy, public works, interior, finance, public health, etc.). Regulations drafted by this committee would be transmitted to a secretary general who would inform civil and military authorities, and de-

partmental and local committees on passive defense, under the supervision of the Inspector General for A.A. Defense.

It would be the duty of that Committee to decide on pertinent measures (which, of course, are mentioned in the proposed bill on passive defense, but which, as many others, may never be enforced), and to control their execution as concerns the installations in cities, industrial establishments, the evacuation of menaced communities, the dispersion of the population, the protection of existing buildings or buildings to be constructed against fire, gas, and explosions caused by air bombs, etc.

It is impossible to rebuild cities like Paris or Lyons, taking into account the danger from the air. Protection measures imposed on new settlements will only cover a fraction of the danger. The immediate effort for passive defense must be brought to bear on cheap but efficient administrative measures, stressing above all decentralization, in an emergency, of towns essential to national defense, like the capital or certain large industrial centers. It is through a minute preparation of dispersion measures in time of peace that civil populations may be protected and also through international air pacts, or the menace of merciless retaliation."

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SUCCESSFUL FLIGHT OF THE 17TH ATTACK GROUP

The 17th Attack Group, commanded by Captain Ira C. Eaker, Air Corps, recently returned to its home station, March Field, Calif., following an extended flight to Maxwell Field, Ala. Formerly a Pursuit organization, the 17th was redesignated as an Attack outfit when the GHQ Air Force was established.

The 17th is utilizing the Pursuit airplane, type P-26A, but it has been stated that ultimately it will be equipped with the new Northrup Attack plane when a sufficient quantity of them will have been completed by the manufacturer.

Absent from its home station for eight days, the Group made overnight stops at Dallas, Maxwell Field, and Tucson, Ariz. and remained two nights both at Barksdale and Kelly Fields.

The flight proved very instructive in several particulars. The first day's trip was effected in flying time ranging from 6¼ to 6½ hours, or an elapsed time of approximately 8½ hours per squadron. This showed an average speed for the P-26A planes in excess of 230 miles per hour. The servicing of planes required from 45 minutes to an hour per squadron at each stop, which figure should be bettered through more adequate servicing facilities. The airdromes them-

selves were found to be entirely suitable for the mass movement of fast planes.

Experience in flying in various kinds of weather was also gained. The first day found the Group negotiating a sand storm from Lordsburg, N.M. to Fort Worth, Texas, this storm having grounded many aircraft along the route. A Norther blew in at Dallas and with it a slight snowfall and rain. Cold weather flying was encountered, and heavy rains and low clouds, reducing the visibility practically to zero, were penetrated between Dallas and Montgomery. Bad weather delayed the return at San Antonio and the Group was forced to remain overnight at Tucson.

The results of the flight are considered highly successful. The trip was completed in a minimum of time. No difficulties were experienced by the personnel, and the aircraft functioned excellently. No delay greater than 15 minutes was met for any reason other than weather.

Engineering maintenance, other than the usual checks, was limited to two flat tires and the changing of a few sets of plugs. Radio communication was excellent except radio transmission to Department of Commerce stations. Two squadrons failed to make contact, but the third, through the use of a special improvised loading

coil in the antenna system was able to work stations up to about 100 miles.

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LANGLEY FIELD UNDER GHQ AIR FORCE SET UP

Langley Field is functioning under the GHQ set up. Transfers and shifts, organizational and in living quarters, have been accomplished, and the new machine is functioning smoothly and efficiently.

Brigadier-General Henry C. Pratt, in command of the 2nd Wing, has also assumed the duties of Post Commander. His Wing Staff includes Lt.-Col. Willis H. Hale, Executive and Operations Officer; Major Walter Reid, Supply Officer; Captain Malcolm Stewart, Communications Officer; 1st Lieut. D.B. Schannep, Assistant Operations Officer, and 1st Lt. Hoyt Prindle, Adjutant. His Post Staff includes Colonel Charles H. Danforth, Station Complement Commander; Captain A.M. Guidera, Executive Officer; Capt. Paul Mathis, Adjutant; Captain James T. Hutchison, Engineering Officer; Captain H.A. McGinnis, Supply Officer; 1st Lt. R.E. Nugent, Operations Officer; 1st Lt. U.G. Ent, Meteorological Officer; 1st Lt. Edward A. Hillery, Signal Officer, and Captain H.H. Reily, Air Corps Inspector.

Major C.B. Oldfield, who recently arrived at Langley Field, was assigned as Commanding Officer of the 2nd Bombardment Group.

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INSTRUMENT FLYING IN HAWAII

Of late, the 50th Observation Squadron has been experimenting with formations in which the leader flies under the hood. The need for leaders who can fly by instruments alone at the head of formations has been demonstrated in the Hawaiian Islands several times, when formations have been caught in bad weather. The uses to which this ability can be put in time of war are evident. Thus far, formations of six ships have been flown with no great difficulty, but only 3-ship formations have been taken into heavy clouds. Six and nine ships will follow shortly.

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WHEELER FIELD FIGURES PROMINENTLY IN TRANS-PACIFIC FLIGHT PROJECTS

Looking back to the several flight projects in recent months with the Hawaiian Islands as the objective, the News Letter Correspondent from Wheeler Field, T.H., states:

"Situated as we are - well inland, with an airdrome of exceptional dimensions, we seem to have become an important spot in the eyes of Trans-Pacific

flight projects. On October 29, 1934, Sir Charles Kingsforth-Smith, pilot, with Captain P.G. Taylor, navigator, arrived in the 'Lady Southern Cross' after an exceptionally well conducted flight from Australia. Following a few days repairing and checking of equipment, the flight was successfully completed to Los Angeles, via Oakland.

Our next excitement was the painstaking search of early December for Captain Charles Ulm, and his crew of co-pilot and navigator, who ran out of fuel and were lost at sea in an endeavor to reach Oahu and Wheeler Field from Oakland, Calif. Everything that was humanly possible to do was done to locate the sinking ship, and only after a period of ten days was the search abandoned.

Our next event was the flight of Miss Amelia Earhart. Shipping her Lockheed Vega from California, via commercial liner, it was set up, auxiliary tanks installed, and a successful full load test accomplished at Wheeler Field. So, without warning, late on the afternoon of Friday, January 11, 1935, Miss Earhart waved good-bye to the ground crew and took off to the east. Next morning we received word of her successful landing at Oakland. A very strenuous flight well executed.

Returning again to the 'Lady Southern Cross' and Captain Taylor, navigator, the pilots of Wheeler Field displayed no little interest in his method of navigation. The Captain gladly obliged, and during his few idle moments gave us some very instructive talks on the long night flight and his managing to keep his ship on the course with weather conditions as a whole not entirely satisfactory."

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WINTER FLYING CLOTHES USED IN HAWAII

The 18th Pursuit Group at Wheeler Field, T.H., has been conducting an interesting series of tactical problems of late with reference to Pursuit versus Attack missions. The Correspondent states that while the flying equipment is not up-to-date and insufficient in number properly to train the individual pilots, it is felt nevertheless that much was gained in the knowledge of this phase of attack and defense.

Pursuit units equipped with liquid oxygen have stepped up to a high altitude, and winter flying clothing has become a familiar sight in this semi-tropical area.

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The 96th Bombardment Squadron, Langley Field, Va., recently completed a Bombardment Defense problem and test, using .30 caliber guns on towed targets directly above a formation. Approximately 12,000 rounds of ammunition were used.

INDUSTRIAL WAR PLANS ACTIVITIES
By the Materiel Division Correspondent

Many Air Corps personnel are unfamiliar with the activities of the Industrial War Plans Section of the Materiel Division, Wright Field, Ohio. This Section is charged with making plans for the assurance of an adequate supply of Air Corps Materiel in time of emergency. This work is carried on under the direct supervision of the Office, Assistant Secretary of War, through the Chief of the Air Corps, and is now in the thirteenth year of its existence. This office has under its jurisdiction six Air Corps Procurement Districts, located at New York City; Buffalo, N.Y.; Cleveland (now at Wright Field), Ohio; Detroit, Mich.; Chicago, Ill., and San Francisco, Calif. The officers in charge of these districts are known as Procurement Planning Representatives.

Procurement Plans

Plans for the procurement of basic items, such as airplanes, engines, their component parts and accessories, aerial cameras, special trucks and winches, lighter-than-air equipment, etc., have been made for practically all standard types now in existence. These plans contain detailed information regarding the item under discussion, the number required, the sources selected as most suitable to manufacture the article in the quantities required, a statement from each of the selected sources as to the rate of production possible and the percentage of the plant capacity that will be utilized in attaining this production, the estimated unit cost and the cumulative cost for the entire program covering periods of twelve and twenty-four months' requirements, transportation problems involved, and a discussion of any difficulties that might be encountered in the emergency production of the article. These plans are revised every three years, or more often as necessary. When a new type is adopted, it is usually necessary to write an entirely new plan, as the manufacturing phases involved are, in most cases, at variance with those of the former type. The statement from the producer as to his ability to manufacture the item is supported by a factory plan, which is prepared by the Procurement Planning Representative or his civilian assistant, with the aid of the producer, or by the producer himself. One Company has employed an engineer for the sole purpose of preparing factory plans of its plants and subsidiaries.

Contributory Items

With the plans for the procurement of the basic items progressing satisfactorily, attention is now being given to plans for contributory items and materials which it is assumed might be difficult to procure in the time and quantity

required. Many raw materials enter into this class, as well as aircraft hardware, cable and tie rods, valves, springs, crankshafts, machine tools, etc. Plans for permanent mold pistons, tie rods, cordage, engine valves, and valve springs have already been submitted for the approval of the Office, Assistant Secretary of War.

Procurement Plans in Emergency

An activity of the Industrial War Plans Section, equal in importance to the preparation of procurement plans discussed in the foregoing, is the selection and training of Reserve Officers necessary to the proper functioning of the emergency procurement organization.

Organization charts have been made for the Procurement Section, Wright Field, and each of the six Air Corps Procurement Districts, as well as provision for a liaison office in Birmingham, Ala. A study has been prepared outlining the duties of each of the positions shown on these charts, the rank of the officer to fill the position, and the job specifications which the officer must meet before he can be assigned to the position.

Using these data as a basis, applications for appointment or transfer are carefully scrutinized, and, although the applicant may be of high standing in his profession, the appointment or transfer is not recommended unless he fits a certain definite position in the organization. It might here be mentioned that appointments in the Specialist Section, the source of appointment for officers for procurement duty, have been suspended by the War Department for some time past. It is not known when the suspension will be removed, but it is hoped that it will be soon, as the Air Corps now has less than the 60% allotment of officers authorized for peace time by the War Department.

The emergency procurement organization calls for a total of 452 Reserve Officers, of which 271 (60%) are to be selected and trained during peace time. Until May, 1934, the organization was considerably over strength and it was necessary to eliminate such personnel as were making no attempt to secure training or fit themselves for their emergency assignments. Practically all the Air Corps Reserve Officers who held a pilot's rating were transferred to Corps Area Assignment to bring the number within the allotment for the peace time organization. Such officers as have not qualified for active re-appointment, by taking the prescribed active duty training or correspondence courses, are reappointed with restriction upon completion of their five-year terms and are carried in a separate classification, unassigned, in the Office Chief of the Air Corps.

There are at present 242 Reserve officers assigned to this Section who receive training to fit them for the duties they would be called upon to perform in time of emergency. Those officers not in Government service, as

civilian employees, are entitled to two tours of active duty during their five-year period of appointment in the Reserve.

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AIR SURVEY OF GUATEMALAN - HONDURAN - EL SALVADOR BOUNDARY LINE

Captain Willis R. Taylor, Air Corps, of France Field, Panama Canal Zone, has just completed an aerial survey of the Guatemalan-Honduran-El Salvador boundary line which again demonstrates the value and importance of aerial surveys over terrain which is difficult, if not impossible, to reach by surface transportation. In his work Captain Taylor was assisted by Technical Sergeant George W. Edwards, of the 12th Photo Section, France Field.

The following are interesting extracts of Captain Taylor's report to Colonel William C. McChord, Commanding Officer, 19th Composite Wing:

"The undersigned left France Field, C.Z., January 19, 1935, and was away from France Field twenty-nine and one-half days. Approximately 2550 square miles of territory was photographed at a cost of one dollar and fifty-two cents per square mile. The maps extant of the countries involved were all very poor and in many cases not correct. Three days were spent in checking the existing maps and the territory to be mapped, and a decision was finally made to arbitrarily establish a visual base line between an extinct volcano on one end, known as Chingo, and a fair size lake on the other end known as Guija, this on the Guatemalan-El Salvador boundary. Parallel strips were then flown to this line with the help of the compass and previous experience. Nine 65-mile strips were flown on this area and fortunately when the check was made only a few photographs had to be re-flown

to cover misses. The "B" and "C" areas cover territory on the Guatemalan-Honduran line and a similar plan was used by establishing a visual base line between two mountain peaks, known as Monte Cristo and Caya Guanca. Approximate variation in elevation on all the areas was about 6000 feet, and in some cases almost 6000 feet variation in single photographs.

At the beginning of the project control markers which show in the photographs were laid out in various points in the mountains. These were made out of muslin cloth. About two days after these were laid out the Indians had stolen all the cloth. On one occasion the marker was put on Chingo Mountain and I photographed it from 13,000 feet. After photographing some other markers I came back at a low altitude over Chingo Mountain and saw the Indians taking up the marker. Some of the engineers told me toward the latter part of the job that they had seen a number of the Indians with new shirts that had the appearance of the material making up the markers. I have had some 12 years experience on photographic mapping and I believe that was the most difficult job I have had to do. This was due to existing maps which were more confusing than helpful. The country itself was also some of the wildest I have ever flown over from the viewpoint of getting anywhere on a forced landing."

Not only was Capt. Taylor extremely busy on his flying and laboratory work, but it was necessary for him to make official calls on dignitaries of five different countries he visited, El Salvador, Guatemala, Honduras, Nicaragua, Costa Rica.

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PREPARATIONS FOR STRATOSPHERE FLIGHT

The Scott Field Air Depot, under the direction of the Materiel Division, Wright Field, has been busily engaged in the reconditioning of 1900 helium cylinders and valves for use in the proposed stratosphere flight project being sponsored by the U.S. Army Air Corps and the National Geographic Society. This flight is scheduled for early summer. The above cylinders will probably be forwarded to the U.S. Helium Production Plant, Soncy, Texas, for filling in order to obtain dry gas of maximum purity.

REMOVAL OF AIRSHIP HANGARS

A project of considerable interest to Lighter-than-Air activities is the recent removal of two airship hangars from Ross Field, Arcadia, Calif., and their erection - one at Fort Sill, Okla., and the other at Fort Bragg, N.C. These hangars will be utilized by the First and Second Balloon Squadrons, respectively. This project is being accomplished with P.W.A. funds and will provide suitable Lighter-than-Air storage facilities at the two stations above named when the erection of the hangars is completed.

INCIDENTS IN THE COLD WEATHER TEST FLIGHT

When the Provisional Winter Test Group was forced to land at Sheboygan County Airport, Mich., on February 2nd, due to heavy fog and storms over the Straits of Mackinac, it proved to be a very fortunate occurrence for one Mr. Cocks, a fisherman of that section, who had been marooned on Big Beaver Island, which lies approximately 12 miles off shore in Lake Michigan, west of the Straits of Mackinac.

A call was received from the State Department, State of Michigan, requesting that an airplane be dispatched to rescue this man. Lieut. Ott, flying an O-43 airplane, departed from the airport at 2:20 p.m. and, after locating Big Beaver Island and effecting the rescue, returned to the airport at 3:45 p.m.

The Provisional Winter Test Group had arrived at Duluth, Minn., February 9th. On the following day, at about 12:10 p.m., Captain Calvin E. Giffin, Operations Officer for the flight, received a telephone call at his hotel from the Commanding General, 7th Corps Area, requesting that an airplane be dispatched to Ely, Minn., to convey an oxygen tent and two tanks of oxygen to that point. This oxygen was absolutely necessary in order to save the life of a CCC worker who was dangerously low due to double pneumonia. Captain Giffin and Lieut. Walsh proceeded to the harbor where the airplanes were parked on the ice and ordered that an Observation airplane and a Bomber be warmed up. The Observation crew managed to get their airplane started almost immediately so that it was not

necessary to start the Bomber, but it was started and stood by until the O-43 took off. The two oxygen tanks, weighing approximately 125 pounds each, and the oxygen tent which weighed some forty pounds, were delivered to the airplane from the hospital and, after stowing the equipment, Captain Giffin departed at 1:25 p.m. During the trip to Ely, Capt. Giffin was forced to fly at less than 100 feet in order even to see the railroad which he was following due to the exceptionally poor visibility and snow squalls. At one point on the trip out, Captain Giffin passed through a canyon, and on the return trip passed through the same canyon but during a period of somewhat better visibility. He discovered that he had no more than five or six feet to spare on either side.

The oxygen equipment arrived at Ely in time to save the life of this CCC lad, and later in the evening, when the oxygen took effect and it was definitely known that the lad was past the crisis, Lieut.-Colonel Royce received the following telegram from the Commanding General, Seventh Corps Area:

"Re Giffin Mercy Flight to Ely
Commanding Officer desires to express sincere appreciation signed Erikson."

No trains were available, nor could any bus or automobile transportation, even if available, have reached the Hospital at Ely, Minnesota, in time to have been of any assistance in this emergency.

A chronology of errands of mercy performed by Army airmen would prove very interesting reading.

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55TH PURSUIT COMPLETES GUNNERY PRACTICE

The 55th Pursuit Squadron, Barksdale Field, La., recently returned from Chapman Field, Miami, Fla., and reported the situation well in hand. From available authority it seems that tow target scores averaged about 60 or 70 on each phase. High score during the session was made by 2nd Lieut. J.W. Hinton, Air Reserve, with a mark of 114½. High score for record was made by 2nd Lieut. William Eades, Air Reserve, with a mark of 102. The new high speed tow targets were used in the latter part of the firing, but scores were not quite as high on these targets as on the old. However, they are more accommodating to the speed of the P-26A, and that is a help to the towing pilot.

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Plans for the reorganization of Hamilton Field units, which include the formation of a Station Complement and the 69th Service Squadron, are complete.

SPLENDID SPIRIT AT KELLY FIELD

Kelly Field is a good place to be according to Colonel Jacob E. Fickel, Air Corps, who assumed command of the post on March 1st. To quote from Colonel Fickel: "I find a splendid spirit on the part of both officers and men and that is what counts. Colonel Clagett left things running perfectly, and he is to be congratulated on the condition of Kelly Field in all respects."

The new Commandant has been very busy, what with all the changes in squadron personnel, stormy weather, and becoming acquainted with his subordinates.

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Effective March 1st, the various organizations at Kelly Field were re-designated, as follows:

The Hqrs. A.C.A.F.S. into A.C.A.F.S. Detachment. The five School Squadrons, 39th, 40th, 41st, 42nd and 43rd, became the 39th and 41st Observation, 40th Attack, 42nd Bombardment and 43rd Pursuit.

V-6752, A.C.

Engineering News

Overcoming Destructive Torsional Vibration. ✓

Within the last year, the question of destructive torsional vibrations set up by certain propeller-crankshaft combinations in radial, air-cooled engines has gained marked prominence in the activities of the Engineering Section. The diagnosis and solution of this problem is being speeded up considerably by the aid of special instruments developed at the Division for recording torsional vibrations. These torsional vibrations appear to a destructive extent only at certain so-called critical engine speeds and at the present time instructions to the service have specified that operating personnel avoid these critical speeds. It is, of course, realized that this procedure imposes a very definite and undesirable limitation on the usefulness of airplanes in which these engines are installed. Several changes in engines, designed to overcome this condition, are being investigated at the Division. One is a simple vibration dampening mechanism which it appears will reduce the amplitude of the torsional vibration to a value which is within safe limits. The other arrangements under consideration will change the critical speed to one which is outside the usual operating speeds of the engine. It is believed that a satisfactory solution of this problem will soon be completed. Unfortunately, however, until tests can be completed and the proper modifications incorporated in the affected engines, the present operating instructions will have to be observed in the interests of safety.

100 Octane Fuel Scores in Race. ✓

The speed obtained in the recent Mitchel Trophy Race in which the winning P-26A airplane averaged 216.8 miles per hour around a 30-mile closed course at low altitude has probably puzzled Air Corps personnel. As this speed is in excess of the original performance test figure of 211 m.p.h. for straightaway high speed at sea level, it might appear that the engines had been abused by improper handling during the race. Such was not the case, however. The high power obtained was made possible by the use of 100 octane fuel, a new gasoline which permits engine operation at much higher output. The im-

proved anti-knock characteristics of the fuel permit increases in power output as high as 30% in some cases, without exceeding the allowable cylinder head temperatures. In addition, this improvement is obtained with a reduction in the lead content and consequent reduction in engine corrosion. The specification for this fuel reduces by half the permissible tetraethyl lead content formerly allowed.

A quantity of this fuel is being obtained for service test in tactical organizations, and it is hoped that regular procurement for service use can be initiated within six months.

EQUIPMENT ACTIVITIES

Shutter Control for T-3A (5-lens) Camera

Satisfactory experimental tests have been completed on an electrical shutter control assembly for the Type T-3A Camera. The greatest difficulty that has been experienced in the past with the T-3A camera has been the failure of the shutters when the camera was operated in sub-zero temperatures. During the past year, the manufacturer of the Type T-3A camera has undertaken the development work to overcome this shutter failure, and, after several experimental models, an electrical surge has been perfected, which stores up electrical energy prior to furnishing it to each shutter which has been redesigned to incorporate an electromagnet that operates the shutters simultaneously. Tests have been conducted at the Materiel Division and no shutter failures have occurred on any of three missions that were flown at altitudes above 23,000 feet, where the temperature varied from -30° to -40° C.

As soon as funds become available, this shutter control apparatus will be procured and service tests conducted at various Air Corps activities to determine its suitability for use on the 5-lens (T-3A) camera. ✓

De-Icers.

Two representatives of the Materiel Division recently visited the B.F. Goodrich Rubber Company, Akron, Ohio, for the purpose of investigating latest developments in de-icer equipment. Tests were witnessed of a section of wing with electrically heated leading edge, mounted in the throat of their wind tunnel in which

moist air is circulated. The wind tunnel is housed in a cold room where a temperature of -10° F. is maintained and an air velocity of 80 m.p.h. A very interesting demonstration was given of the amount of ice that will form on the leading edge of the wing and the amount of electric energy required per sq. ft. of leading edge cover to prevent ice formation.

The results obtained from these tests indicated that the use of heat obtained from the conversion of electrical energy for de-icing purposes is impractical.

Combination Direct Cranking and Inertia Starter.

An experimental combination direct cranking and inertia starter was submitted to the Materiel Division by the Eclipse Aviation Corporation, East Orange, N.J., for test. The starter is designed to combine the advantages of both direct and inertia cranking, by simultaneously energizing the inertia flywheel as it runs free, and cranking the engine slowly (30 r.p.m.). The inertia in the flywheel can then be used to turn the engine over from that point, making a total r.p.m. of approximately 140.

Gasoline Engine Starter.

An experimental starter, manufactured by the Eclipse Aviation Corporation, East Orange, N.J., incorporating the use of a single cylinder gasoline engine to drive the reduction gears, is being tested at the Materiel Division, with a view to cranking the engine at a steady cranking speed of approximately 60 r.p.m.

ARMAMENT ACTIVITIES

Firing Tests with Adapter Assembly.

Development of an adapter assembly, intended for use in mounting the caliber .50 Browning machine gun flexibly, has advanced to the point where actual firing tests have been conducted with an experimental unit. These tests were attended with highly satisfactory results. The adapter is equipped with recoil and counter recoil springs which allow approximately 3/8-inch rearward movement of the gun in the absorption of recoil load. This adapter is intended for use in the floor position of bombardment type airplanes to furnish protection through a rear cone of approximately 45 degrees.

Gun Carriage Development.

Development work is being continued in an effort to obtain a gun carriage which can be used satisfactorily in flexibly mounting two caliber .30 Browning machine guns. Since the establishment of this requirement, which applies to rear cockpits in observation,

attack and bombardment airplanes, extreme difficulties have been experienced in obtaining an assembly which could be maneuvered under conditions of high slipstream with a reasonable amount of effort and in obtaining an efficient feeding mechanism or ammunition box arrangement. Experimental tests on a number of types have resulted unsatisfactorily. Efforts in this connection are being continued.

MATERIALS BRANCH ACTIVITIES

Fire Hazard with Ethylized Gasoline.

The fire hazard from sparks and hot scale blown from the exhaust stacks increased with the use of ethylized gasoline. The first development to counteract this effect was a fireproof enamel which could be applied over doped surfaces. This has been quite satisfactory in preventing fires but is not so durable as the dope, without enamel.

New Nitrate Dope

A new type of nitrate dope pigmented with cadmium sulphide, which can be applied in the same manner as the standard semi-pigmented dope, has been developed and six observation types were refinished at Fairfield Air Depot. If the service tests are satisfactory, the fire-proofing of airplane fabric will be simplified.

Higher Strength Duralumin

The aluminum alloys used in the B-10 and B-12 airplanes, and all airplanes purchased on the 1945 contracts, will be of the type commercially known as 24S, Air Corps Specification #11066. This material has 15% greater strength than the duralumin formerly used and equal corrosion resistance. It is an alloy which can be hardened by heat treatment, but the temperature of the treatment is lower than for duralumin. When this alloy is heated to the temperature now used for duralumin it becomes unfit for service.

New Static Test Building

The new static test laboratory building arrived at a further stage of completion recently when the two big traveling cranes of 5 and 15 tons capacity were put in commission. These cranes have already demonstrated their usefulness by moving an entire static test set-up, steel scaffolding and all, and by picking up the new YOA-5 Douglas amphibian for functional test of the landing gear. Each of the above operations, carried out in a very few minutes, not only saved many man hours of work but made the operations safe and workmanlike.

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The annual maneuvers of the 4th Composite Group, Air Corps, under command of Lieut.-Col. A.L. Sneed, Air Corps, were held at Del Monte, Bukidnon, Mindanao, from January 14th to 26th, inclusive, 32 Air Corps officers, one Medical officer, one Reserve, one Naval officer and 104 enlisted men participating. Two officers, 70 enlisted men and all supplies were transported on the Army Mine Planter COL. GEO. F.E. HARRISON. The remaining personnel made the trip to Del Monte, 500 miles distant, by air. The return trip to Nichols Field was accomplished in the same manner.

The maneuvers served to acquaint all pilots intimately with the Island of Mindanao, its landing fields, and the general conditions to be expected there. A further benefit was to indicate to the civilian populace and the Constabulary the value of the work performed by them on landing fields, and the necessity for the requirements to which they were laid out.

Landings were made by practically all pilots on 19 different fields which may be considered satisfactory for operations of units from a flight in some cases to the entire group in others. Pilots who have previously served in the Philippines will appreciate that considerable field development work has been and is being done on the Island of Mindanao.

The average time per pilot for the maneuver period ran close to 40 hours, no accident or serious maintenance trouble being encountered.

The base at Del Monte was very satisfactory and could be used for any length of time by a group more modernly equipped than the 4th is at present. The landing area is part of the golf course belonging to the Philippine Packing Co., a Del Monte of California subsidiary. It is on a plateau-like shelf, 1800 feet above sea level, about 15 miles directly south of Cagayan, Oriental Misamis. In this locality the pineapples grow so big that the company had to dwarf the stock in order to use the conventional size can. Truck loads of corn (on the cob) and pineapples were delivered to the mess almost daily and always "gratis."

On the staff of the Group Commander were Major Louis M. Field, Flight Surgeon; Captains Isaiah Davies, Operations; Harvey W. Prosser, Engineering; Harold R. Rivers, Supply and Camp Commander, and 2nd Lieut. C.H. Caldwell, Adjutant. Capt. Martinus Stenseth commanded the 2nd Observation and Capt. L.L. Beery, the 28th Bombardment Squadron. Capt. Thomas W. Hastey, Commanding Nichols Field, attended the Maneuvers attached to the 28th Bombardment.

The Department Commander, Major-General Frank Parker, spent three days

in camp with the Group, during which time he conducted his annual tactical inspection.

One of the most interesting trips during the Maneuvers was to the Cotogato Province, where General Parker and the entire Group attended a Moro wedding at the home of Datu Paglas Ibrahim near Buluan. Gifts, some of them very old and rare, were presented to each officer present. Also, there were dances by comely maidens to music from Ah Gongs. Even the palm trees seemed to have rhythm.

Upon return to Nichols Field the Bombers, as cargo planes for any and all, were loaded with bolos, spears, shields, bows and arrows, blow guns, betel nut boxes, native hats and curios of Moroland.

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74TH PURSUIT WINS CANAL ZONE COMPETITION

Major-General Harold B. Fiske, commanding the Panama Canal Department, announced that the 74th Pursuit Squadron of Albrook Field, Canal Zone, is the 1935 winner of the Department Commander's Trophy, annually awarded the "best Air Corps Squadron" in the Department.

In his letter announcing the award, General Fiske said:

"I congratulate the officers and men of the 74th Pursuit Squadron, particularly as the competition offered by the competing squadrons was very keen. I wish also to commend the officers and men of the 25th Bombardment Squadron upon their excellent showing."

Colonel W.C. McChord, commanding the 19th Composite Wing, was the Judge of all phases of the competition except athletics and administration, both of which were handled by the Department Inspector General, Major R.N. Perley.

The competition, with the maximum possible score for each phase, was as follows:

Inspection and Close Order Drill - 100 points.

Establishment of a bivouac camp, including the cooking of one meal - 100 points.

Technical condition of airplanes and hangars - 100 points.

Administration - 100 points.

Under the heading of athletics, 25 points were awarded each squadron winning a post baseball or basketball championship. The competing squadrons were the 44th Observation, the 24th, 29th, 78th and 74th Pursuit Squadrons, of Albrook Field, and the 7th and 25th Bombardment Squadrons stationed at France Field.

The winning squadron is commanded by Orrin L. Grover, 1st Lieut. at the time of the competition, but now having the temporary rank of Major, Air Corps.

FUNCTIONS OF NATIONAL GUARD AVIATION

The 41st Division Aviation, Washington National Guard, is aiming to be included as a definite working unit in all problems and tactical maneuvers at the 41st Division National Guard Camp at Camp Murray and Fort Lewis, Wash.

This year is the first time in the history of the Division Aviation that it has had an opportunity to function with a Division camp composed of National Guard troops from Montana, Idaho, Oregon and Washington. Division Aviation regards the coming camp as an excellent opportunity for training of the nature that would become a reality in case of a national emergency.

Not since the formation of the Division Aviation has the organization had the Division Air Officer, to which it is entitled, on the staff of Adjutant General White, of Oregon, also the Division Commander.

In requesting a Division Air Officer at Headquarters, Major Robin A. Day, Instructor and Commanding the 116th Observation Squadron, has the enthusiastic support of the squadron officers, who firmly believe much general good will result to all arms of the service by the presence of an Air Officer on General White's Staff.

It is the desire of the squadron officers that Captain Gardner, Regular Air Corps officer attached as Instructor to the Reserve Aviation at Boeing Field, Seattle, be made Division Air Officer for the camp period.

As the training schedule for the camp appears at this time, the Washington National Guard airmen believe they will be "mere messengers of the air" for catalogued missions long planned not to upset the opposing ground forces. Such a program is regarded as insufficient understanding on the part of plans and training officers as to how aviation can be used to advantage by all arms of the service. This understanding, the airmen contend, will be greatly corrected by the advice of an Air Corps officer on the Division staff and will result in greater effective use of aviation in all future camp maneuvers.

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HOW FLYING HOURS ARE ACCUMULATED

To answer a query by the Arkansas National Guard Aviation as to how similar organizations roll up hours on tactical missions, the 41st Division Aviation, Washington National Guard, calls attention to various types of tactical missions carried on regularly with ground troops.

Radio, telephone and panel missions are carried on weekly with some of the following organizations: Fourth In-

fantry Regiment, Fort George Wright; 161st National Guard Infantry, Spokane; 148th Field Artillery, Idaho National Guard, Coeur d'Alene; 248th Field Artillery, Washington National Guard, Olympia; 249th Field Artillery, Oregon National Guard, Salem, Oregon.

A great deal of flying is done on the beam, and many radio missions are completed with the Division Aviation groups station. Panel work is given much consideration. One of the most popular tactical missions is all types of photographic work, especially with the camera gun.

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SALESMAN IS SOLD ON INSTRUMENT FLYING

Experience makes salesmen, even for instrument flying. In this particular instance the new instrument flying salesman was already a salesman for a certain brand of underwear.

Major Robin A. Day, Commander of the 116th Observation Squadron, Washington National Guard, is an instrument flying enthusiast, "because it is certain to pull you out of a jam sooner or later."

Pilots of the Squadron have believed him, and worked hard under the hood. But Captain William Foster, the underwear salesman, found out that under the hood and "being right in it" is just as different as day and night.

On a weather-threatening flight between Seattle and Tacoma, after having safely crossed the Cascades from Spokane, Capt. Foster encountered a rather innocent-looking storm cloud. He wasn't hunting for trouble, so swung around the cloud, with the exception of one little tip through which he expected to pass in a minute or two. Minutes, however, seemingly turned into hours. All became black inside, and soon the driving sleet formed a deep thickness of ice on the wind shield of the C-33E. With his radio on the Tacoma beam, the Captain went forward, thinking "we'll soon be through this."

His eyes were glued on the bank and turn indicator, altimeter and air speed indicator. There was no time to look across the instrument board at the artificial horizon. The ice formation grew thicker as he next attempted to come out on top. It was then that he requested over the interphone that the radio be switched to the Seattle beam. No sooner had this been accomplished than the SC-134 went out.

Then started the spiral downward from 3700 feet altitude. When the ground came to view the airplane was at an altitude of only about 200 feet.

"The Major is right," came a satisfied voice over the interphone to the observer, "instrument flying will pull you out of a jam sooner or later."

Capt. Foster has added instrument flying to his underwear salesmanship.

In a speech in the House of Representatives on March 22nd, the Hon. John J. McSwain, Chairman of the House Military Affairs Committee, expressed his belief that most forward-looking, disinterested students of national defense for the United States now regard aircraft as "the first line of defense." He then stated:

"Whether that air power be based directly upon land, or be based upon floating surface craft, such as aircraft carriers, it is nevertheless 'air power' and wherever that 'air power' is exerted it constitutes 'the first line of defense.'

Armies can only defend against invasion by other armies operating on the ground. Naval fleets can only defend us against other naval fleets operating upon the sea. But these two agencies leave us undefended as against attack and invasion by the 'upper flank.' This 'upper flank' consists of 10 miles depth of air and more, and includes a ring around the United States 10,000 miles long. Every mile of altitude and every mile of length constitutes a possible 'port of entry' for invasion by air, and thus there are as many as one hundred thousand points of attack by air, one hundred thousand 'ports of entry' for invasion by air. This means, to the mind which faces the facts as they are, and as they are sure to be tomorrow, that we must increase our capacity to defend America against air attack. We must not only increase aircraft in numbers and in performance, but we must increase personnel to direct such increased number of aircraft. In air fighting the personality of the individual is the greatest single factor. Leadership in ground fighting and in sea fighting is very important. But in air fighting every pilot must largely be his own leader. He must have within himself the will to conquer. He must possess the willingness to dare and to do and to die, out in the lonely air, away from the inspiration of comrades, away from the bugle blast, away from the waving flag, away from the cheers of his companions, away from the newspaper reporters and photographers to record his heroic deeds. In the council chambers of his own soul the air fighter must hold his rendezvous with death and face that issue alone and upon his decision will depend our defense. He, therefore, must be trained and disciplined to meet that test and to resolve that issue in favor of his country and even against his own life.

The size of our earth shrinks as air power increases. The oceans grow narrower as the range of aircraft widens.

Mr. Speaker, the world is now only one-tenth the size it was before the Wright brothers invented the flying machine. Furthermore, development of air-

craft in speed, in range, in load-carrying capacity, and in other fighting qualities, will certainly reduce still further the size of the world. Only about 100 years ago that 'wet ditch', the English Channel, about 30 miles wide, was an insuperable barrier to Napoleon's ambitious schemes to defeat and humble England. Today who will dare say, in the face of the fighting and bombing aircraft known even now, that America is secure from invasion and attack by air power, even with 3,000 miles of water on her east and 3,000 miles of water on her west? We need not think that other nations will not use air power in any way that it can be used in order to accomplish their will and to defeat an enemy. We would do it if we got into war, and they will do it.

When war comes all conventions, all treaties, and all so-called 'rules of civilized warfare' will crush and crumble like sand cakes. Undoubtedly, in the next war nations possessing sufficient air power will bomb great centers of population and great centers of industrial activity. Undoubtedly in such cases thousands, and maybe hundreds of thousands, of unarmed and defenseless men and women, being citizens of a nation at war, will be killed or wounded or poisoned from the air. There is no such thing as a 'gentleman's war.' If we do not wish to suffer such horrors, then we must keep out of war. We cannot keep out of war by merely wishing to do so. We can only keep out of war by being prepared to prevent invasion and to punish the invader. We can do this only by having adequate and ample air power consisting of aircraft and trained fighters to employ at once such aircraft.

In America only a war of defense is possible. Whoever will not defend America should not live in America. * * *

Further on in his speech, Mr. McSwain refers to his proposal to Congress and to the country of a consistent and coherent program of expansion and development for the air power of the United States. "That program," he stated, "proposes to enlist the individual initiative, the inventive genius, and the scientific skill of every person in America, however humble and obscure or however powerful and widely known. That program has four stages. These four stages deal, respectively, with personnel in the air forces, the reserves for the replacement of the air forces, the organization of the junior air reserve, and a new program of development and improvement under the general head of procurement."

Touching on the personnel factor, Mr. McSwain referred to the Bill, H.R. 4351, to set up for the Air Corps a separate promotion list. This Bill was quoted in the February 1st issue of the News Letter.

Mr. McSwain made the contention that just as there is a separate promotion

list for the Marine Corps in the Navy, so there ought to be a separate promotion list for the Air Corps, even so long as it remains attached to and a part of the Army. There is a different principle involved in the personnel of the flying forces from that in the ground forces. Discipline for an air officer is a different thing from discipline for a ground officer. Esprit de corps, morale, loyalty to the high command, and all of those factors going to make up a strong and coherent military organization have different forms and are to be interpreted in different terms when applied to the men who fight in the air. That is why there should be a separate promotion list.

"The provision for temporary promotions in the Air Corps," Mr. McSwain said, "is not entirely satisfactory. It ought not to be indefinitely continued. As long as the officer personnel of the Air Corps remains on the promotion list of the Army generally, there is no escape from the occasional use of temporary rank. But with a separate and independent promotion list such temporary rank could be immediately discontinued."

Pointing out that every encouragement must be given to the Organized Reserves and toward every factor going into their development and improvement, Mr. McSwain stated that in time of anything like a major war, Reserve officers will outnumber the Regular Army officers 10 to 1. He referred to several bills introduced by himself and one by Mr. Thomason, of Texas, having for their object the development of the Air Reserve. The gist of these bills was given in the February 15th issue of the News Letter.

Mr. McSwain also referred to the Bill H.R. 6621, to authorize the selection, construction, installation and modification of permanent stations and depots for the Army Air Corps, and frontier air-defense bases generally, stating that he is sponsoring this bill most enthusiastically. On March 22nd, the House Military sub-committee approved this bill without a dissenting vote.

It is quoted below, as follows:

"Be it enacted, &c., That the Secretary of War is hereby authorized and directed to determine in all strategic areas of the United States, including those of Alaska and our overseas possessions and holdings, the location of such additional permanent Air Corps stations and depots as he deems essential, in connection with the existing Air Corps stations and depots and the enlargement of the same when necessary, for the effective peace-time training of the General Headquarters Air Force and the Air Corps components of our overseas garrisons. In determining the locations of new stations and depots, consideration shall be given to the following regions for the respective pur-

poses indicated: (1) The Atlantic Northeast - to provide for training in cold weather and in fog; (2) the Atlantic Southeast and Caribbean areas - to permit training in long-range operations, especially those incident to reinforcing the Panama Canal; (3) the Southeastern States - to provide a depot essential to the maintenance of the General Headquarters Air Force; (4) the Pacific Northwest to establish and maintain air communication with Alaska; (5) Alaska - for training under conditions of extreme cold; (6) the Rocky Mountain area - to provide a depot essential to the maintenance of the General Headquarters Air Force, and to afford, in addition, opportunity for training in operations from fields in high altitudes; and (7) such intermediate stations as will, in connection with (6) provide for transcontinental movements incident to the concentration of the General Headquarters Air Force for maneuvers.

In the selection of sites for new permanent Air Corps stations and depots and in the determination of the existing stations and depots to be enlarged and/or altered, the Secretary of War shall give consideration to the following requirements:

First. The stations shall be suitably located to form the nucleus of the set-up for concentrations of General Headquarters Air Force units in war and to permit, in peace, training and effective planning by responsible personnel in each strategic area, for the utilization and expansion, in war, of commercial, municipal, and private flying installations.

Second. In each strategic area deemed necessary, there shall be provided adequate storage facilities for munitions and other essentials to facilitate effective movements, concentrations, maintenance, and operations of the General Headquarters Air Force in peace and in war.

Third. The stations and depots shall be located with a view to affording the maximum warning against surprise attack by enemy aircraft upon our own aviation and its essential installations, consistent with maintaining, in connection with existing or contemplated additional landing fields, the full power of the General Headquarters Air Force for such close and distant operations over land and sea as may be required in the defense of the continental United States and in the defense and the reinforcement of our overseas possessions and holdings.

Fourth. The number of stations and depots shall be limited to those essential to the foregoing purposes."

Sections 2 and 3 of this bill authorize the Secretary of War to secure such land as may be necessary for the purpose contemplated and to set the machinery in motion for the necessary construction work at these air bases.

Section 4 authorizes the appropriation of funds to carry out this Act.

REPORT OF THE FEDERAL AVIATION COMMISSION (Concluded)

In recommending that procurement policies should be planned to encourage the development of integrated manufacturing units carrying on their own research, development, design, and production work, the Commission, taking into account the flexible nature of aircraft production work, does not favor the policy of maintaining on the one hand a number of experimental shops which will create new designs, develop new types of aircraft, and after the first machine has been built and flown take no further interest in their own handiwork, and on the other hand a group of mass production plants that will take over the designs from the experimental units and build them in quantity. Protracted service trials of new types of aircraft develop many shortcomings, and if these manifest themselves at a sufficiently early stage immediate changes in the design can be made. The manufacturer follows his product into service, and if the initial responsibility for the design be taken from him, his interest is diminished as is his desire to produce an improved article in succeeding designs.

The Commission recommends that it should be basic policy to concentrate responsibility by insisting that the whole development remain under the control of a single organization. There may of course be exceptions to this rule where an individual engineer or a small organization possessed of no adequate production facilities produces a design of extraordinary merit and submits it for consideration by the War and Navy Departments. Experience suggests, however, that such cases will be exceedingly rare, and can be met by individually exceptional treatment when they develop. An aircraft design is not an invention. It has passed beyond the point where it can be inspired as a whole by a single individual. Good airplanes are not the product of miraculous inspiration but usually of the coordinated effort of a design and research organization of a dozen or more groups of specialists. Self-contained organizations, able to start with a clean sheet of paper and the appropriate research laboratory facilities and go straight on from that point until their airplanes have been built in quantity and are flying for the Army and Navy, remain the ideal to be encouraged.

Recommending that explicit authority should be granted to the Secretary of War and to the Secretary of the Navy to negotiate contracts for quantity purchases of aircraft and other aeronautical material, subject to the requirement that a full report be made to Congress in each case where the authority is used, the Commission states:

"The further we have pursued our inquiry into procurement methods and problems, the more deeply we have been impressed with the almost unique nature of this particular branch of governmental purchasing. Military aircraft and most of their accessories are articles which are under enormously rapid development

and which are developed in the military interest alone. It is impossible to be perfectly certain of what an aircraft will do until after it has been built, and the construction of the first example must therefore be undertaken before it can be determined whether or not the machine will actually meet military needs. If the Army and Navy fail to buy a machine so constructed, the chance of finding a market elsewhere is practically nil. In other fields, buying under minimum specification can assure a satisfactory article. Here it becomes almost impossible. There are so many factors which determine the degree of merit for military purposes, and the relations among them are so complicated, that it is almost impossible to draw a rigid specification with assurance that all aircraft meeting it will be fully acceptable. Furthermore, the need for the very highest quality is such that buying to a minimum specification would be undesirable in any case if there should be offered at the same time an article exceeding the specification requirements by ten, twenty, or fifty percent, even though its price might be materially higher than that of the article which just barely got by.

The airplane is essentially a proprietary article in that it represents the experience of a particular organization and that it is in constant development. Each machine that an organization produces ought to lead directly into its next design, and each organization develops certain types of structure and features of design of its own of which it becomes the master.

Regarding all these peculiarities, we find it impossible to accept the normal process of competitive bidding and award to the low bidder as being calculated to give the government the best value for its money. It seems to us essential that there should be administrative discretion to balance quality against price, but always keeping quality to the fore. It seems essential that the Services should be able to make purchases of the best type of aircraft available directly from its originator, who is not only in the best position to build it but who in doing the work will be paving the way for his preparation of another design of improved qualities for the same general function.

The Air Corps Act of 1926 provides that when competitive bids are received for aeronautical material, the award may be made 'to the bidder that said Secretary shall find to be the lowest responsible bidder that can satisfactorily perform the work or the service required to the best advantage of the government', and makes the decision of the Secretaries of War and of the Navy upon the selection of the winning bidder final. If that authority were freely and courageously used, and if it were generally understood and accepted that the interests of the Services may very commonly require that awards be made elsewhere than to the low bidder, and if each bidder were required to tender on his own product or on a design turned over for the purpose by the responsible department and upon

which a successful bidder would pay royalty to the originator, and if the fog of legal complication that seems to have settled down on every attempt to buy military aircraft during the past few months could be dispelled, we should see no reason to object to the competitive bidding method except that it introduces some extra months into the already long period of development of a new type of aircraft.

Unfortunately the stipulations of the previous paragraph have not generally been met. The actual award of contracts elsewhere than to a low bidder has been looked at askance as likely to attract public disfavor in the absence of an understanding of all the technical factors involved, although to be sure the present Assistant Secretary of War declares himself quite ready to make the fullest use of his powers under the 1926 Act. With respect to the protection of design right and the use by every bidder of his own designs, the Army has pursued one practice and the Navy another. The whole subject has become involved in a maze of confusion which almost terminated Army aircraft procurement over a period of one full year.

Even further complications are now created by the letter of the Comptroller General of December 12th, which appears to question the legality of the Army's current procedure of requiring the submission of a sample article with a bid and to demand that the Navy practice of letting all bidders compete on a single design which some one of them has developed and which has been accepted as best for the Service shall be the standard. We have already made plain our alarm over the prospective consequences of this ruling, should it be enforced, and its threat to separate the processes of design and production.

While we are hopeful that the present situation may be clarified and that the competitive bidding process may be made workable and brought to a form where it can encourage the development of good aircraft, at the same time we feel that there are occasions on which competitive bidding is bound to be a farce because of the absence of available competition or on which time is so important that the issuance of proposals would not be justified. To meet those cases it seems to us essential that direct negotiation with the manufacturer best able to perform the work (and in some cases as a practical matter there is only one who can perform it adequately) should be authorized.

We recognize the dangers of negotiation, and we recognize that the Congress has very naturally looked askance upon it. We hesitate to propose that negotiative procurement be approved, and we do so only after being convinced that in many cases it is the only method that will work and that will produce a good article in a minimum of time. As a safeguard to be thrown around this extraordinary grant of power, we suggest that in each case where negotiation is used on a contract for a total sum of more than \$10,000 a report should be made to the Congress by the head of the department concerned, explaining the reasons for

using negotiation and the factors that entered into the determination of the price and the other conditions of the contract. Such a report might well include also the identification of the personnel participating in the negotiation.

We hope that with such an assurance of constant information on what is being done and how and why it may seem possible to approve a method of procurement which we understand to be uniformly in use by the great European powers. Alternative methods of allocating work and of fixing price have been tried from time to time both in Great Britain and in France. Competitive bids are still invited on occasions, but they are the exception rather than the rule. The normal procedure apparently accepted in both countries, and in Italy as well, as necessary to the protection of the interests of the government is the buying of the desired equipment from the man who is in the best position to sell it, and at a price agreed upon and accepted by government representatives as fair. American experience seems to us to confirm that of Europe in indicating that that method of buying is essential in many cases to the securing of a satisfactory result.

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OFFICERS TO ATTEND AIR CORPS TACTICAL SCHOOL

A total of 50 Air Corps officers will attend the next class at the Air Corps Tactical School at Maxwell Field, Ala. Under Special Orders of the War Department, just issued, these officers are directed to report to the Commandant of this School for duty as students not later than August 29, 1935, viz:

Majors William E. Kepner, Edwin M. Powers*, Kenneth B. Wolfe*, Captains Aaron E. Jones, Alfred J. Lyon, 1st Lieuts. Benjamin W. Chidlaw, Edmund C. Langhead and Alden R. Crawford from Wright Field, Dayton, Ohio.

Major Lewis A. Dayton*, Captains Orvil A. Anderson, Dale V. Gaffney, Edgar L. Sorenson, Carlisle I. Ferris*, Augustine F. Spear, Kelly Field, Texas.

Major John F. Cannon*, Captain Leon E. Sharon, 1st Lieut. Homer W. Ferguson, Randolph Field.

Major Samuel M. Connell*, Chanute Field, Ill.

Captains Harold L. Clark, Harry A. Daverson, Max F. Schneider, 1st Lieut. Lawrence J. Carr, Office of the Chief of the Air Corps.

Captain John A. Clark, Bartlesdale Field, La.

Captain Joseph H. Davidson, 1st Lieut. Nathan F. Twining, Fort Crockett, Texas.

Captain Thad V. Foster, Fort Sam Houston, Tex.

Captain Earl S. Hoag, Chepman Field, Fla.

Captains Newton Longfellow, Harold A.

McGinnis, 1st Lt. Elwood R. Quesada, Langley Field, Va.

Captain Leland W. Miller, Mitchel Field, N.Y.

1st Lt. James E. Parker, Selfridge Field, Mich.

Captains George V. McPike and Chas. E. Thomas, Army Industrial College, Washington, D.C.

Major Raymond E. O'Neill, Captains Ernest

Moon**, Ralph A. Snavely**, and 1st Lieut.

Thomas M. Lowe, Maxwell Field, Ala.

Captains Russell L. Maughan, Charles H. Caldwell***, Ford L. Fair***, William D. Old*** FROM the Philippines.

Captain Merrill D. Mann, Instructor, 33rd Division Aviation, Ill. National Guard, Chicago.

Captain Charles A. Horn, Instructor, Arkansas National Guard, Little Rock, Ark.

Captain Eugene B. Bayley, Instructor, 40th Division Aviation, California National Guard, Los Angeles.

Captain Richard H. Magee, Instructor, 28th Division Air Corps, Pennsylvania National Guard, Philadelphia, Pa.

Captain Claude E. Duncan, 1st Lieut. John H. Dulligan, March Field, Calif.

First Lieut. James T. Cumberpatch, Crissy Field, Calif.

Major Cortlandt S. Johnson****, Rockwell Air Depot, Calif.

*Relieved of temporary Rank, Aug. 20, 1935.

** " " " " Sept. 2, 1935.

*** " " " " effective upon date of departure from Philippines.

**** Relieved of temporary rank, July 26, 1935.

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WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Office, Chief of the Air Corps: Captain James A. Lollison, from Air Corps Training Center, Randolph Field.

To Chapman Field, Miami, Fla.: Captain William V. Andrews, from Bolling Field.

To Boston, Mass.: Captain Walter E. Richards, from Philippines, to duty with Organized Res.

To Bolling Field, D.C.: 1st Lieut. Arthur L. Bump, from Brooks Field, Texas.

To Randolph Field, Texas: 2nd Lieut. George F. Hartman upon completion of tour in Panama: 1st Lieut. Charles A. Harrington from U.S. Military Academy, West Point, N.Y.

To Command and General Staff School, Fort Leavenworth, Kansas, for duty as Instructor: Captain Sam L. Ellis, upon completion of course of instruction at this school; Major Eugene A. Lohman, from March Field.

To Air Corps Tactical School, Maxwell Field, Ala., for duty on Staff and Faculty: 1st Lt. Laurence S. Kuter, upon completion of course of instruction at that School.

To Omaha, Neb.: for duty with Air Corps at Headquarters, 7th Corps Area: Captain Younger A. Pitts, from Fort Leavenworth, Kansas.

RELIEVED FROM DETAIL TO THE AIR CORPS: 2nd Lieut. Gerhard L. Bolland, and to Hawaiian Department for duty with the Infantry.

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Effective March 25, 1935, Captain Fred S. Borum, Air Corps, was assigned to duty as Chief of the Equipment Branch, Engineering Section, Materiel Division, Wright Field, Ohio, with the temporary rank of Major.

First Lieut. James M. Bevans was assigned to duty as Adjutant at the Air Corps Training Center at Randolph Field, Texas, with the temporary rank of Captain.

Because of many requests from Army and Navy airmen for information regarding the performance of the so-called Robot Mystery plane, the Sperry Company recently issued a statement, with the approval of Mr. Eugene L. Vidal, Director of Air Commerce, outlining certain facts in connection with the big Douglas airliner in which Captains Albert F. Hegenberger and Clayton L. Bissell, Air Corps, have been making flights recently from Oakland, Calif., to test the feasibility and possibilities of accurate aerial navigation employing the Radio compass in conjunction with automatic control of the plane.

It is stated that the plane is equipped with the Kruesi Radio Compass and the Sperry Gyropilot, but they are not interconnected as was implied in some quarters. Of particular interest is the assertion of the Sperry Company that means have been developed by which this may be accomplished. A large number of these radio compasses have been ordered by the U.S. Army, and they are also being seriously considered for numerous transport planes. The Gyropilot is identical with those used on various commercial air transport lines.

In connection with the tests on the Pacific Coast, where up to this writing three long distant flights were completed over the Pacific, the longest being 400 miles out and back again, a total of 800 miles, it is stated that the flying has always been automatic, except for a few minutes after take-off and a few minutes before landing.

The Sperry engineer assigned to the plane reports that the Gyropilot is actually enabling a new technique in aerial navigation to be accomplished; that where formerly it was practically impossible to steer closer than about 2 degrees by magnetic compass, the gyropilot is holding the ship so steady that courses are now being steered by magnetic compass as close as half a degree. By having the airplane under automatic control, the practicability of the radio compass is increased to the nth degree.

The sensitivity of the radio compass is controlled by the volume control on the radio. With the ship under manual control, it is normally necessary to carry a reduced sensitivity setting in order to prevent the compass needle from swinging back and forth across the indicator dial, due to the impossibility of steering a continuously straight course manually. Under automatic control the compass sensitivity can be greatly increased and still have the compass indicator remain steady. The increase in sensitivity permits the compass to show up minute changes of course that otherwise would not be indicated.

It is stated that on completion of the experimental flights on the West Coast, it is contemplated making flights of varying length with this or a similar airplane from the East coast.

NOTES FROM AIR CORPS FIELDS

Barksdale Field, La., March 20th.

Forty-three enlisted men of the Third Attack Group were detailed to Maxwell Field by Third Wing Orders to form a new squadron under the HQ reorganization plans. Transportation for this personnel to their new station was provided in connection with a formation training flight of 26 planes, led by Capt. C.C. Chauncey, Group Operations Officer. In addition, two transport loads were taken from Barksdale to Maxwell Field. Some of the men made the trip in private autos.

The men transferred were: Sergeants Earl W. Hoyle, Walter M. Atkinson, Ernest Maves, Joseph C. Child, Bruce G. George and Charles L. Bibbee;

Corporals Raymond E. Dunaway, Henry F. Vandergraft, Joseph E. Stinchcomb, Gailey Bradford, Charles S. Thompson, Eurskin W. Nash, Otto J. Butterfass;

Privates, 1st Class, Lee B. Miller, Johan O. Bersaas, Archie Calhoun, Guy E. Cunningham, Loyd J. Gemberg, Bernard F. Ketenerside, Albert Milburn, Jack Anderson, Rolfe M. Watson, Preston Stephens, Leon E. Grayson, Edgar C. Dawson, Louis F. Buchanan, Roy Moore, Frank Simeresky, Matthew A. Schmidt, Cornett W. Fuliam, John R. Hughes, Sam S. Campbell, James J. Emigh, Kenneth F. Lenhart, Lester B. Camp, Floyd J. Davis, E.M. Tucker;

Privates Andrew J. Nealy, Kenneth D. Coleman, Sidney E. Doga, Lawrence E. Handley, Forest G. Smith and Roosevelt Williamston.

March Field, Riverside, Calif., March 15th.

Ground gunnery installations at Muroc Lake are rapidly assuming shape. Three separate camps are being established with a gunnery and bombing range for each attack squadron. Centrally located and for the use of all is a bomb and powder dump. Present plans also call for the establishment of permanent barracks large enough to house range details, offices, and messing facilities.

Luke Field, T.H., March 8th.

The only officer to depart for a mainland station on the February 12th Transport was Capt. Raphael Baez, Jr., Commander of the 23rd Bombardment Squadron. Captain Baez made many friends while in Hawaii, not the least of whom were the members of his command. At an "Aloha" dinner in the Squadron mess hall, Capt. Baez was shown with what high esteem he was held by both officers and men, and he, in turn, presented the organization with an excellent all-wave radio set.

Flying activities were suspended for several days, an unusually hard rainstorm causing the flying field to resemble a lake in some places. Five inches of rain fell in Honolulu within four hours, flooding most of the streets, roads, washing out several bridges and marooning people at various places.

A flight of three airplanes departed on March 4th to perform towing missions for the

64th C.A. (AA) for the next six weeks at Waimanalo. Additional Air Corps officers will be assigned in order that they may spend two weeks with the Coast Artillery in liaison and contact work.

Following the recent order concerning temporary promotions, considerable reorganization is taking place, with the rank and file wondering how it will all end.

The Luke basketball team won the Sector-Navy Championship for the 4th consecutive year. Most of the games were close and exciting, only two of them going the wrong way. It looks as if the struggle for the Department Championship will again be between the 3rd Engineers and Luke Field, as was the case the past three years.

Hawaiian Air Depot, March 8th.

On February 27th, the Hawaiian Islands were engulfed in a torrential rain, which seriously hampered operations at the Depot. Due to many leaks in some of the old buildings, a considerable amount of supplies was damaged, and it was necessary to stop all operations in the Supply Section and put the entire personnel to work wiping off, reoiling and re-greasing supplies. This rainstorm was out of the ordinary and demonstrated the necessity for a new Air Depot or the expenditure of considerable funds to repair the buildings now in existence. One of the humorous incidents connected with the flood was when Lieut. Carlson endeavored to reach town from the Depot at the height of the storm. He became stuck in the water and upon getting out of his car found a 14" catfish resting on his front fender.

During February, the Engineering Section completed five major overhauls, overhauled seven engines and one major assembly, a B-4 airplane. Production work of this section is rapidly approaching the maximum output of a depot possible under present personnel and building conditions.

Capt. Arthur G. Liggett was relieved as Adjutant and assigned as Squadron Commander of the 23rd Bombardment Squadron, Luke Field. Lieut. Oscar F. Carlson assumed the duties of Depot Adjutant in addition to his other duties.

Fort Lewis, Wash., March 5th.

Capt. I.J. Williams, with Pvt. V.L. Mortvedt took off on an extended flight to Washington, D.C., by the Southern route.

One C-25C airplane was sent to Rockwell Air Depot for overhaul, leaving this station with one C-25C for the next two or three weeks. This plane is now being used for Radio Beam flying and cooperative missions.

An intensive course in landscape gardening is in line for the detachment at this post in an attempt to make grass grow where none grew before.

Lieut. Carl Swyter, Air Reserve, enlisted. He is a candidate for a commission in the Air Corps, Regular Army.

Our Squadron recently entertained a 7-ship representation from the Tennessee Squadron at Nashville. The flight was led by Major Walter M. Williams, Commander, whose passenger was Adjutant General Ballew. Among other members of this flight were Captain W.B. McCoy, Regular Army Instructor, and Lieut. Robert F. Wirsching, on leave from our Squadron and now residing in Nashville. Arriving at Stout Field at 3:10 p.m., the visitors, after making an inspection tour of the buildings and equipment, took dinner at the field club house, which was attended by 33 officers in all, including Adjutant General Elmer F. Straub of Indiana. Short speeches were made by Generals Ballew and Straub, Majors Stout and Williams. After dinner, the Tennessee boys entertained with a song fest of very high quality.

The two squadrons intended having a little practice in larger formation work, using 12 planes, but inclement weather interfered.

This visit by the Tennessee Squadron was both enjoyable and instructive for us. We are always glad to be host to our sister squadrons and feel that there is real training value in the fellowship and closer association thus gained.

Our regular army instructor, Captain Guy H. Gale, was ordered to the Air Navigation School at San Diego, Calif., which started March 20th. This is a two weeks' course in instrument flying which will be attended by the National Guard instructors and then passed on by them to the squadron officers.

Advanced Flying School, Kelly Field, Texas.

Seventy students reported on March 1st from the Primary Flying School, Randolph Field, and were assigned to specialized training, as follows: Attack, 1 officer, 9 Cadets; Bombardment, 1 officer, 21 cadets; Observation, 2 officers, 1 foreign officer and 17 cadets; Pursuit, 1 officer, 17 cadets.

Personnel assigned to training these students were as follows: Attack, Capt. W.P. Sweeley (Chief), 1st Lieuts. G.A. Whitley, C.P. Bradley, 2nd Lieut. K.A. Rogers; Bombardment, 1st Lieuts. W.E. Whitson (Chief), Joseph Smith, J.M. Fitzmaurice, G.C. Jamison and 2nd Lieut. R.D. Butler; Observation, Capt. G.A. McHenry (Chief), 1st Lieuts. A.F. Shea, O.P. Weyland, E.H. Underhill, T.L. Bryan and F.H. Smith, Jr.; Pursuit, Capt. D.V. Gaffney (Chief), 1st Lieuts. J.S. Griffith, C.K. Rich, H.E. Engler, J.B. Burwell and R.J. Browne.

Effective March 1st, the 81st Service Squadron, Air Corps, was constituted and organized at this station from personnel transferred from other organizations. The 68th Service Squadron was the only one which retained its designation.

Colonel Jacob E. Fickel, Commandant of the Advanced Flying School, was one of the speakers at a reception and banquet given on March 21st in honor of Major General Frank C. Billes, Commander of the Second Division and Fort Sam Houston. In attendance were the

ranking officers and commanding officers of the fields and stations around San Antonio, as well as National Guard, Reserve and members of the civic organizations of the city.

Permanent officers of Kelly Field who made extended flights between classes were: Captain E.D. Knapp to Boston, Mass., in P-12; to Rockwell Field, Lieut. R.J. Browne in F-12, Lieut. Charles Sommers in C-14; to Santa Monica, Calif., Lieut. J.W. McCoy in P-12; to Bolling Field, Cpts. L.A. Dayton and N.W. White in BT-2, Capt. C.C. Nutt in BT-2, Major H.E.C. Richards and Capt. W.M. Lanagan in BT-2, and Capt. O.A. Anderson in BT-2 to Wright Field where he will be on detached service in connection with impending stratosphere flight.

Lieut. A.R. McConnell ferried an O-19 to this station from Rockwell Field.

Having won the 8th Corps Area, local, football Trophy, the Kelly Field fliers proceeded to win the Army basketball Trophy after a season of brilliant playing. Only one of the 12 games played went on the wrong side, the 9th Infantry copping that one by one point, Randolph Field was runner-up with 9 wins and 3 losses.

Lieut. "Ken" Rogers led a field with a 7-4 in the qualifying round of the annual golf tournament in San Antonio recently. He is the outstanding player in the 8th Corps Area.

Hamilton Field, San Rafael, Calif. March 20.

For extraordinary achievement in flying through the blizzards of the Northwest and in directing the ground work of the other pilots of the "Arctic Patrol," Capt. Arthur G. Hamilton, who returned here March 13th, was recommended for the Distinguished Flying Cross by Lieut.-Col. Ralph Royce, who commanded the Cold Weather Test Group. Second Lieut. Birrell Walsh returned with Capt. Hamilton, and 1st Lieut. Paul Kemmer, who also flew as a pilot in this expedition, landed here before Captain Hamilton's arrival. The coldest winter that has gripped the Northwest in many years are Staff Sergeant Thomas B. Vinson, Sergeants Roy E. Coulter, George W. Hollerell, Edwig Kurnley, Corp. Harvid Saeger and Pvt. Jack Matthews. In spite of the severe cold, these men report a very pleasant trip.

The Panama Flight was called off on account of lack of funds, and the 16 officers, 16 enlisted men and 11 B-12 Martin Bombers returned to Hamilton Field.

Brig. General Henry H. Arnold, on March 9th, flew to Hamilton Field on his first official visit since his promotion to a general officer. It is reported that he gave his official O.K. to the field and congratulated Lieut.-Col. Clarence L. Tinker on his recent promotion.

With the return of the Panama Flight, an aircraft classification would show the following types of planes at Hamilton Field, viz: 5 PT-3A, 1 F-26A, 1 C-14 Fokker, 1 BT-2B and 15 B-12A. The Pursuit plane is the command ship of Lieut. Col. Tinker.

Second Lieut. Birrell Walsh assumed command of the 31st Bombardment Squadron since his return from the "Arctic Patrol" on March 12th.

Chaplain Stanley J. Reilly is launching a drive to fill the shelves of the Post Reading

room with books, magazines and treatises on technical subjects, so that the hundreds of young men at Hamilton Field may read for recreation or mental development during their spare hours. In an open letter he is requesting the people of the Bay districts to donate their spare volumes to the airmen at the Marin County field.

Recent duty assignments were as follows: Capt. Guy Kirksey as Post Reclamation Officer; 1st Lt. Wilbur Erickson as Public Relations Officer; 2nd Lt. Lewis L. Mundell, Air Res., as Asst. Supply Officer; 1st Lieut. Alvord V.P. Anderson as Post Transportation Officer, replacing 2nd Lt. Roy H. Lynn; 2nd Lieut. Joseph F. Bohl as Asst. Post Transportation Officer, in addition to other duties; Tech. Sgt. Philip E. Moloney as Post Sergeant Major and Tech. Sgt. Wm. J. Riley as Group Sergeant Major.

"Aviation Medicine" was the subject of an address delivered by Major Robert C. Murphy, Post Surgeon in the absence of Major Fabian L. Pratt, before the Lions' Club of San Rafael. He was then brought into the Lions' den as an honorary member of the "Knife and Fork" Club.

The national game should enjoy its biggest year at the field with 2nd Lieut. Edward W. Suarez officiating as Athletic Officer. With one of the best diamonds on the west coast and a number of fast players, Hamilton Field locks like a pennant winner.

Chaplain Stanley J. Reilly is sponsoring the organization of a N.C.O. Club.

Training for the 9th, 11th and 31st Squadrons emphasized the use of available equipment in practice flights in the B-12 for as many pilots as possible, including also instrument flying for pilots of post and group headquarters. In ground training, preliminary pistol practice, preliminary training of three machine gun crews per squadron, practical instruction of junior flying personnel in combat and ground crews and extension courses for officers of over two years' service outline the salient points of the schedule.

41st Division Aviation, Washington National Guard, Felts Field, Spokane.

An advancement in instrument flying is to be made by pilots of the Division. Ten pilots, who completed their scheduled 10 hours under the hood, will go to cloud flying as soon as the new type radio equipment is installed, about April 1st. Rapid advancement in instrument flying was made possible by the equipment of two Douglas O-38E's with hoods designed by Major Robin A. Day, Squadron commander and instructor. These hoods operate under the glass hood, the canvas covering being drawn forward to the instrument board on two metal rods running forward from the pilot's seat on the sides of the fuselage.

Major Day left Spokane March 18th for Rockwell Field to pursue a two weeks' course at the Air Navigation School. Prior to his departure he conducted the annual Federal armory inspection of troops and equipment.

Langley Field, Va., March 16th.

This station regrets the prospective departure of Capt. George L. Usher, former Post Adjutant and E. and R. Officer, for duty in the Office of the Chief of the Air Corps. Capt. Usher is noted in Eastern football circles for his ability as a coach. His Langley Field football teams have never failed to annex the 3rd Corps Area Championship and they have established an enviable reputation in their games with college teams in Virginia, West Virginia and the Carolinas and with such noted service teams as the East Coast Navy and Quantico Marines. He has also produced splendid teams in other lines of sport.

The 36th Pursuit won the post basketball championship in competition against 3 other Pursuit Squadrons, 3 Bombardment, 2 Service and 1 Airship Squadron and the Flying Cadet Detachment.

San Antonio Air Depot, Duncan Field, Texas.

The monthly Control Area supply and engineering conference at this Depot on March 5th was attended by the following officers: Capts. F.D. Lynch, Raymond Morrison, 1st Lt. Wm. T. Hefley, 2nd Lts. H.W. Grant, J.P. Newberry and J.F. Thompson, Jr., of Brooks Field; Capts. T.L. Gilbert, R.C. MacDonald and H.R. Yeager, Kelly Field, and Capt. E.R. McReynolds, Randolph Field.

Visiting pilots ferrying planes back to various activities included Capt. Myron R. Wood, Randolph Field, with an O-19E for the Colorado National Guard; Capt. C.A. Horn, Instructor, with an O-38 for the Arkansas National Guard, Little Rock, and Capt. A.I. Ennis, Instructor, Minnesota National Guard, with an O-38 for that activity.

First Lieut. Max E. Warren, on completion of his tour of duty in Panama, and upon expiration of two months' leave, will report here for duty.

Lieut. J.E. Hicks piloted civilian mechanics from the Depot to Canyon, in Northwest Texas, to dismantle and ship to Fairfield Air Depot a P-30 forced down by one of the heavy dust storms which have been all too frequent of late in the West and Middle West. Lieut. L.R. Dawson, pilot of the P-30, and Capt. H.G. Montgomery, passenger, both of Selfridge Field, escaped injury.

In the absence of Capt. Ames S. Albro, Technical Supervisor for this Control Area, now on sick leave, the technical inspection of the Texas and Colorado National Guard Air Corps units was made by Capt. E.D. Perrin, Assistant Engineer Officer of the Depot, who was accompanied by Master Sgt. J.J. Fitzpatrick.

Recent visitors at the Depot were Major Vernon L. Burge, of the Tactical School, Maxwell Field, formerly on temporary duty here; Capt. B.S. Thompson, Commanding Officer of Hensley Field, and Major Wm. C. Lewis, Air Reserve, of Oklahoma City, Okla. The last named officer is the U.S. District Attorney at Oklahoma City. Captain Thompson conferred on matters pertaining to airplanes of the Organized Reserves at Hensley Field.

Marshall Field, Fort Riley, Kansas.

Flight D, 16th Obs. Squadron

The officers here are making exceptionally good progress in instrument flying. Flights have been made to surrounding towns and the pilots under the hood generally flew the selected course with a fair degree of accuracy. Our C-25 does not have all of the instruments that are installed on a regular instrument flying ship, but we are making the best of the situation.

Bowling is a popular sport at this post, the organization being represented by teams in the Officers and Enlisted Men's Leagues. Our champion bowler, Master Sgt. Arnold Ruef, whose average score is 177, contributed his bowling technique to the Fort Riley team which defeated the Fort Leavenworth five.

Material Division, Wright Field.

Major John N. Joyce, Air Reserve, of Toledo, Ohio, recently completed two weeks of active duty. During the War Major Joyce, then a 1st Lieut., was in the Spruce Production Division of the Bureau of Aircraft Production. While on active duty, in addition to the training given him by the Industrial War Plans Section, he assisted the Chief of the Technical Data Branch in the preparation of historical data on certain wooden propellers which are on exhibition in the Army Air Corps Museum here.

Pittsburgh, Pa., Airport.

Captain Corley P. McDarment, Air Corps, Commanding Officer of the Pittsburgh Airport, recently addressed a meeting of the American Society of Mechanical Engineers, in which he touched upon newest developments in aeronautical engineering. He referred to planes in process of development which wind tunnel tests indicated would attain a speed of 550 miles per hour with the aid of a 2500 h.p. motor. "These are not completed yet," he said, "but my observation has been that the inventions which work on the blueprint in a few years become an accomplished fact."

Referring to the newest Army Bomber with its interesting attachment whereby the wheels can be pulled up into the fuselage, thus increasing its speed from 20 to 30 miles per hour, Captain McDarment stated:

"Its only difficulty is that pilots frequently forget to let the wheels down before they land, with accompanying disaster. To prevent accidents, a red light in the cockpit shines when the pilot prepares to land, and it merely remains for him to figure out what the signal means. If he still forgets, a bell begins ringing in his radio, and the sound of harps will certainly remind him to let down the wheels. If this doesn't work, an ordinary pickhandle with a boxing glove on one end poised on a coiled spring is the last resort."

Captain McDarment read several propositions advanced by aspiring inventors - planes which would carry 15 full-grown men in the best of health with a 25 horsepower motor, and rubber-winged planes to stand the wear and tear of crashes.

Michigan National Guard.

A public address system is being installed in the hangars of the 107th Observation Squadron, Wayne County Airport, to provide band music for official ceremonies, drills and inspections. Speakers, installed on the roof of the hangar, will carry well out over the field. It is expected the system will be ready for a trial at the next drill.

The annual Military Ball, held in the Naval Armory, Detroit, early in March, was an outstanding event and brought together many notables from all parts of the State. An attendance of over two thousand was recorded.

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LIBRARY NOTES

Some of the more interesting Books and Documents Recently Added to the Air Corps Library

D 00.12/123 No. 2-35. Aircraft magnetic compass - Effect of magnetic material and electric on Compass Deviations, by Bureau of Aeronautics, Navy Dept., March 7, 1935, 8p. (Technical Note 2-35.

C 21 France 4. The Perpetual crisis of our military aviation, by Pierre Etienne. Paris WU, Nov. 14, 1934. 2p. From suppl. of WU, Nov. 14, 1934. Refers to the continual changes in organization, program, equipment and Chiefs during the last 15 years in France. French text.

D 52.16/32. Perils of pure speed, by Christian de Caters. Paris, Miroir du Monde, Nov. 17, 1934. Takes up question whether the limit will be fixed by human or material resistance. French text.

623.74/M59. The gas war of 1940, a novel, being an account of the world catastrophe as set down by Raymond Denning, the first Dictator of Great Britain. London, Scholartis Press, 1931, 302p. An account of a world war that began on Sept. 3, 1940, and ended within the week, and in that short time brought mankind to the brink of destruction.

629.1341/B39. A Girl Flies Around the World, by Elly Beinhorn, Berlin, Hobbing, c1932, 217p. A book of travel rather than a contribution to aeronautics. Nice illustrations. German text.

940.5/L96. The Coming War, by Gen. Ludendorff. London, Faber, 1931. 176p. Ludendorff's book is a warning to his people against being led into a war that would mean certain destruction to them.

Selected Magazine Articles

The magazine "Revue du Ministere de l'Air" is intended primarily for use of personnel of the Air Ministry to keep them informed on technical, tactical and current matters in aviation. Articles in the Jan. 1, 1935, issue, the first one received, include -

Crossing the South Atlantic, by Jean Mermoz.
Examination for Aerial Navigation at the Advanced School of War in 1935 (Air Army)
Blind Flight.

Are Aircraft Carriers Doomed for Service in the Next War, by Andrew R. Boone, Popular Aviation, April, 1935.

Pacific Preview; Pan American Airways forms a new division, by Daniel Sayre, Aviation, March, 1935.

INSPECTION DIVISION NOTES

At the request of the Army Air Corps, a special conference was organized by the National Advisory Committee for Aeronautics for the purpose of standardizing the terms used in air navigation. The conference was organized with representatives of the War, Navy and Commerce Departments, and the National Advisory Committee for Aeronautics.

The Chairman of the N.A.C.A. transmitted the 'Nomenclature on Air Navigation,' prepared by the special conference on air navigation terms, and recommended that it be adopted as standard for use in the War Department. This recommendation was approved by the Secretary of War, March 27, 1935.

A few of the standard terms are:

"Air Navigation.- The art of determining the geographical position, and maintaining desired direction, of an aircraft relative to the earth's surface by means of pilotage, dead reckoning, celestial observations, or radio aids.

Note: The term 'avigation' has been suggested but it is considered unnecessary and undesirable."

"Celestial Navigation.- The method of determining the geographical position of an aircraft by observation of celestial objects."

"Dead Reckoning.- The method of determining geographical position of an aircraft by applying the track and the ground speed as estimated or calculated over a certain period of time from the point of departure or from the last known position. Abbreviation: D.R. D.R. position is indicated by an X."

"Pilotage.- The method of conducting an aircraft from one point to another by observation of land marks, either previously known, or recognized from a map."

"Radio Navigation.- The method of conducting an aircraft from one point to another by radio aids, such as the radio beacon, radio direction finder, or radioed bearings."

The nomenclature of Air Corps Circulars will be corrected to agree with the standard nomenclature when they are revised.

Main Fuel Tank, P-12D Airplane.

From time to time reports are received in this office of the failure of duralumin gasoline tanks. Usually, a failure is a result of a leak developing along a seam or around a rivet head. A particular report from one of the Air Corps stations follows:

"The tank was leaking profusely in the lower center of the back wall, where the baffle plate is riveted to the outer shell. Visual inspection did not reveal any rivets loose, but several minute cracks were found. No members of the fuselage were bearing against the tank at the area of leak. The tank was found to be mounted securely and correctly."

Forced Landing - C-9 Airplane.

An interesting report recently received from one of the fields describes a forced landing of a C-9 airplane, shortly after the take-off. The center engine stopped completely shortly after leaving the ground. The pilot, however, was able to return to the airdrome where he landed. A bad fire had started beneath the disabled engine but fortunately it was extinguished without serious damage to the airplane. The Engineering Report indicated that this airplane, in which a gravity fuel system was used, had on several previous occasions experienced a partial failure of one of its engines shortly after the take-off. The cause of engine failure has, as yet, not been determined but the fire was believed to have resulted from excess gasoline discharged by the accelerating pump, possibly due to a back and forth motion of the throttle in an effort to restart the engine. The gasoline running into the carburetor air scoop may have been ignited by a slight back fire not noticeable to the crew.

The light coating of oil placed on propellers daily in accordance with existing regulations serves a double purpose. It, of course, protects the surface but it also has a tendency to oxidize in any cracks that may be present, making them stand out as dark lines, thus assisting in determination of whether or not any defects exist which would render the propeller unsuitable for flight.

Several activities have reported that the time required to change starters on P-26A airplanes, equipped with P-134C-27 engines, is excessive, due to the inaccessibility of the bottom 3/8" nut, which cannot be safetied or tightened, unless the left carburetor air intake stacks and left magnetic are removed.

The following comments have been extracted from the reply of the Materiel Division to the Unsatisfactory Reports referred to:

"2. A nut, Part No. 521, may be omitted from the lower starter stud, Part No. 641, when installed in the starter, but the nuts on the remaining starter studs will be securely tightened and properly safetied. **

"4. A technical Order on this subject is in the process of preparation."

In reply to a communication to the Materiel Division with reference to difficulties being experienced by the Service in lubricating exhaust valves of radial engines by the injection of 120-second oil, the Chief of the Materiel Division stated:

"This Division has realized for some time that 120 second oil is unsatisfactory for

V-6752, A.C.

use in the rocker boxes. Therefore a large quantity of 3000-second oil was procured. Instructions on the use of this oil can not be published at this time due to the lack of suitable oil guns for this type oil. Tests are now being conducted at this Division on several makes of lubricators to determine which is the most suitable for handling 3000-second oil. As soon as this has been determined, the procurement will be made and technical instructions will be issued covering the use of 3000-second oil."

The following is extracted from a letter to the Chief of the Materiel Division, with reference to the man hours required for the routine 20 and 40-hour inspections of P-26A type aircraft:

"2. The average man hours required for the 20-hour inspection totals 23:35. However, it appears that approximately 3:00 of this time are required for the removal of exhaust stacks to permit checking backlash and for the removal of about 100 cowling screws to permit inspection of the angle assembly, main tank supports. * * * "

The Chief of the Materiel Division replied as follows:

"a. The 20-hour inspection of main tank support fittings referred to in paragraph 2 can soon be eliminated as new steel fittings are being manufactured at one of the depots and will be installed as soon as they are available.

"b. The reference to removal of exhaust stacks to permit checking back lash evidently pertains to the magneto inspection called for in paragraph 6b, Technical Order O2-1-36. The P-26A's should all be equipped with engines having magnetos with the required gear changes made by the manufacturer. Paragraph 2, Technical Order O2-1-36, also requires the installation of new gears before any unmodified magnetos are installed as replacements. The inspection for back lash is therefore unnecessary where magnetos are equipped with the new aluminum-bronze and hardened steel gears, and Technical Order CC-20 (page 21) should be waived accordingly. A survey will be made to determine if all magnetos have been changed, so that Technical Orders O2-1-36 and O2-1-35 can be modified to eliminate unnecessary inspections of any V-AG installations. Incidentally, it will be noted that paragraph 5, Technical Order O2-1-36, provides a means for identifying by external markings, the magnetos that have had new gears installed."

The following difficulties have been reported in recent Unsatisfactory Reports:

Casings, Streamline, 2 1/2": Casings installed on P-26A airplane. Upon inspection, casing was found to have a ridge formed on inside, approximately 10" long, running lengthwise, which had rubbed on the tube and had worn the tube sufficiently to weaken it.

Reply to UR: Examination of the casings submitted shows the unsatisfactory condition to be due to a manufacturing defect. The inside ply of the casings apparently wrinkled after being placed in the mold and was cured in that condition. This is sufficient cause for rejection and your stock should be inspected and those found with similar defects should be disposed of.

Carburetors, NAYSC: In flight, pilot found it impossible to reduce the speed of the engine by the use of the throttle. Investigation showed that the economizer needle seat was loose and caused the malfunctioning of the carburetor.

Cock Assembly, Fuel, Type K-2: The stem assembly, fuel cock, as shown on this drawing, under Part No. 34B3828, is not part of the K-2 Fuel Cock. It is believed that this stem will only fit the type K-1 Fuel Cock, as shown on Drawing 34B3478.

Reply to UR: The earlier type K-2 Fuel Cock Assemblies, which total approximately 50, were procured from two sources. It is the opinion that an attempt had been made to install the stem assembly removed from one make of fuel cock into the other, in which case difficulties, such as reported, would be encountered. However, stem assembly, Part No. 34B3828, can be used in either the type K-1 or the K-2 Fuel Cock Assemblies that were manufactured in accordance with Air Corps Drawings 34B3478 or 34B3479, the latter prepared to incorporate the desired features of the two non-standard type K-2 Fuel Cock Assemblies, previously mentioned.

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AIR CORPS



NEWS LETTER

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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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PROPELLER FAILURE UNDER NEW FORM OF ANALYSIS

By Lieut. H. H. Couch, Air Corps

A strange problem presented itself to the Air Corps Materiel Division during 1934 in the repeated failure, both in military and commercial service, of metal propellers built from materials whose endurance stresses were well above the computed stresses under which failure in operation occurred. For example, aluminum alloy propellers with an endurance limit of 12,000 pounds per square inch failed under computed operating stresses of 3,000 pounds per square inch. Likewise, hollow steel propellers, the endurance limit of whose material was 40,000 pounds per square inch at the point of failure, had failed at computed stresses of 15,000 pounds per square inch. Here was a technically puzzling situation, the solution of which offered to engineers something of a problem. Clearly, the problem was not one of simple stresses.

The question arose as to whether some form of vibration could possibly be responsible for these failures, and it was decided that the only determination of this point lay in a study of the various types of vibration possible in aircraft propellers. This study the Materiel Division decided to undertake.

A propeller may be defined as a tapered twisted beam made up of thin airfoil sections. The blade deflects easily about a neutral axis that is almost parallel to the chord of the airfoil section and is rigid about an axis at right angles to the neutral axis. For the excitation of vibration, the following plan was tried:

The assembled propeller was suspended in shock absorber cord of such elasticity that a low natural frequency would result. A rotating eccentric weight driven by a small air motor was mounted on the front of the propeller hub so that the plane of rotation of the weight passed through the center line of the propeller blade. The speed of the motor was then gradually increased until violent vibration resulted.

Under the vibration forces at various frequencies it was found that the action of the blades was similar to that of reeds. The tips showed a large amplitude of movement, while certain stations or nodes on the blades remained practically stationary. These nodes were located by a unique method. Fine wood

dust or sand was shaken on the blades and results noted. When a resonant vibration frequency of the blade was reached, the dust or sand completely worked off the blades except at the stationary nodal points where a narrow band of it remained. Thus were the areas of weakness definitely located. By vibrating the blades for several hours with the air motor, tip failures occurred that were almost identical with those obtained in flight. These failures invariably occurred in the near vicinity of the node nearest the tip.

A study of all Air Corps propeller failures since 1929 revealed the fact that most of the failures occurred on engines having crankshafts in which the natural frequency at the crankshaft could be excited by engine explosion frequency. An instrument developed by F.L. Prescott, of the Materiel Division, has proved very valuable for determining resonant crankshaft conditions. A crankshaft having a bad torsional whip or vibration first manifests itself in galled rear cones. If the propeller blade has a resonant frequency that coincides with the crankshaft frequency the result is usually a tip failure in the near vicinity of the node nearest the tip. These failures usually occur between 50 and 150 hours of operation.

In cases where the blade resonance frequency does not coincide with the frequency of a crankshaft that is operating under bad resonant conditions, the result is usually a blade failure near the hub, a hub failure, or a crankshaft failure. Resonant frequency in the blades can also be excited by blades passing too near objects such as a mud guard or the side of the fuselage.

A method of determining the type and frequency of vibration of the blades and the actual stresses in the blades under flying conditions is being developed by Materiel Division engineers. With the knowledge now at hand it would have been possible to predict practically all of the failures of service type propellers that have occurred in the Air Corps since 1929. In several cases it has been necessary to change propellers and restrict engines to a specified range of operation to prevent failure.

Every possible effort is being made at V-6766, A.C.

the present time to obtain new equipment on procurement that will be free from dangerous crankshaft and propeller vibrations in the normal operating ranges of engine r.p.m. used in flight.

A more detailed study of the types of vibration possible in aircraft propellers is contained in Air Corps Information Circular No. 683.

Editorial Note: Lieut. H.H. Couch, the author of the above article, under whose direction the method of vibrational testing of propellers was originated and developed, has been at Wright Field with the exception of a few months since 1929, when he reported to attend the Air Corps Engineering School. Graduating in 1930, he was assigned elsewhere for a short period, and returned to the field in December of the same year. He served as an American representative to the Handley Page Co. in England during the World War, and saw flying service elsewhere in Europe. He holds the degree of B.S. in Aeronautical Engineering from the University of Michigan (1922) and the Army ratings of airship pilot and balloon observer. His contribution to aeronautical science in the new test methods described above is among the important ones of recent years.

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FRANCE LEANS TOWARD MULTI-PLACE PLANES

In a recent lecture to air reserve officers taking an advanced training course, General Denain, French Air Minister, stated that for reasons of economy, the Air General Staff adopted the idea of a multiplace combat plane. "There is no doubt that after six months of war a very great specialization in the various kinds of aviation would be attained, as the question of money, in time of war, does not matter," the General said, adding that for the present the French had the multi-purpose plane fulfilling the requirements of the program of November, 1933. For interception, they have the gun-engine single-seaters with a speed of over 400 Km/h (248.5 m.p.h.).

General Denain then referred to the idea, inspired by the Navy, of a "contact" plane - multi-seaters - capable, in view of their special construction, of making contact with enemy units marching against an objective without attacking them (even refusing combat), but which, thanks to their speed, would keep not only land stations but also interception units taking off a little later, informed of the enemy's moves via radio.

General Denain stated that the Martin bomber has a speed of 325 Km/h (192 mph) at 1500 m., but has not the same ceiling as the Bloch 200 (whose speed is 295 Km/h (183 mph), nor its complete defense. The Air Minister said France would have 200 Blochs by the end of 1935, which

would be superior to the German Junkers 52 and to the American Orions. The Bloch carries 1100 Kg. (2424 lbs.) of bombs for a distance of 1000 Km. (621.37 miles).

The Minister then spoke of recent orders to be delivered during the year, mentioning the Farman 221 night bombers, the Aniot 140 multiple fighters, the Breguet 41 combat planes, the Devoitine equipped with a cannon, the Potez 54 combat plane, the Mureaux reconnaissance type and the Liore 205 bombers.

"At the end of 1935, the Air Army will have 600 modern planes, and at the end of 1936, 1,000 first-line planes, as follows: 350 bombers, 340 fighters, and 310 information planes. By comparison with the present number (given as 1850), the speed and radius of action will have been doubled."

General Denain said the personnel would be trained at the Versailles Air School. The lowering of age limits will permit promotion of younger officers to the higher ranks. The new organization of the reserves and the perfecting of present training methods have already given satisfactory results. From 1936 on, the personnel of the reserve squadrons will be mobilized with the unit to which they are attached for training. A statute for reserve personnel will be based on that for regular air personnel.

France will be divided into three air regions (Paris, Tours and Lyons), plus a fourth one in North Africa (instead of the present five). This will facilitate general organization already perfected by the change from 11 regiments to 25 wings.

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INSTRUMENT FLYING AT OLMSTED FIELD

The one airplane at Olmsted Field, Middletown, Pa., which is completely equipped for instrument flying, a BT-2B, has been very much in demand since the advent of warm spring weather. This airplane is equipped with an instrument flying hood, a complete set of flight instruments, intercockpit phones, and two-way radio, providing all the necessary facilities for navigation by instruments.

This station is fortunate in that a Department of Commerce radio beam is located seven miles from Olmsted Field, one beam of which extends directly over the field. Many of the pilots of this station have attained a degree of proficiency in navigation by radio such that they are able, while under the hood, to proceed to the field from any given point within range of the radio beacon, close the throttle while still under the hood, then open the hood and glide to a landing without further use of the engine; this, despite the fact that Olmsted Field is 7 miles distant from the radio beacon.

OUR NEW ARMY POST

By Captain H. B. Nurse, Q. M. C.

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With the development and expansion of the Army Air Corps, new Posts for the housing and training of this highly technical branch of the armed service have been made necessary. Invariably, these Air Posts have, through necessity of topographical requirements, been developed along entirely new lines, and in no sense are they a continuation of, or addition to, an existing, and in many cases, antiquated, Army Post, as so often occurs in the expansion of other Line Organizations.

Eliminating the necessity of building to harmonize with existing facilities, it has been possible to eradicate previous standards of an antiquated origin, and start from the ground up along an entirely new line of thought. The Quartermaster Corps entered into these new problems with enthusiasm and a determination to develop along the line of most modern "city planning" a group of new Air Posts, which are fast proving to be models worthy of admiration from the lover of good architecture, as well as the efficient and most exacting municipal engineer.

In each case the location of sites for these new Posts has been most admirably selected for the purpose intended; especially is this true in the case of Hamilton Field, the Army's newest Air Field.

To the north of the sparkling waters of San Francisco Bay lies a dreamy and enchanted playground where, for over a hundred years, people who love to live have found escape from the busy world, and with their precious heritage of gay leisure the present population of this romantic spot fairly radiates hospitality quite reminiscent of the old Spanish Grandee, which contributes a charm and an appeal hard to resist. It is within this most favored setting that Uncle Sam has selected a site for the building of Hamilton Field.

In the heart of Marin County, only one hour from gay San Francisco, the world's most cosmopolitan city, lie the wood-studded hills bordering the acreage where, within the past two years, has been built this most modern Air Field, an accomplishment of the Construction Division of the Quartermaster Corps. It is the charm of this place which caused the Chief of Air Corps, on his recent tour of inspection, to exclaim with unrestrained enthusiasm, "This is the most beautiful Post in the entire world!"

Hamilton Field originated with a plan launched in 1928 by the War Department to establish an Air Field for a bombing group at some point on the West Coast.

Early in 1929, prospective cities

were inspected by a board of officers, and of the various sites suggested, the one located in Marin County was finally approved, principally because of its central location between our Canadian border and our Mexican border. Other reasons contributing toward the selection of this site were the facts that it is sheltered from the sea by a low range of mountains and is far enough inland to be free from gun-fire of an enemy's fleet; that it is adjacent to the principal manufacturing district of the West Coast; that it is remarkably free from fog, the weather being never too hot and never too cold, which allows a maximum number of flying hours throughout the year.

On July 3, 1930, President Hoover signed the "Kahn" Bill which provided the initial appropriation of \$1,412,117.87 for construction.

Captain Nurse arrived in Marin County on April 28, 1931, to assume the duties of Constructing Quartermaster in charge of the planning and the construction of this Air Field. Considerable delay was caused in securing title to the property, but through the untiring efforts of the public-spirited business men of Marin County, by whose patriotic action the tract of land was donated, the title was finally cleared up and this new Air Field became a reality when on March 17, 1932, the site became the property of the United States, as the deed was turned over to the War Department.

This delay, although aggravating at the time, proved a blessing in disguise, in that it gave ample time to thoroughly plan every facility and iron out inequalities that are so often encountered in vast engineering problems of this nature where speed is paramount.

The new Air Base was officially designated as "Hamilton Field," in honor of First Lieutenant Lloyd Andrews Hamilton, Seventeenth Aero Squadron.

Lieutenant Hamilton was awarded the Distinguished Service Cross by the United States Government for extraordinary heroism in action at Varssonaere, Belgium, August 13, 1918. Leading a low bombing attack on a German airdrome 30 miles behind the lines, he destroyed the hangars on the north side of the airdrome, and then attacked a row of enemy machines, setting fire to three of the German planes. He then turned and fired machine gun bursts through the windows of the Chateau in which German pilots were quartered, twenty-six of whom were afterwards reported killed. Lieutenant Hamilton was later killed in action near Lagnicourt, France, on August 26, 1918.

On September 26, 1933, another incentive was given to the construction program when an additional amount of

\$3,462,183.41 was provided under the Public Works appropriation, making a total appropriation to date of \$4,874,302. Hamilton Field provides accommodations for 79 commissioned officers, 70 noncommissioned officers, and 200 enlisted men. The reservation comprises a total of 928 acres. Approximately 160 acres lie in the form of a low range of hills, which make an ideal residential section. Beyond this range of hills and San Pablo Bay, lie 768 acres of flat, level land, which is utilized for a landing field approximately one mile square. This low level land is two feet below mean low tide, but is well protected by a substantial levee that has been in existence for over thirty years.

Originally the waters of San Pablo Bay lapped the foothills that now form the residential area, but during the placer mining operations in the Sierra Nevada Mountains, mine tailings were swept down the American and Sacramento Rivers through Jarquinez Straits and swirling into the more placid water of the Marin shores, they settled and gradually built up this area, which later on some enterprising individual reclaimed by the construction of a levee at its outer edge and by pumping the excess water up into the Bay.

On entering Hamilton Field, one passes down a wide palm-lined avenue, leading to Headquarters, established in a building which is a replica of the old missions of early California; with its deep arched loggia, one might expect to catch a glimpse of the dark-robed figure of a Spanish Padre strolling with prayer-book in hand, and at eventide to hear the pealing of bells calling the faithful to the hour of vespers.

Just beyond Headquarters, one will find the technical building, all in gleaming white, relieved by the bright green of abundant semi-tropical shrubbery. Modern Barracks, each to house two hundred men, and a long double row of Hangars of gigantic proportion, are the last word in appointment.

Literally, Hamilton Field is a little Spanish Village just sprung from the hills. Here, beauty, comfort, and utility have been combined, looking toward the health, social intercourse, and contentment of its inhabitants. Homes built of individual character, without the monotonous similarity of the usual army post, tree-lined boulevards, shaded lawns, and the informal but attractive winding of streets through the natural contours of the hills lend charm.

The houses, most modern in appointment, yet truly Spanish in character, are not placed in stiff and dignified rows, but informally scattered so as to take advantage of the wonderful vista of San Pablo Bay to the east, across whose placid waters the Contra Costa shores are visible, or to the West, overlooking the majestic Coast Range Mountains, where

the lofty peak of Mount Tamalpais is superimposed.

As a fitting crown to a high promontory in the residential area, a rambling building, that might have been the hacienda of some early Spanish Grandee, is the Officers' Club, with its complete facilities, including lounge rooms, game rooms and a model kitchen. Occupying one rambling wing are several suites of rooms where visiting officers and their families may be very comfortably put up. Within the environments of the spacious patio surrounded by the wings of this building, one listens for the strumming of guitars played by some bold Caballero to his dark-eyed Senorita; though gay fandango and the fiesta here have given way to the more modern dancing, yet romance and gaiety still abound.

Plants and shrubs have been propagated in our own nursery, established at the beginning of the project.

When the newly assigned officer arrives at Hamilton Field with his family, he will find not only a modern and up-to-the minute home awaiting him, but also a completely beautiful lawn, with a profusion of shrubs and flowers, for which California is so well famed. In fact, nothing has been spared by the Quartermaster Corps in making this army post a real home for its occupants.

Additional information on Hamilton Field, furnished by the News Letter correspondent, is given below, as follows:

Hamilton Field is a seaport as well as an airport. Three miles of canal connect it with the deep water of San Pablo Bay which gives access to the Pacific through the Golden Gate. This canal was dug as part of the \$5,000,000 construction project at the Marin County field. Captain Howard B. Nurse, Construction Quartermaster, believes that this barge canal will save the government thousands of dollars, due to the fact that the government receives water rates from the railroad which hauls freight into the post. Otherwise the canal might be used at any time as there is small wharfage at the terminus near the boathouse.

The Hamilton Field Navy has a crew of four men from the 70th Service Squadron. Sergeant James M. Hotalen and Privates Lawrence Brogan, Ellis A. Larsen and Thomas Dick man the three boats. The J-40 is used as a crash boat to rescue personnel of aircraft who may have the ill fortune to nose dive into the Bay. The P-7 is in drydock. A sea sled with a reputed speed of 35 miles per hour is the only fast water transportation. The other two boats will make about 15 miles per hour.

The whole setting of Hamilton Field is redolent of early California. Not only the architecture of the buildings but also the landscaping shows the influence of the early Dons. The plant life

selected includes 6,000 trees of the early native flora. Among these are conifers, ash, palms, walnut and bamboo. Second Lieut. Robert E. Cron, Jr., Asst. Const. Q.M., is in charge of this work.

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INSTRUMENT FLYING IN HAWAII

In September, 1934, at the direction of the Wing Commander, Colonel Delos C. Emmons, a Wing Instrument Flying School was established for all pilots stationed in the Hawaiian Department. Realizing the importance of instrument flying training to Air Corps officers, Colonel Emmons desired that the proficiency of the pilots in the 18th Composite Wing in this type of flying be brought to the highest possible standard. He selected Lieut. Elmer J. Rogers, Jr., of the 5th Composite Group, Luke Field, to direct this school, because of that officer's past experience as instructor in instrument flying.

Lieut. Rogers assisted in the early experiments which led to the establishment of the Instrument Flying School at Brooks Field, Texas, in 1929, taking charge of this school at a later date, and thereafter establishing such schools at other posts, including Chanute and Mitchell Fields, and lecturing on the subject to a number of National Guard Squadrons.

It was Colonel Emmons' plan that one pilot be selected from each of the tactical squadrons of the 5th Composite Group at Luke Field and from each of the tactical squadrons of the 18th Pursuit Group at Wheeler Field, to act as assistants to Lieut. Rogers and as the Instrument Flying instructors for their respective squadrons.

Considering officers who possessed the qualifications and experience which made them best fitted to act as instructors in this type of flying, Lieut. Rogers selected as his assistants Lts. Gilkey, Morrow, Starkey and Ladd, of the 5th Composite Group, and Lts. Winn, Nelson and Keillor of the 18th Pursuit Group.

Going a step beyond the requirements as set forth by the Chief of the Air Corps for this phase of training, Col. Emmons set as the goal to be attained by this Wing, 20 hours of instrument flying for each pilot. To date, every pilot who had not had a basic course in instrument flying has received a 10-hour basic course, completed within 42 days, as required by Air Corps Circular 50-1, under the guidance of a thoroughly qualified instructor, and has been given a diploma, signed by Colonel Emmons, attesting to this fact. Every pilot who had received such a basic course at some other station received a refresher course, varying in length from 30 minutes to 5 hours.

Toward the accomplishment of the goal of 20 hours per pilot for the Fiscal Year, one squadron has already completed that amount; two other squadrons are ahead of schedule, and the remaining squadrons have progressed sufficiently far to warrant the assumption that they will have completed this amount before July 1st next.

The officers of the Wing have been eager to take these courses of instruction, and in some instances officers who had already received a basic course at another station requested permission to undergo a second course of instruction. It is due to this fact, perhaps more than to any other, that the progress in the Wing School has been so gratifying.

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GENERAL SIMONDS INSPECTS LANGLEY FIELD

The Deputy Chief of Staff, Major-General George S. Simonds, arrived at Langley Field, Va., from Washington in a Ford Tri-motor plane on March 27th. Immediately following his arrival, an aerial review was staged in his honor by the Second Wing, General Headquarters Air Force, after which an 18-plane Pursuit squadron, led by 1st Lieut. C.G. Goodrich, performed a spectacular combat drill as a team of elements, team of flights and squadron team in "String" formation.

General Simonds departed the following day to continue his inspection trip of United States Army Posts, the proposed route out of Langley Field being: Pope, Maxwell and Barksdale Fields.

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TACTICAL TRAINING IN HAWAII

"Of a distinct advantage to the flying personnel of the 18th Pursuit Group," says the News Letter Correspondent, "is the opportunity we have of frequently participating in Field Exercises and Maneuvers of the Hawaiian Division. The Division, itself, enjoys the distinction of being the only completely assembled organization of that designation in the United States Army.

During the Maneuvers in December, 1934, the entire Division took the field for the period of a week, conducting comprehensive problems under actual field conditions.

The Air Force was called on to perform both day and night missions, calling for Pursuit, Attack, Bombardment and Observation aviation. Due to the heavy tropical growth along the trails and the excellent instruction previously received by personnel of the Division with reference to concealment, the problems presented were most difficult. However, the training received was most instructive, and many valuable tactical lessons

were learned.

In view of the desire of the Chief of Staff of the Army to familiarize the Air Corps with the functioning of the various ground branches of the military service to a greater extent than now practiced, few stations are better equipped for such an excellent opportunity than is Wheeler Field.

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PRAISE FOR 41st DIVISION AVIATION

Praise of an exceptional nature was given the 41st Division Aviation, Washington National Guard, by Major-General Paul B. Malone, recently appointed Ninth Corps Area Commander, on his inspection of military units at Spokane, Wash.

"This is the finest National Guard aviation setup that I have ever seen," Gen. Malone stated. He was especially pleased with the new \$102,000 hangar at Felts Field, about which he inquired particularly, especially into the finances necessary to its construction. He inspected Felts Field closely, asking many questions about the size of the airport, prevailing winds and drainage.

During the course of his hour's visit at the airport, he was told about Spokane's ambition to secure a Regular Army Air Corps depot under the National Air Frontier Defense program being considered by Congress.

General Malone indicated a real interest in the preparation of accurately scaled air maps for fire-control purposes, and stressed particularly the importance of contours on these maps.

His query as to whether the organization had prepared such a map for the 41st Division encampment in June at Fort Lewis and Camp Murray was answered in the affirmative.

At a banquet in the evening, more than 300 citizens of Spokane honored the General with their presence and heard a most stirring presentation of military importance at this time.

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FLYING CADET STILL MISSING ✓

Flying Cadet Milton A. Lampl, Air Corps, mysteriously disappeared during the night of March 10th, while en route to Selfridge Field from Cleveland Airport, Cleveland, Ohio, on an aviation training flight.

Cadet Lampl had departed from Selfridge Field on March 9th, flying to Chanute Field, Ill., Schoen Field, Indianapolis, Ind., and to Cleveland, where he remained overnight. Departing from Cleveland at about 7:00 p.m. the next day, with weather conditions indicated as fair. The ceiling was about 800 feet and it was raining, but conditions were indicated as gradually becoming better toward Detroit. Shortly following his departure, the

weather became very bad, and at Selfridge Field a heavy ground fog set in. The P-26 flown by Cadet Lampl was equipped with two-way radio and night flying apparatus, but nothing was received from him indicating that he attempted to use his radio to get in touch with the command set at Selfridge.

At about 10:00 p.m., Lieut. Harlan T. McCormick, the Station Operations Officer, broadcast the following message: "Fly West and bail out." Whether Cadet Lampl received this message is doubtful, but the entire First Pursuit Group spent two whole weeks scouring the countryside around Cleveland and between that city and Selfridge Field, and as far west as Kalamazoo, Mich., in the hope that some trace of the plane might be found. Thus far, however, the search has proved fruitless. The Group continues to dispatch airplanes to run down clues phoned to the field.

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REORGANIZATION UNDER WAY AT MARCH FIELD ✓

Much of the time and effort of the personnel at March Field, Riverside, Calif., has recently been spent in reorganizing to meet the requirements for the GHQ Air Force. Unlike most stations, the new GHQ set-up changed the basic Air Force designation of the principal organizations at this field. The 17th Pursuit Group was changed to the 17th Attack Group.

In addition to organizing the 1st Wing Headquarters, work has now been completed in reassigning personnel to the new tactical units composing the 17th Attack Group. The only things remaining to complete the change are the confirmation of orders of officers for the various command and staff functions and receipt of the new planes with which the new Attack squadrons are to be equipped. Enthusiasm for the change has been somewhat dimmed by notification that the new Northrup Attack planes will not be ready for delivery at March Field until some time in March, 1936. In the meantime, the present equipment (Boeing P-26's) are rapidly being sent to the Boeing factory, where flaps are being installed to reduce landing speeds.

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GENERAL FOULOIS VISITS RANDOLPH FIELD

Major-General Benjamin D. Foulois, Chief of the Air Corps, arrived at the Air Corps Training Center on March 29th and spent the next three days inspecting Randolph and Kelly Fields. His many friends were glad to welcome him again.

On Sunday morning, General Foulois attended a sacred concert in the Randolph Field chapel, given by 44-voice choir of the Texas Lutheran College. After the services he inspected the chapel and expressed his satisfaction.

BRIGADIER-GENERAL HENRY H. ARNOLD

Twenty-four years ago this month, a young Army Lieutenant arrived at the thriving little city of Dayton, Ohio, on a mission which proved to be the turning point in his army career. He had been ordered by the War Department to proceed to Dayton to undergo instruction at the flying school conducted by the Wright Brothers.

Today this same officer, Brigadier-General Henry H. Arnold, Air Corps, occupies a very important position in the military service, being the commander of the First Wing of the General Headquarters Air Force at March Field, Riverside, Calif.

General Arnold is an aviation pioneer in the true sense of the term. When he reported at Sims Station, now the site of the Air Corps Depot at Fairfield, Ohio, he found a barn-like structure which housed several of the early Wright biplanes, with their 40 h.p. engines, their two propellers in tandem, their two seats in front, side by side, and their three control sticks. His contemporaries in those early days of aviation were such well known pioneer aviators as Walter Brookings, Ralph Johnstone, Arch Hoxie and Arthur L. Welsh, comprising the original flying team of the Wright Brothers; Lincoln Beachy, the dare-devil; Claude Graham White, the Englishman; Louis Paulhan, Jules Vedrines and Hubert Latham, the Frenchmen, and last, but by no means least, Lieut. Benjamin D. Foulois (now Major-General and Chief of the Army Air Corps).

During his first year as an aviator, General Arnold made 140 flights for a total duration of 29 hours, a record to be proud of in those early days. The following year the number of flights increased to 209, and he garnered new laurels for the miniature Air Corps by initiating many of the early aviation developments and finally winning the Mackay Trophy. He was the first officer to win this Trophy and, after a lapse of 22 years, won it again.

General Arnold won the Trophy for 1912 by flying over the triangle Washington Barracks, D.C., Fort Myer, Va., and return to College Park.

In the summer of 1934, General Arnold was in command of the flight of ten B-10 Martin Bombers, flying from Washington, D.C. to Fairbanks, Alaska, and return. He was awarded the Mackay Trophy for that year for his leadership on this expedition.

Born at Gladwyne, Pa., June 25, 1885, General Arnold, after graduating from the United States Military Academy, West Point, N.Y., June 14, 1907, was appointed a second lieutenant of Infantry. He was promoted to 1st

Lieutenant on April 10, 1913; Captain, May 20, 1916; Major, July 1, 1920; Lieut.-Colonel, February 1, 1931; and Brigadier-General, March 1, 1935.

General Arnold graduated from the Army Industrial College in 1924, and from the Command and General Staff School, Fort Leavenworth, Kansas, in 1929.

Prior to his detail to the Aviation Section, Signal Corps, in 1911, he served successively with the 9th, 13th and 3rd Infantry regiments. During two years of his service with the Infantry, he was on duty in the Philippines where he conducted a topographical survey of the Island of Luzon.

Following the completion of his flying instruction, General Arnold was assigned to duty at the Signal Corps Aviation School, established in 1911 at College Park, Md., the government having leased a thousand-acre tract of land at that place for use as a flying training school. He was with the school when it was transferred to Augusta, Ga., in the fall, and returned to College Park the following spring.

In August, 1912, he participated in the Regular Army and National Guard Maneuvers in the States of New York and Connecticut, and established several aeronautical records. On June 1st of that year, he established a new altitude record when he piloted a Burgess-Wright airplane to 6,540 feet.

During the latter part of 1912, General Arnold was on duty at Fort Riley, Kansas, observing field artillery firing from an airplane. He was the first military aviator to make use of radio to report his observations. His next assignment was in the Office of the Chief Signal Officer in Washington, and from there he was transferred to the newly established Aviation School at San Diego, Calif., where he served for nearly a year in the capacity of Supply Officer.

Early in 1917, General Arnold organized and commanded the 7th Aero Squadron in the Panama Canal Zone. In April of that year, following America's entry in the World War, he was assigned to duty in Washington and placed in charge of the Information Service of the Aviation Division of the Signal Corps. Upon the creation of the Office of the Director of Military Aeronautics, he was assigned to duty as Assistant Executive. In February, 1918, he was appointed Executive Officer and later as Assistant Director of Military Aeronautics, a position which placed him in direct charge of over thirty flying schools, some 15,000 Air Corps officers and 125,000 enlisted men.

During the early part of 1918, he went overseas on an inspection tour of avia-

tion activities. From 1919 to 1924 he was stationed on the Pacific Coast, the positions he held during that period being District Commander, Western District; Commanding Officer, Rockwell Field, Coronado, Calif.; Air Officer, 9th Corps Area, and Commanding Officer of Crissy Field, Presidio of San Francisco, Calif.

It was during General Arnold's period of duty on the Pacific Coast that a number of very important Air Corps activities were initiated, such as the aerial patrol of the forested areas in California and the Great Northwest, and the refueling duration and distance flights of Captain Lowell H. Smith (subsequently leader of the Air Corps Around-the-World Flight) and Captain John P. Richter.

Following the completion of his course of study at the Army Industrial College, General Arnold, early in 1925, was assigned to duty as Chief of the Information Division, Office of the Chief of the Air Corps, Washington. Transferred to Marshall Field, Fort Riley, Kansas, in March, 1926, he was in command of Air Corps troops at that field until the summer of 1928, when he was assigned to duty as student at the Command and General Staff School at Fort Leavenworth, Kansas. Following his graduation in June, 1929, he was assigned to duty as Commanding Officer of the Fairfield, Ohio, Air Depot, also as Chief of the Field Service Section, Materiel Division, Wright Field, Dayton, Ohio. On July 1, 1930, he was appointed Executive Officer of the Materiel Division.

In November, 1931, General Arnold assumed command of the First Bombardment Wing at March Field, Riverside, Calif., the largest tactical unit in the West. In 1933, when the First Pursuit Wing was formed to replace the First Bombardment Wing, he assumed command of the new organization.

When President Roosevelt ordered the establishment of the Civilian Conservation Corps, March Field was chosen as one of the large concentration points in this program of utilizing a quarter of a million men for various projects looking to the conservation of the natural resources of this country, and General Arnold was appointed commanding officer of 25 camps.

In the operation of the Air Mail by the Army Air Corps, from February, 1934, to the following May, General Arnold was assigned as Officer in Charge of the Western Zone. This was a much more difficult task than his first assignment in connection with air mail operations, when, in September, 1911, he carried the first air mail in the United States from Nassau Boulevard Airdrome, Long Island, to Hempstead, Long Island, a distance of five miles.

In 1918, when the United States inaugurated the first regular scheduled air

mail operation in the world, General Arnold was in direct charge of this activity as part of his duties as Assistant Director of Military Aeronautics.

For his leadership of the flight of ten B-10 Bombing planes from Washington, D.C., to Fairbanks, Alaska, and return, July 19th to August 20, 1934, General Arnold was awarded the Mackay Trophy for the second time in his career as an Army flyer.

On March 1, 1935, General Arnold was assigned as Commanding Officer of the 1st Wing (West Coast) of the General Headquarters Air Force, with headquarters at March Field, and was given the temporary rank of Brigadier-General during the period of this assignment.

General Arnold has the distinction of being one of a few remaining officers in the Air Corps holding the rating known as "Military Aviator." In addition, he holds Expert Aviator Certificate No. 4, and Pilot License No. 29.

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AVIATION PREPAREDNESS PARAMOUNT NEED

In an address of welcome to the First National Intercollegiate Flying Conference held in Washington on April 2nd and 3rd, last, Brigadier-General James E. Chaney, Air Corps, asserting that he considered this conference a most important milestone in the advancement of aviation in the United States, added that the Army Air Corps stands squarely and enthusiastically behind the development of our aviation, whether military, commercial, or sport. "Each of them," he stated, "contributes both directly and indirectly to the advancement of the others and, in so doing, all contribute to our national defense.

Our traditional military policy has been to maintain in peace time a small but highly trained Regular Army, which therefore must be greatly expanded in a major national emergency. The result is that the aviation component of our Army, as it exists today, must also be greatly expanded in a national emergency. That is where commercial and civilian aviation come into the picture and their development, advancement and encouragement in peace time are of the greatest concern to the Air Corps and to the War Department.

A country strong in civil aviation is potentially strong in military aviation. A nation strong in military aviation enjoys a national security that it cannot obtain in any other way, for a strong aviation, by its very existence and its power to retaliate in kind, is the greatest guarantee against demoralizing air attacks upon the great centers of civilian population.

Not only will your organization contribute to our national aviation strength, but also, in the future, from your organization will come the leaders in military, commercial and civilian aviation."

THE NEW AIR CORPS ENGINEERING SCHOOL CLASS

Special Orders of the War Department, recently issued, designated ten Air Corps officers for duty as students at the Engineering School at Wright Field, Dayton, Ohio, for the 1935-1936 course. The officers named below are under orders to report to the Commandant of the Engineering School not later than August 1st, next, viz:

- Captain James B. Burwell, Kelly Field, Texas
- 1st Lt. Frederick R. Dent, Jr., and 1st Lt. Marshall S. Roth, Randolph Field, Texas.
- 1st Lt. William L. Scott, Jr., Langley Field, Va.
- 1st Lt. Paul E. Shanahan, Middletown, Pa. Air Depot.
- 1st Lt. Ralph T. Swofford, Jr., Panama Canal Department. (relieved from temporary rank upon departure from his station).
- 1st Lt. William T. Colman, Philippines.
- 2nd Lt. Howard M. McCoy, Selfridge Field.
- 2nd Lt. Charles K. Moore, San Antonio Air Depot, Durcan Field, Texas.
- 2nd Lt. Edwin S. Ferrin, March Field, Calif.

Captain Burwell is relieved from his temporary rank, effective July 29, 1935.

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ASSIGNMENT OF TACTICAL SCHOOL GRADUATES

Effective upon the completion of their present course of instruction at the Air Corps Tactical School at Maxwell Field, Ala., the Air Corps officers named below have been assigned to stations, as follows:

- To Barksdale Field, La.: Captains Lester J. Maitland, Milo McCune, 1st Lieut. Robert W. Douglass, Jr., 2nd Lieut. Reuben C. Hood, Jr.
- To Brooks Field, Texas: Captain Horace S. Kenyon, Jr.
- To Hamilton Field, Calif.: Captain Oliver K. Robbins.
- To Maxwell Field, Ala.: Captains Ray L. Owens, Samuel C. Skemp, latter officer for duty as a member of the Air Corps Board.
- To Mitchel Field, N.Y.: Major Vernon L. Burge, Captain Evers Abbey, 1st Lieut. William A. Matheny.
- To Kelly Field, Texas: Captain Clarence E. Crumrine.
- To Langley Field, Va.: Captain Ned Schramm.
- To Office of the Chief of the Air Corps, Washington, D.C.: Captain Alvan C. Kincaid.
- To Selfridge Field, Mich.: 1st Lieut. Robert C. Oliver.
- To Wright Field, Ohio: Captains Thomas H. Chapman, Emile T. Kennedy, Rudolph W. Probst, John P. Richter, Stanley U. Umstead.
- To Chanute Field, Ill.: 1st Lieut. Donald W. Norwood, for duty as instructor at Air Corps Technical School.
- To Barksdale Field, La.: Captain William N. Axis.
- To Columbus, Ohio, for duty with Air Corps at Headquarters, Fifth Corps Area: Major William B. Wright, Jr.

NEW INSTRUCTORS AT AIR CORPS TECHNICAL SCHOOL

Five Air Corps officers, under Special Orders of the War Department recently issued, were assigned to duty as instructors at the Air Corps Technical School at Chanute Field, Rantoul, Ill., viz: Captain Oscar F. Carlson, now on duty at the Hawaiian Air Depot; 1st Lieut. Forrest G. Allen, Instructor at the Signal School at Fort Monmouth, N.J., and 2nd Lieuts. Gordon A. Blake, Ivan L. Farman and Charles W. Haas, students at the Signal School.

Captain Carlson is relieved from his temporary advanced rank effective upon his departure from Hawaii.

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CHANGE IN SECOND BOMBARDMENT GROUP COMMANDERS

Effective April 1st, Lieut.-Colonel Willis E. Hale, Air Corps, was relieved from duty as Group Commander of the Second Bombardment Group, Langley Field, Va., and assigned the day following as Executive and Operations Officer of the Second Wing at that station.

Effective April 2nd, Major Charles B. Oldfield, Air Corps, was assigned to duty as Group Commander of the Second Bombardment Group, with the temporary rank of Lieut.-Colonel during the period of this assignment.

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GRADUATES OF COMMAND AND STAFF SCHOOL ASSIGNED

Effective upon the completion of the present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas, the following-named Air Corps officers are assigned to stations, as follows:

- Captain Lowell H. Smith to Mitchel Field, N.Y.
- Captain John R. Morgan and Major William O. Butler to Randolph Field, Texas, the latter to take the course in heavier-than-air flying at the Primary Flying School.
- 1st Lieut. Kenneth N. Walker to Hamilton Field, Calif.

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TEMPORARY PROMOTION OF AIR CORPS OFFICERS

Effective March 29, 1935, the following-named Air Corps officers on duty with the 19th Composite Group, Panama Canal Zone, were assigned to the duties indicated, with temporary increased rank, as follows:

- Captain William B. Mayer, Supply Officer, to rank of Major.
- First Lieuts. Lindsay M. Fawcett, Intelligence and Communications Officer, and James H. Wallace, Assistant Operations Officer, to Captain.

Air Corps officers on duty at the Air Depot in the Panama Canal Department received advanced rank, effective March 30, 1935, as follows:

- First Lieuts. Cornelius W. Cousland, Adjutant, and Henry R. Baxter, Engineering Officer, the rank of Captain; 2nd Lieut. Daniel F. Callahan, Jr., Chief Inspector, the rank of First Lieutenant.

BIOGRAPHICAL SKETCHES OF AIR CORPS OFFICERS

It is contemplated publishing from time to time biographical sketches of Air Corps officers as one of the regular features of the News Letter. At the present time it is thought particularly timely to touch upon the careers of Captains Albert W. Stevens and Orvil A. Anderson, Air Corps.

Anticipating that they will be called upon to take part in the forthcoming Stratosphere Flight, sponsored jointly by the National Geographic Society and the Army Air Corps and scheduled to take place next June, these two officers are now hard at work at the Air Corps Materiel Division, Wright Field, Dayton, Ohio, making careful preparations to insure the success of this year's attempt to penetrate the upper air strata to the utmost possible extent.

It will be recalled that Major William E. Kepner, pilot; Captain Orvil A. Anderson, Alternate Pilot and Scientific Observer, and Captain Albert W. Stevens, Scientific Observer, participated in last year's Stratosphere Flight, which terminated abruptly due to the rupture of the fabric of the big balloon, making it necessary for all three of these officers to resort to their parachutes. It is definitely known that Major Kepner will not participate in the forthcoming flight, due to the nature of the duties he is now performing.

CAPTAIN STEVENS

Captain Stevens, one of the foremost aerial photographers in the military service and one of its most hard-working individuals, was born at Belfast, Maine, March 13, 1886. He received the degrees of B.S. and M.S. at the University of Maine.

Enlisting in the Aviation Section, Signal Corps, in January, 1918, he was commissioned a 1st Lieutenant in that branch of the service on February 15, 1918, and was assigned to duty as a student at the School of Aerial Photography at Cornell University, Ithaca, New York.

Upon graduation from this school, he was assigned to duty overseas and placed in command of the 6th Photo Section, in which capacity he displayed exceptional ability flying over the enemy lines and taking aerial photographs of enemy positions. For this work he received two citations commending him for exceptional devotion to duty.

While overseas, he completed all the training necessary for a qualified Bombardment Observer, and he served in that capacity in bombing raids in enemy territory. Shortly before the signing of the Armistice he was appointed Chief Photographic Officer of the Air Service, First Army.

Captain Stevens, while on duty with the 88th Aero Squadron in the Chateau Thierry Sector, volunteered for and accomplished several particularly danger-

ous and important missions over the enemy lines. He produced among the best aerial oblique photographs made in the United States Air Service, one of his accomplishments being a series of oblique photographs of important points in the area fought over by the First American Army.

He was promoted to the rank of Captain, February 21, 1919.

Upon returning to the United States in August, 1919, Captain Stevens was temporarily assigned to duty in the Office of the Chief of Air Service, following which he served for a short time at Langley Field, Va. Most of his service since the close of the War has been at the Engineering Division of the Air Corps, first at McCook Field, and later at Wright Field, Dayton, Ohio, where he has been engaged in experimental aerial photographic work.

Captain Stevens performed numerous photographic missions in various sections of the United States and has taken aerial photographs of vast stretches of territory. One of the notable photographic missions in his Army career was the taking of aerial photographs of the National Parks in the Great Northwest.

By special permission of the War Department, he accompanied Dr. Hamilton Rice on the latter's exploration tour along the Amazon River in South America during the latter part of 1924 and the early part of 1925.

One of the startling feats performed by him was a parachute jump from a supercharged Martin Bomber flying at an altitude of 24,205 feet, on June 12, 1922.

With Lieut. John A. Macready as pilot of a supercharged Le Pere airplane, which on May 2, 1924, ascended above Dayton to an altitude of 31,540 feet, or nearly six miles, Captain Stevens photographed the greatest area ever included up to that time in a single exposure. Nineteen square miles, covering almost the whole city of Dayton, were shown in the photograph with remarkable clearness, the river, streets, parks and outstanding buildings being easily spotted.

For the best record and performance in connection with flying during the year 1929, Captain Stevens was awarded the Mackay Trophy. On February 27th of that year, with Lieut. Harry A. Johnson as pilot, he made complete and accurate notes of the engineering and meteorological features of an altitude flight to 35,611 feet, a record at that time for a biplace airplane. This data proved of great value to the Air Corps Engineering Division.

On March 3, 1929, on the eve of the inauguration of President Hoover, Captain Stevens, in a standard observation airplane piloted by Lieut. John D. Corkille, made night photographs of the Capitol and

the White House at Washington, D.C. Undaunted by several mishaps earlier in the evening, the pair of flyers kept at work until 10:45, and their efforts were successful. The negatives of the photographs taken were dropped immediately after exposure, picked up by Air Corps officers, and telephotoed to all points of the country.

The climax of his photographic activities in 1929 came when, on a 14000-mile aerial photographic tour of the Northwest, he made a photograph of Mt. Rainier from a distance of 227 miles. Piloted again by Lieut. Corkille, the two spent several months in the summer taking some of the most beautiful scenic photographs ever made. Taking off on August 13th from Eugene, Oregon, and flying over a point well south in Oregon, Captain Stevens, although unable to see with his own eyes many of the mountain ranges and peaks he hoped to include in the long-distance photograph, made careful calculations with the aid of his compass and, pointing his camera in the direction of Mt. Rainier, made the exposure. The result was remarkable, for in the 227-mile picture, not only is Mt. Rainier clearly seen, but also other notable mountain peaks in that region.

In January, 1932, during the course of photographic work performed by the Air Corps for the U.S. Coast and Geodetic Survey, Captain Stevens eclipsed his previous achievement in long-distance aerial photography when, from an altitude of 23,000 feet, from a position 8 miles east of Salinas, Calif., he made a photograph of Mt. Shasta, Calif., a distance of 331.2 miles from the locality where the plane was flying.

Captain Stevens' exploits are numerous. He usually participates in all the principal aerial photographic undertakings initiated by the Air Corps.

In August, 1932, during the eclipse of the sun, Captain Stevens, piloted by Lieut. Charles D. McAllister, made some remarkable photographs of that phenomena and, in addition, contributed valuable data in connection with research work on the cosmic ray.

In 1934, Captain Stevens was awarded the Distinguished Flying Cross for extraordinary achievement while participating in aerial flight. He was a scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight, which took off from the vicinity of Rapid City, South Dakota, July 28, 1934, and landed near Loomis, Nebraska, that same day. He assisted in piloting the balloon to an altitude of 60,613 feet, and in making continuous scientific observations enroute. When the balloon became disabled, through circumstances beyond human control, Captain Stevens did attempt, under most adverse and hazardous

conditions, to land successfully the disabled aircraft in order to preserve the scientific records that had been obtained. By the exercise of cool judgment and foresight under these conditions, certain scientific records were saved, and the disabled aircraft was abandoned only when it was clearly evident that not to do so would prove disastrous to human life.

In being forced to abandon the disabled balloon and resorting to his parachute, Captain Stevens became a member of the mythical Caterpillar Club.

CAPTAIN ANDERSON ✓

Captain Orvil A. Anderson is one of a limited number of officers in the Army Air Corps who holds four flying ratings, these being "Airplane Pilot," "Airship Pilot," "Airplane Observer," and "Balloon Observer."

Born at Springville, Utah, May 2, 1895, Captain Anderson attended grammar school, high school and college preparatory school in that city, and was a student for one year at the Brigham Young University.

Enlisting in the Aviation Section, Signal Corps, during the War, he served for several months with the 129th Aero Squadron at Kelly Field, Texas, and, in October, 1917, he was transferred to the First Balloon School Squadron at Fort Omaha, Nebraska, where he pursued the course of instruction in ballooning.

From March 22 to May 11, 1918, he took the ground school course at the School of Military Aeronautics, Ohio State University, Columbus, Ohio, and then returned to Fort Omaha, where he completed the course of instruction in Observation, lighter-than-air. He was rated a "Balloon Observer," July 24, 1918; commissioned a 2nd Lieutenant, Aviation Section, Signal Corps, August 23, 1918, and assigned to duty with the 59th Balloon Squadron, Fort Omaha, as Supply Officer and Mess Officer. On January 29, 1919, he was placed in command of the 61st Balloon Company.

Transferred to duty with the 34th Balloon Company at Langley Field, Va., in April, 1919, Captain Anderson completed the course of instruction in airship piloting, and was rated "Airship Pilot," September 1, 1920. During the year 1920, he completed a course of instruction in aerial navigation at the Naval Navigation School at Pensacola, Fla.

In 1922, Captain Anderson was transferred to the Balloon and Airship School at Scott Field, Ill., where he was on duty as Instructor in Terrestrial and Celestial Navigation. In that year he was commended on two occasions by the Chief of the Air Corps for exceptional service; in the first instance for the

creditable manner in which he performed his duties as a member of the crew of the Airship C-2 on its round trip trans-continental flight and, in the second instance, for his skill and courage in successfully landing, with but minor damage, and with no injury to any member of the crew, a pony blimp during the course of a flight from Scott Field to Bynum, Ala. Unable to land the blimp due to unforeseen high wind and motor failure, Captain Anderson successfully effected a rip landing.

Early in 1923, Captain Anderson completed a course in rigid airship training at the Naval Air Station at Lakehurst, N.J.

In 1925, he completed the course in heavier-than-air training at the Primary Flying School at Brooks Field, Texas, and the Advanced Flying School at Kelly Field, San Antonio, Texas, and on Sept. 14th of that year was rated "Airplane Pilot" and "Airplane Observer."

Following his graduation from the Advanced Flying School, Captain Anderson was on duty at this School for several months as Commandant of Cadets, Flying Instructor and Instructor in Observation. He then returned to Scott Field, Ill., for temporary duty for several months. Being due for foreign service, Captain Anderson was transferred to the Philippines and, upon the expiration of his tour in the Islands, he returned to Kelly Field, his present station.

In the latter part of 1933, Captain Anderson was on temporary duty at Langley Field, Va., where he pursued an advanced course in air navigation. He remained at Langley Field for a brief period as an instructor in that subject. In June, 1934, he was assigned as pilot and observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight, which took off from the vicinity of Rapid City, South Dakota, July 28, 1934, and landed near Loomis, Nebraska, that same day. He assisted in piloting the balloon to an altitude of 60,613 feet, and in making continuous scientific observations enroute, and when the balloon became disabled through circumstances beyond human control, did attempt, under most adverse and hazardous conditions, to land successfully the disabled aircraft in order to preserve the scientific records that had been obtained. By the exercise of cool judgment and foresight under these conditions, certain scientific records were saved, and the disabled aircraft was abandoned only when it was clearly evident that not to do so would prove disastrous to human life.

In being forced to abandon the disabled balloon and to resort to the use of his parachute, Captain Anderson became a member of the mythical Caterpillar Club.

Characterized by the local newspapers as "the greatest military demonstration in the history of San Antonio," Army Day at the Alamo City saw an aerial display in which approximately 150 planes were utilized, followed by a parade of all units of the Second Division from Fort Sam Houston.

Major John K. Cannon, Director of Training at the Air Corps Training Center, was in charge of the Aerial Review in which there were planes from Kelly, Randolph and Brooks Fields. The planes were flown at four different altitudes, with Randolph Field's "USA" formation at the top altitude of 4,500 feet. This same formation was flown during the filming of "The West Point of the Air." Kelly Field planes were flown at 4,000 feet, and those from Brooks Field at 3,000 feet. The flying started at 9:30 a.m.

Kelly and Randolph Fields each dispatched 12 planes on Friday night, April 5th, to give a demonstration of night flying over the city.

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DEATH OF JIMMY COLLINS MOURNED

With the information that Jimmie Collins' brilliant career as a pilot had come to a sad finish, many Kelly Field officers recalled the likeable "Jimmie" to mind when he was a classmate of Col. Charles A. Lindbergh, then a Flying Cadet at Kelly Field in the advanced class of September, 1934, both crack pilots graduating on March 14, 1925. Collins specialized in Pursuit at the Advanced Flying School.

Collins, whose specialty had been terminal velocity dives from 20,000 feet, was killed on March 22nd, when his plane during one of those dives crashed near Farmingdale, L.I., New York. He had been testing Navy planes for several days.

It was back in December, 1928, when Collins was making a test flight for the Navy and attempting a vertical dive from 11,500 feet that structural failure of the plane made him a member of the Caterpillar Club.

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REVIEW FOR RETIRED NONCOMMISSIONED OFFICER

The entire personnel of Kelly Field participated in a Review on March 30th in honor of Master Sergeant Ernest Cote, 40th Attack Squadron, Air Corps, who was retired after 30 years' honorable service in the Army. His Squadron staged a turkey dinner in his honor.

Master Sgt. Cote, who will make San Antonio his home, enlisted in the Army in December, 1903. He served four years in the Coast Artillery, following which he

transferred to the Signal Corps. In November, 1913, he affiliated himself with the Aviation Section of the Signal Corps, and he has been with the Army's Air Forces ever since. His service includes an assignment to the 1st Aero Squadron, organized twenty years ago, and commanded by Captain Benjamin D. Foulois, now Major General and Chief of the Air Corps.

Through one of those coincidences which happen now and then, General Foulois was present at Kelly Field on a tour of inspection when the ceremonies incident to the retirement of Master Sergeant Cote took place, and they had a chat over old times. The General congratulated the latter upon his well earned retirement.

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THE FIRST WING'S FIRST CONCENTRATION

The first tangible evidence of the formation of the new 1st Wing of the GHQ Air Force appeared on March 22nd, when the new Wing held its first concentration at Hamilton Field, Calif.

Brigadier-General Henry H. Arnold, the Wing Commander, devised a communication problem, combined with a bombardment concentration with accompanying Pursuit protection, with Hamilton Field as the objective. Fifty-one planes of the 17th Attack Group, 12 Bombardment planes of the 19th Bombardment Group at Rockwell Field joined forces with 13 Martin Bombers of the 7th Bombardment Group at Hamilton Field to complete the Wing force as it is now equipped. The communications feature of the problem involved intercommunication between the three Groups as they moved up the coast, employing radio voice.

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POST EXCHANGE ADDITION TO RANDOLPH FIELD

For the consideration of \$1.00, the Randolph Field Post Exchange is deeding to the Government a new \$7,000 building, which was erected to house the new post exchange concession for auto parts, servicing of cars, and wash rack. Being isolated from San Antonio by 18 miles, this new service to the post personnel fulfills a long felt want.

The Post Exchange Council originally provided an expenditure of \$4,000 to erect a building, under the direction of the Constructing Quartermaster. By the time the building was ready for occupancy, however, the Post Exchange found that it had invested in the neighborhood of \$7,000.

The building is designed so as to harmonize with the general architectural scheme of the post and, unlike most buildings used for this purpose, it is an attractive addition instead of an eyesore.

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MACKAY TROPHY PRESENTED GENERAL ARNOLD

On April 9th, cloudy, chilly and rainy, a day which brought memories of one 23 years ago (October 9, 1912) on which he made a 41-minute reconnaissance flight from College Park, Md., to Washington Barracks, D.C.; Fort Myer, Va., and return to College Park, and thereby earned the first award of the Mackay Trophy, Brigadier-General Henry H. Arnold, Air Corps, was for the second time in his Army career awarded this Trophy for his leadership of the flight of ten B-10 Martin Bombers from Washington, D.C., to Fairbanks, Alaska, and return, during July and August, 1934.

Due to the absence of Senator William G. McAdoo, President of the National Aeronautic Association, Major James H. Doolittle, Vice President of the Association, flew to Washington from New York in weather which kept most birdmen on the ground, and presented the Mackay Trophy and the gold medal to General Arnold. Because of the inclement weather, the presentation ceremonies were held inside one of the Bolling Field hangars in the presence of a guard of honor, Brigadier-General Oscar Westover, Assistant Chief of the Air Corps; Lieut.-Col. Barton K. Yount; Lieut.-Col. John D. Reardan and Captain E.E. Hildreth, of the Information Division, Office of the Chief of the Air Corps; Captain Charles M. Savage, Acting Commanding Officer of Bolling Field, and other commissioned personnel of the field; Messrs. Wm. Ehyart and Ray Cooper, of the National Aeronautic Association, and two representatives of Mr. Clarence H. Mackay, donor of the Trophy.

In turning over the Mackay Trophy to General Westover, who accepted it on behalf of the War Department and made a brief reference regarding its history, and then pinning the gold medal on General Arnold, Major Doolittle said that aviation is not entirely a young man's game any longer and showed that military aviation units should be entrusted to the command of able, experienced flying officers.

General Arnold, in a brief speech of acceptance, recalled incidents connected with his first trophy-winning flight. Dressed in ordinary clothing, not being provided with flying clothes, sitting in the unprotected seat of the early Wright machine and fully exposed to the elements, he said that he had undergone more hardship on this flight than during the entire Alaskan flight of the past summer. He added that when he landed at College Park he was so cold that he could hardly move, and he was carried to the hospital.

General Arnold was present in Washington to testify before a Congressional Committee, and it seems that the presentation ceremony was well timed.

MATERIEL DIVISION
ENGINEERING NEWS

ENGINEERING SECTION

Equipment Activities:

Instrument Landing Equipment: Parts for the fabrication of Air Corps radio compass locators for the Department of Commerce are on order; fabrication of Air Corps marker beacon projectors for the Department of Commerce has been started. This work is being accomplished at the Materiel Division.

Mounting brackets have been prepared for installing instrument landing equipment in the first instrument landing truck. Drawings are being prepared to accomplish this work in other instrument landing trucks.

Aerial Photographic Equipment.- A representative of the Materiel Division made a tour of the East recently in connection with obtaining aerial photographic data. He visited the Eastman Kodak Company and the Folmer Graflex Corporation, Rochester, N.Y., and obtained engineering data for preparations for Types C-1 and C-2 cameras; the Akeley Camera, Inc., New York City, and obtained data for preparation of specification for Type A-1 camera; the Fairchild Aerial Camera Corporation, Woodside, Long Island, N.Y., re changes necessary on Type I-70 camera recommended by Air Corps photographic activities as result of service test; and Mitchell Field re installation of drying cabinets in Type A-1 dryer. He also visited the Philadelphia Air Transport Company, Norristown, Pa., and examined an experimental automatic film dryer developed by that company. A practical demonstration was made; the dryer seems quite promising. An effort will be made to obtain one of these dryers for experimental test at the Materiel Division.

MATERIALS BRANCH

The Air Corps completed a service test on the comparison of "International Orange" and Yellow No. 4. The former is recommended by the Aeronautics Branch of the Department of Commerce, in Aeronautics Bulletin Nos. 4 and 9, "Regulations Governing Establishment and Certification of Artificial Lights and Recommended Standards for Marking Obstructions to Air Navigation," July 1, 1932, and the latter in Supplement No. 3-1 to U.S. Army Specification.

Tests were made at Randolph Field. The two-color finishes were applied to airplanes, which were viewed from above, when at rest, and while taxiing, when in flight against a clear sky, and against clouds. Recommendations were made for aluminum and black, which might be a desirable combination in case protective coatings were discontinued on metal-covered airplanes.

Air Corps "Gigolo."

Vibration tests on the new Materiel Division motor mount are now being conducted. For these tests it is not necessary to run the engine, the vibration being set up by a "Gigolo." A "Gigolo" is defined unofficially in static test circles as "a dancing device which excites response in the body to which it is attached." A further advantage of using a "Gigolo" lies in the fact that the engine under test is cool, is not turning a propeller, and consequently can be observed, felt, and vibration recording instruments applied to any part.

Armament Activities:

Design work is being accomplished in connection with the development of a bomb rack assembly intended for use in Pursuit type airplanes. The rack assembly will be electrically operated and utilized under all conditions of maneuvers approved for this type airplane. The mechanism is being designed in units for each bomb with the idea that units corresponding to the number of bombs required can be installed.

Work is being continued in connection with the development of an adapter assembly for use in mounting two caliber .30 machine guns flexibly. Recent tests of the most promising design have been attended with highly satisfactory results.

FIELD SERVICE SECTION NOTES

Flexible Gun Mounts Requested.

Inquiries were received from both the Artillery and Mechanized Cavalry in regard to the availability of flexible gun mounts against anti-aircraft. These arms have been informed that approximately 800 each of the Type A scarf mounts are available from Air Corps stores without transfer of funds, except actual cost of packing, handling and transportation.

While this type of mount is obsolescent for Air Corps use, it appears to be suitable for the above purpose.

Stock List Prepared.

The Materiel Division has just completed a project begun several years ago, that of preparing a complete list of all the items of equipment and supplies stocked by the Air Corps. This "Stock List" has been published in sectional form, a separate section for each class of property. The individual parts of the list will be republished annually to bring them up to date.

This work is one of the most important projects the Field Service Section has attempted since, through this stock list, it has been possible to standardize Air Corps property nomenclature, fix the classification of each item, and to dis-

pose of surplus and obsolete stock. A great quantity of material has been made available for sale and the shelves of the depots and stations consequently cleared of a large amount of inactive material. The reports received in the Materiel Division from all Air Corps stations and depots have been rendered intelligible through the standardization of nomenclature so that the exact location of all property is now known with the result that considerable saving in expenditures for new material is made possible by the utilization of existing stocks.

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GENERAL SIMONDS VISITS AIR CORPS POSTS

Among recent visitors at the Air Corps Tactical School, Maxwell Field, Ala., was Major-General George S. Simonds, Deputy Chief of Staff, who arrived at this station from Pope Field, Fort Bragg, N.C.

The General and 1st Lieut. C.K. Gailey, Jr., his aide, were passengers in a C-4A airplane piloted by Captain Hez McClellan, Air Corps. After an overnight stop at Maxwell Field, the flight was continued to Kelly Field, via New Orleans, La.

General Simonds, upon arrival at San Antonio, made a tour of inspection of both Kelly and Randolph Fields in order to familiarize himself with the organization and operation of the Air Corps Training Center.

Major-General B. D. Foulis, accompanied by Captain Harry A. Halverson, also on a tour of inspection of Air Corps posts, and who was in San Antonio at that time, accompanied General Simonds on his tour of the San Antonio fields.

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COOPERATION WITH ANTI-AIRCRAFT

The 63rd Anti-Aircraft Regiment from Fort MacArthur, Calif., is now temporarily encamped at March Field, Calif., for searchlight drill. The 17th Attack Group is flying missions to give them actual airplane targets. Missions are flown for three hours each night at an altitude of 10,000 feet.

In addition to the drill this provides the anti-aircraft personnel, March Field pilots are also using the illuminated airplane for a target to determine the possibility of using anti-aircraft searchlights to illuminate enemy planes in warfare and as to whether our own Pursuit can fire on the illuminated targets without being seen themselves or becoming confused by the lights.

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John Trnum, famous Danish parachute jumper, about to make a delayed jump recently from 30,000 feet, died of heart failure resulting from nerve strain when the plane reached 27,000 feet.

BILL ON PASSIVE DEFENSE FOR FRANCE

Concerning the proposed bill organizing passive defense in France, a report thereon, prepared by M. Gustave Guerin, of the Chamber of Deputies, is briefly as follows:

During the war, aviation was used first in cooperation with the Army and Navy, and later as a new arm, somewhat independent. There were 28 attacks against Paris, during which 25 tons of bombs were dropped.

After the war, aerial danger was so remote that the subject was dropped in France for several years. But this danger exists and is very grave, all the more so as attacks will come either suddenly, or after a very short period of political tension. Theories adopted in foreign countries leave no doubt as to the capital role of aviation in a new conflict and it is even stated that definite results may be obtained by aviation the first days of a war. To this end, aviation will attack objectives of all kinds, if judged important; military, economic and moral; and will use all available means: explosives, incendiary bombs and gas.

International conventions have been drawn up, but it is impossible to stop the manufacture of certain chemicals which, while used in gas warfare, are also important in the chemical, dye and fertilizer industries.

Douhet was in favor of a sudden attack with all available means, without declaration of war. These views are also popular in Germany. Hence, it must be admitted that aviation will attack any objective, with all available means, and will carry its attacks all over the territory of a nation.

This means a real danger for civilian populations and adequate measures must be adopted, especially in a country like France, which will always not only avoid but even appear to plan a brusque aggression. This renders France more vulnerable.

Red Cross societies have already devoted their efforts to this question of passive defense, and attempted in numerous meetings to define measures capable of counteracting a bombardment by air. In most European countries, passive defense has been organized. France is slow in this respect.

Studies were carried out and rules laid down. In the instructions of the Ministry of the Interior there are shown the respective duties and responsibilities of the various authorities.

Certain measures have been considered in detail since that time by the High Committee on Passive Defense, an advisory body of the Ministry of the Interior. The general organization of passive defense has thus been contemplated

but cannot be enforced as long as it is not compulsory to abide by the Ministry of the Interior's instructions in the matter. This must be made compulsory by law.

The financial aspect of the question is a delicate one. The High Committee on Passive Defense of the Ministry of the Interior agreed that it was desirable that expenses incurred for passive defense against air attacks should rest on the beneficiaries: administrations, public services, departments, towns, associations and individuals, the Government contributing certain sums only in exceptional cases in the general interest of the nation or in consideration of the particular situation of those concerned.

To be efficient in time of emergency, passive defense must have trained personnel in time of peace, composed of departmental and municipal services to which civilian volunteers will be added. This personnel should be insured against accidents in time of peace as well as against accidents in time of war.

The preparation of passive defense creates new obligations which a law alone can define.

It is also indispensable to give special authority to the Ministry of the Interior to impose certain dispositions, either in the lay-out of towns or construction of buildings, with a view to passive defense.

The above items are the basic principles of the proposed bill on passive defense.

The Chamber of Deputies' Commission did not feel that all expenses should be borne by the interested parties, but only as far as their financial situation would permit; instead of placing the mayors under the authority of the Government, the Commission desires them to act as collaborators. The Commission has amended the bill to that effect and recommends its passage as now drafted.

Article I of the bill makes the organization of passive defense against air danger compulsory over the entire territory.

Article 2 charges the Ministry of the Interior with directing, coordinating, and controlling the organization of passive defense, with the assistance of a High Committee on Passive Defense.

Article 3 shows the duties and responsibilities of public authorities and individual bodies in the preparation of passive defense. This defense in France is the responsibility of the ministries. However, passive defense of the populations is the responsibility.

Article 4 gives authority to the Ministry of the Interior to apply government directives and to enforce measures in connection with industrial decen-

tralization and the dispersion of populations. It also empowers it to increase, through pertinent measures, the capacity for defense of the various communities.

Article 5 provides personnel for passive defense and provision for regulations regarding their respective statutes.

Article 6 deals with the distribution of expenses.

Article 7 provides sanctions for those who do not respect the provisions of article 1 (obligation of passive defense) and article 3 (authorities preparing for it), listing measures which are strictly necessary, whose enforcement must be obtained by the prefects in case the mayors do not attend to it.

Article 8 provides for these exercises which will not perturb public life, only the regular personnel participating and only camouflaging of lights and interruption of circulation in centers where passive defense is being tested out being expected of the civilian populations.

Article 9 concerns administrative measures and provides that special provisions will be adopted for the region of Paris.

Article 10 extends the provisions of the law to the colonies.

Conclusions.

If we compare the situation in France to that in other countries, it must be admitted that France is slow in the organization of its passive defense. If, theoretically, everything has been provided for, practically the education of the population and preparatory measures have only been fractional and disconnected.

At the present time, according to the reaction of the mayors to passive defense, something is done or nothing at all. Hence, everything that must be ready beforehand must be made compulsory. This means that punishment is necessary, not only for responsible authorities, but also for private individuals.

As concerns expenses, certain communities have relied on the Government, but Marshal Petain himself declared that the entire fortune of the nation would not be enough to create an "ideal organization" of passive defense.

The Commission and the Government have prepared, in complete accord, a text which is now being submitted to the Chamber of Deputies and should be voted.

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Attention is invited, in connection with the above proposed legislation, to quoted articles from two French dailies on passive defense against air attacks, which appeared on pages 137 and 138 of the April 1st issue of the News Letter.

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A tailor living at Dalby, 200 miles from Brisbane, Australia, who is a licensed pilot, finds flying to his various customers quicker and cheaper. He hires a plane from a local flying club.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Maxwell Field, Ala.: Major Leslie MacDill, for duty as member of the Air Corps Board, upon completion of present course of instruction at Naval War College, Newport, R.I. - Captain Levi L. Feery, upon completion of tour of duty in Philippine Islands.

To Randolph Field, Texas: 1st Lieut. Ralph E. Holmes, from Crissy Field, for primary flying training, Class of July 1st - Captain James F. Powell, upon completion of present course of instruction at Army Industrial College, for primary flying training.

To Langley Field, Va.: Captains Robert Olds and Ralph H. Wooten, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kans. - Lieut.-Colonel Walter R. Weaver for duty as Chief, Inspection Section, GHQ Air Force, from duty as Procurement Planning Representative, New York City.

To Washington, D.C.: Captain Thomas W. Blackburn, Instructor, 35th Division Aviation, Texas National Guard, Houston, for duty in Office of Chief of National Guard Bureau.

To Philadelphia, Pa.: Captain John A. McCulloch, as Instructor, 28th Division Air Corps, Pa. National Guard, upon completion of course of instruction at A.C. Tactical School.

To Governors Island, N.Y.: Colonel Frank P. Lann, Military Attache, Paris, France, effective about Sept. 18, 1935, for duty with Air Corps at Hqs. Second Corps Area.

To Wright Field, Dayton, Ohio: 1st Lieuts. Lawrence C. Craigie and George V. Holloway, upon completion of present course of instruction at Air Corps Engineering School.

To Fort Crockett, Texas: Colonel Theodore A. Baldwin, for duty in connection with recruiting. Previous orders revoked.

To Hawaiian Department: Major John C. McDonnell, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas.

To New York City: Captain Clarence H. Welch, from Langley Field, for duty as Air Corps Procurement Planning Representative.

To Rockwell Air Depot, Calif.: Captain Reuben C. Koffatt, upon completion of present course of instruction at Air Corps Engineering School.

To Middletown, Pa. Air Depot: Captain Harrison G. Crocker and 1st Lieut. Russell E. Randall, upon completion of present course of instruction at Air Corps Engineering School.

To Fairfield, Ohio, Air Depot: 2nd Lieut. John W. Sussums, upon completion of present course of instruction at Engineering School.

To Paris, France: 1st Lieut. Townsend Griffiths for duty as Asst. Military Attache for Air to Paris and Spain, from duty in the Office of Assistant Secretary of War.

To U.S. Military Academy, West Point, N.Y.: 1st Lieut. Leonard H. Roelck, upon completion of present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To Scott Field, Ill.: 1st Lieut. Gerald G. Johnson, upon completion tour of duty in the Philippines.

To Bolling Field, D.C.: Captain William E. Feltus, from duty as Instructor at Command and General Staff School.

To Randolph Field, Texas: 1st Lieuts. Hoyt D. Williams and Jacob E. Smart, from Panama. Relieved from temporary rank effective upon date of departure for new assignment; - 1st Lieut. Uzal G. Ent, from Langley Field, to undergo primary flying training.

ORDERS REVOKED: Assignment of 1st Lieut. Fred A. Ingalls from Crissy Field to Fort Bragg, N.C. - Assignment of 1st Lieut. Alva L. Harvey from Langley Field to Philippines.

PROMOTIONS: to 1st Lieutenant: 2nd Lieut. Fred S. Stocks, rank March 9, 1935 - 2nd Lieut. Paul T. Cullen, rank from March 20, 1935.

RELIEVED FROM DETAIL TO AIR CORPS: 2nd Lieut. John J. Stark to 6th Coast Artillery, Fort Winfield Scott, Calif.

RETIREMENT: 1st Lieut. Robert M. Kraft from Letterman General Hospital to his home.

TRANSFERRED TO AIR CORPS: 2nd Lieuts. Paul R. Goven, C.E.; Harry S. Bishop, C.A.C., David N. Cricquette, F.A., and Samuel A. Mundell, Infantry, March 20, 1935, with rank from June 13, 1933.

RELIEVED OF TEMPORARY RANK: Major Dixon M. Allison, 24th Pursuit Squadron, and 1st Lieut. Jarred T. Crabb, 29th Pursuit Squadron, effective upon departure from Panama Canal Dept.

CHANGES OF STATION (Add.): To Office of the Chief of the Air Corps: Major Michael F. Davis, from Hawaiian Department.

To Fort Leavenworth, Kansas: Captain Joseph A. Wilson, for duty with Air Corps Detachment, from duty with Organized Reserves, Richards Field, Kansas City, Mo.

To Randolph Field, Texas: 1st Lieut. Reginald R. Gillespie, from Langley Field, Va.

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CHANGES IN ENLISTED PERSONNEL

Master Sergeant Ernest Cote, placed on the retired list at Kelly Field, Texas, March 31, 1935; First Sergeant Nathan W. Beacher was placed on retired list at Selfridge Field, Mich., same date. Master Sergeant George Stout died at Langley Field, Va., March 18, 1935.

Technical Sgt. Charles Gail was promoted to Master Sgt., March 22, 1935, to fill vacancy caused by death of Master Sgt. Stout. Sgt. Gail is stationed at Rockwell Field, Calif.

Technical Sgt. John Bollinger, Scott Field, Ill., was promoted Master Sergeant, April 1, 1935, to fill vacancy caused by retirement of Master Sgt. Cote.

Staff Sergeant James L. Coulbourn, Bolling Field, D.C., was promoted Technical Sergeant to fill vacancy caused by promotion of Technical Sergeant Gail.

Staff Sergeant George W. Riffil, Hawaiian Dept., was promoted Technical Sergeant to fill vacancy caused by promotion of Tech. Sgt. Bollinger. He was ordered to Scott Field, Ill.

THE DEVELOPMENT OF THE MEDICAL SPECIALTY, AVIATION MEDICINE, AND THE FLIGHT SURGEON
By Major M. C. Grow, Medical Corps, Acting Chief, Medical Division, A.C.

The medical specialty, Aviation Medicine, was an outgrowth of the World War. The early unfortunate experiences of the French, British and Italians with the attendant enormous loss of life and materiel not only in combat but even more so during the period during which the embryo flyer was receiving his training, disclosed the fact that every man was not physically or mentally equipped for military aviation.

It has been learned that the development of certain defects, or conditions which are ordinarily considered as unimportant when found among the personnel of other branches of the service, may render an airplane pilot wholly unfit for the piloting of military aircraft safely. Consequently, there has been evolved more or less gradually a different set of physical requirements for the military aviator.

The military aviator performs his missions in an environment entirely new to mankind. He moves through space at a tremendous rate of speed, and in moving, controls the position of his craft in three dimensions simultaneously. Furthermore, he must constantly make rather quick decisions, and these decisions must practically always be made accurately and correctly. The decisions which he makes depends, primarily and directly on his ability to perceive accurately; and secondarily, to make the proper interpretations of his perceptions.

The idea gradually evolved in the minds of the aviators at the front that there was a great and immediate need for a medical advisor to the commanding officer of the squadron whose duties were the maintenance of physical fitness of each individual aviator of the command. When the United States came into the World War the sad experiences of our Allies were recognized and the government fortunately took steps to avoid similar losses through lack of medical supervision.

It is worthy to note that many of the medical experts made the identical statement, "It is fortunate that the United States is realizing at the beginning that the essential need is for medical advisors whose duty it is to maintain the fitness of each individual aviator". Hence the flight surgeon arose from the demands put upon man by war-time aviation.

In August, 1917, the Chief Surgeon of the Aviation Section of the Signal Corps received detailed information from an officer of the Royal Flying Corps, giving data upon the marked nervous instability that developed among the fighting fliers at the front which

showed that nervous instability and breakdown was a greater factor in reducing efficiency than bullets.

A study of the effects of altitude on man by the British showed that this was a causative factor in reducing the fighting power of the squadron on the front. On September 17, 1917, a committee was designated by The Surgeon General of the U.S. Army, and submitted the following propositions:

"1. That the present anti-aircraft guns of the Germans necessitate much flying in high altitudes, 16,000 to 20,000 feet.

2. That these altitudes cause such symptoms from "oxygen want" as to incapacitate men from service.

3. That acclimatization to these altitudes has not as yet succeeded.

4. That artificial oxygen supply is an absolute necessity to enable aviators to work in these altitudes.

5. That different individuals show marked differences in their capacity to withstand high altitudes and it is believed that it will be necessary to institute special examinations of all aviators to determine their ability for high altitude work."

In accordance with the above suggestion, recommendation was made September 26, 1917, by the Chief Surgeon to the Commanding General Air Division, "that a medical research board be appointed to consist of the following officers: Major John E. Watson, Signal Officers' Reserve Corps; and Major Eugene R. Lewis, Major William Wilmer, and Major Edward C. Seibert, all of the Medical Reserve Corps, to report to the Chief Surgeon, Aviation Section, Signal Corps.

After many difficulties a laboratory was established at Hazelhurst Field, Mineola, Long Island, N.Y., called the Medical Research Board of the Aviation Section of the Signal Corps.

In instructing future flight surgeons the first faculty at the Research Laboratory included the following in their curriculum:

1. Selection of the Flier.
2. Classification of the Flier.
3. Maintenance of efficiency.

At first associated with the flight surgeon in his work were physical directors who acted very much in the same capacity as a trained athlete. These physical instructors were later discontinued and the entire burden of the fliers' physical and mental well-being fell on the flight surgeon.

After the War, in 1919, the Regular Army flight surgeons school was established at Mitchel Field. In 1925, the school, now called The School of Aviation Medicine was removed to Brooks Field,

San Antonio, Texas. When the new West Point of the Air, Randolph Field, Texas, the training center of all prospective military aviators, was established in 1931, the school was moved to the new locality where it has continued to function as a teaching and research center in aviation medicine. A faculty of six members, all Regular Army Medical Corps officers and all qualified Flight Surgeons, give courses in physiology, psychology, psychiatry, cardiology, otology, ophthalmology, neurology, and other subjects in their especial relation to aviation medicine.

An extension course and six weeks' practical instruction is open to Medical Corps Reserve and National Guard Medical Officers. A total of 144 Regular Army Medical Corps officers, 129 Medical Corps Reserve, 14 National Guard Medical officers, 30 U.S. Navy officers, and 3 foreign officers have completed the courses and are rated as Flight Surgeons. It is estimated that the number of qualified flight surgeons required for M-Day in case of a national emergency is 945 of which a total of 700 should be Reserve officers.

At the present time 60% to 80% of aircraft accidents are due to pilot error. The errors of omission and commission thus cause a considerable loss of life and destruction of property and should inspire such constructive and preventive measures to improve the record. The trend of thought on the influence of proper medical supervision of aviation personnel is clearly indicated in the recommendations adopted by the Fifth International Congress on Aerial Navigation at the Hague in 1930, extracts from which follow:

"The Fifth International Congress on Aerial Navigation thinks that the aeronautical medical services have become and will become more and more a special and distinct branch of general medicine, and therefore hopes -

"To have aeronautical physicians prepared for the hard task devolving upon them by means of a technical specialization in aerial navigation, and to have them fly at least enough to gain experience which, while not equaling that of pilots, will, nevertheless, enable them to knowingly judge the great physical and moral qualities they must require of navigating personnel and to realize themselves the degree of aptitude required for the normal service of an aviator."

Contribution to the successful progress of aviation must continue to be made in the future as in the past. In this field of endeavor the way must be shown by the services.

AN ODE TO THE FIRST PURSUIT GROUP

It will be recalled that during the winter of 1929-1930, Lieut.-Colonel Royce, then Major, led a flight of the First Pursuit Group, Selfridge Field, Mich., through the Northwest. This flight has since gone down in the records as the "Arctic Patrol."

During that time a stop was made at Helena, Montana. A freshman in the Helena High School by the name of Alice Lee Wood, aged 15, wrote a poem, entitled "The Snowbirds." During the flight of the Provisional Winter Test Group this year, the pilots were presented at a joint session of the Montana State Legislature, and the following poem was read and presented to Col. Royce:

THE SNOWBIRDS

The Army birds have just left town,
They stayed here all last night.
When o'er this town they flow around,
Oh what a marvelous sight.

They left their homes in Michigan
On an endurance flight,
But before they land back home again,
On many fields they'll light.

They are called the Army Snowbirds,
And what a name they take,
When they are flying in the air,
Of what a noise they make.

The pilots all were faithful,
They flew in snow and rain,
But coming into Helena
They saw the sun again.

The Major deserves the honor
For guiding his men to fame,
Risking their lives for their country
They showed that they were game.

When they get back to Michigan,
They'll sure deserve a rest.
Then they'll wait another flight,
Knowing they've done their best.

The U.S. ought to be proud
To have a fleet so grand,
And now when'er they're needed
They'll go out to take their stand.

---oOo---

On April 5th, Wright Field celebrated the coming of its new Chief, Brig.-Gen. A.W. Robins, formerly Executive of the Materiel Division. A receiving group, headed by Col. Robert Goolrick, Acting Chief of the Division since Gen. Pratt's departure, awaited him, while the official salute of 11 guns boomed forth. Later, all the officers filed into headquarters to offer greetings. It was a welcome home, not a ceremonious reception, and as such the General accepted it, stepping easily and simply into the highly responsible position assigned to him.

Kelly Field, San Antonio, Texas, April 6th.

Summer officially arrived at Kelly Field when Colonel Jacob E. Fickel, Commandant, issued an order making the uniform for this command optional, either wool or cotton, except for formations, when uniform will be prescribed. The personnel welcomed this news, as the "City called the winter playground of the U.S." has been experiencing some mighty warm weather.

Lieut. John S. Griffith departed for his new assignment in the Office of the Chief of the Air Corps. He had been stationed at this field since June, 1932, as Flying Instructor. The termination of this assignment made the third tour of duty at the Advanced Flying School for Lieut. Griffith.

Lieut. W.G. Bryte, a recent arrival from the Philippines, was assigned as Flight Commander in the 41st Observation Squadron.

Second Lieut. Edward J. Timberlake reported from the Hawaiian Department and was assigned as Engineering Officer, 40th Attack Squadron.

Many old timers at the field are about to depart for duty at other stations. Scheduled for Maxwell Field are Captain Dale V. Gaffney; Captain Orvil A. Anderson, now at Wright Field on D.S. in connection with the proposed Stratosphere Flight; Captain Edgar P. Sorenson upon completion of his training in Bombardment, about June 25th; Major Lewis A. Dayton, Captains C.I. Ferris and A.F. Shea.

Captain James B. Burwell is under orders for Wright Field, about August 1st, and 1st Lieut. Fred S. Stocks will report at Chanute Field, Ill., by October 1st.

Randolph Field, San Antonio, Tex. April 6th.

Following the air demonstration over San Antonio on Army Day, Randolph Field held open house, placing all types of planes on the line for inspection by visitors.

The movie critic in LIBERTY magazine gave "West Point of the Air" a three star rating, meaning "excellent." This shows that those who have criticized the picture on the score that it did not ring true in technical detail and Air Corps tradition did not realize the layman's viewpoint. Some felt the picture should have been more detailed in showing the progress through the Training Center. M.G.M. has always contended, however, that such a picture comes in the category of a news reel and educational film, and that no movie company would be willing to spend a million dollars for the production of such a picture, as it must be a box office attraction for them to realize on their investment. Even the most severe critics of the picture admit that it is one in which the dignity of the Army is upheld.

Brooks Field, San Antonio, Texas, March 29th.

Brooks Field has accomplished the necessary changes in personnel, both officers and en-

listed, and the reorganization of Squadrons, in accordance with the G.H.Q. Air Force plan. One Brooks Field organization, the 88th Observation Squadron, becomes an "LR Amphibian" organization, to be attached to the First Wing, GHQ Air Force.

Lieut.-Colonel Edward L. Hoffman, formerly of Wright Field, was scheduled to assume command of the field on April 1st, relieving Major William C. Ocker, who will assume the duties of Station Complement Commander.

Second Lieutenants of the Air Reserve whose active duty tours were extended to June 30th next, at Brooks Field, include Sylvester L. Fahey, Edward T. Hausafus, Chester C. Moomaw, Daniel W. Pippinger and Francis L. Rivard.

A.C. Tactical School, Maxwell Field, Ala.

Brigadier-General Juan A. Azcarte, Mexican Military Attache, landed at the field on March 26th for an informal inspection of the post and the Tactical School. Lieut.-Col. Herbert A. Dargue, Acting Commandant during the temporary absence of Colonel John F. Curry, conducted the visitor on a tour of the post. The General seemed very much impressed with the work of the school.

Clearances were issued for 88 planes departing from the field between March 18th and 31st.

Major John I. Moore, together with two officers from Barksdale Field, Captain E.M. Morris and 1st Lieut. C.M. Pearcy, had a very busy time April 1st to 6th, conducting examinations for 31 potential Air Corps officers, who graduated from the Air Corps Primary and Advanced Flying Schools, were former Reserve Officers on active duty, and who applied for Regular commissions. The Medical members of the Board were Captains Edward J. Tracy and William H. Lawton.

Maxwell Field personnel who took the examination were Staff Sergeants Clifton and Williamson, Sergeant McDonald, Privates Waldron, Gavin, Stephenson, Price and Leitner. All of them are enlisted pilots, and Sergeants Williamson and McDonald are members of the well known acrobatic flying trio, "The Men on the Flying Trapeze," led by Major Claire L. Chennault.

107th Observation Squadron, Mich. National Guard

Plans were completed for the participation of a formation of six planes in the Army Day ceremonies at Detroit, the Squadron, under the command of Major Frederick R. Anderson, being scheduled to perform a series of maneuvers over the downtown area during the course of the parade.

The public address system recently installed in the hangars of the Squadron proved highly successful when submitted to a series of tests during the March 24th drill. Band music and orders could be distinctly heard as far as from 500 to 600 yards from the hangars. The speakers will provide music for inspections, drills and ceremonies in the future.

Hawaiian Air Depot.

Captain Kane, who arrived on the March 19th Transport, was assigned to the Depot. His experience in supplies will go a long way in maintaining and adding to efficiency in the Supply Section.

Endeavor is being made to secure the allotment of supplies in order to maintain the present schedule of overhaul. A new cage is being built around the mezzanine floor in the Aero Repair Shop for wing storage.

The number of airplanes undergoing overhaul is about the right percentage of planes which should be out of commission. The Bombardment and Observation squadrons have more airplanes now than at any time last year. The Pursuit and Attack Squadrons of the Department will have their quota of airplanes in three or four months. This, of course, is due to the schedule of overhaul, which will adjust itself so that all squadrons should have their quota of airplanes in commission.

San Antonio Air Depot, Duncan Field, Texas.

On April 1st, the Depot welcomed a visit from General Foulis, who was on a tour of inspection of Air Corps stations. He was accompanied by Capt. Harry A. Halverson, who was on duty at this Depot some years ago.

Lieut.-Col. Frank D. Lackland, formerly in command of this Depot, and now Chief of the Field Service Section, Materiel Division, inspected the Depot March 28-31.

Captain Ray G. Harris, Air Corps representative at the Douglas Company's aircraft factory, ferrying a new XO-45 plane to the Materiel Division, visited here April 1st and 2nd and discussed airplane construction. He also stopped at Brooks Field to enable pilots there to become acquainted with the new airplane.

Lieut. C.K. Moore, Assistant Depot Supply Officer, is acting Quartermaster in the absence of Capt. N.P. Walsh, ordered to the Army and Navy General Hospital, Hot Springs, Ark. Lieut. Moore is under orders to attend the next class at the Air Corps Engineering School.

Master Sgt. Carlton P. Smith, airplane pilot, 12th Obs. Group Hqrs., Brooks Field, was assigned here for duty with the airplane transport service to replace Staff Sergeant O.E. Henderson, of Brooks Field, attached to this Depot for the same duty, who is under orders for duty in Hawaii.

Mr. M.R. Whitmore, Associate Aeronautical Chemist, Materiel Division, on several days' temporary duty here in connection with the study and development of cleaning compounds for airplane and engine parts, was ferried to Rockwell Field, Calif., for the same purpose, by Lieut. J. H. Hicks.

The monthly Control Area Supply and Engineering conference at this Depot was held on April 2nd. Ten officers from various Air Corps stations in this Supply Control Area were present, also Lieut.-Colonel Lackland and Captain Ray G. Harris.

First Pursuit Group, Selfridge Field, Mich.

Due to the recent reorganization of combat units under the CHQ Air Force plan, several changes have been made in the 27th Pursuit Squadron. Capt. R.C.W. Blessley, long in command of the organization, was transferred to the Office of the Chief of the Air Corps for duty in the Reserve Section of the Personnel Division. Lieut. Walter E. Todd was in command for a brief period, and he was relieved by 1st Lt. James E. Parker, who just returned from the Air Navigation School, Rockwell Field.

Other officers assigned to the 27th are 1st Lieuts. Daniel C. Doubleday, Jarred V. Crabb, Dixon M. Allison, Walter E. Todd, 2nd Lts. Norman R. Burnett, Air Corps, and Phares McFerren, Joe Irvine and Jesse Neal, Reserve. Officers attached for flying are Capt. Warren A. Maxwell, 2nd Lts. Morley F. Slaght and Paul W. Blanchard, Jr., A.C., and Cecil M. Hefner, Air Reserve, all of the 56th Service Squadron. First Lieut. Alfred A. Kessler, Jr., Station Supply Officer; Flying Cadets Allan T. Bennett, William W. Harding, Rodney M. Jones, Lawrence R. Olmstead, Jr., Frank L. Higgs, and Wm. W. Jarrell, Jr., are also attached for flying. The Squadron at present has five P-26A's, 1 YP-12K, 1 P-12E, and 1 BT-2B1 for instrument flying.

The Post Basketball League was brought to a close with the 17th and 38th Pursuit Squadrons finishing in a tie for first place, each with 13 wins and 2 losses. In the deciding contest for the championship, the 17th defeated the 38th, 23-21, the contest being a see-saw affair, full of excitement, and attended by a large crowd of ardent, howling rooters.

With the post championship decided, a Post Basketball team was organized, picked from the various squadron teams, and coached by Capt. Steven Guzak, Medical Corps, and Lieut. Chas. Anderson, Air Corps. After several days of intense practice, games were arranged with several service teams in the Corps Area. The Selfridge Basketeers defeated the Fort Sheridan Infantrymen, 31-25, and the Lighter-than-Air men at Scott Field, 29-14, but lost to Chanute Field, 44-40 and to the 6th Infantry at Jefferson Barracks, 29-26.

41st Division, Washington National Guard.

Captain John H. Gardner, Air Corps, Instructor of Reserves at Boeing Field, Seattle, was assigned as Inspector for the annual June encampment of the 41st Division. The encampment will be held at Camp Murray and Fort Lewis, where National Guard troops from Washington, Idaho and Oregon will hold a division camp.

It was also the desire of the 41st Division that Capt. Gardner be assigned as Division Air Officer on the staff of General White, Adjutant General for Oregon, and Division Commander.

The opinion prevails that more effective and beneficial training will result to the Air Corps if a Division Air Officer were active on the staff of General White during the encamp-

ment. Entrance of the Air Corps into National Guard activities is relatively new, with the result that no arm of the service has a clear understanding of how to use the Air Corps effectively. Members of the 41st Division Air Service would be pleased to know how many of the other squadrons of National Guard aviation have Division Air Officers, and what beneficial results are being derived as a result of the appointment of this officer.

Flying time of the average pilot in the 41st Division Aviation promises to be far in excess of the goal of 225 hours set for each pilot for the fiscal year. The total time on March 1st was 1804 hours 5 minutes. All types of missions have been performed in the accumulation of this flying time.

In a recent technical inspection of the 116th Observation Squadron and Photo Section, made by Captain Charles W. Sullivan, Air Corps, Technical Supervisor of the Rockwell Depot Control Area, these organizations were given the rating of "Excellent" and brought forth commendation from the Office of the Chief of the Air Corps as well as from the Adjutant General, State of Washington, and the Corps Area Commander, 9th Corps Area.

"What next?" The pilots of the Division are asking themselves this question as they await the return of their instructor, Capt. Robin A. Day, from the Air Navigation School at Rockwell Field. With other National Guard Instructors, Captain Day just completed the two weeks' course. The pilots have become enthusiastic about instrument flying, and practically all of them completed their 10 hours under the hood, and advanced to cloud flying. They feel certain that Captain Day will give them some new ideas which will assist them materially in polishing off some rough edges.

Increased efficiency on the part of every officer in the 41st Division is certain to be the result of the new program of assignments inaugurated by Captain Day. His program for the first quarter has just ended, and assignments to new duties for every officer have been issued. Before assuming these new duties, each officer was ordered to make a complete report on his findings for the last quarter, and this resulted in his becoming more intimately acquainted with the general operations of all departments than heretofore. Officers are expecting to receive a very thorough understanding of their new assignments, since they include the preparation of all plans for the annual summer camp and the execution of various commands during the period of same.

35th Division Aviation, Missouri Nat'l Guard.

Under authority of an Act of the General Assembly of the State of Missouri, approved May 21, 1931, the Governor presented "Long Service Medals" to the following personnel of this organization who have served ten years therewith, viz: Captains Russell A.

Young, William B. Wimer, Walter K. Branzell, Edwin H. Lauth, 1st Lieuts. Clifton C. Hutchison, Edward J. Burkhardt, 2nd Lieut. Stanley F. Gording, and Master Sgt. James L. Tate.

Capt. Arthur Thomas, Instructor of this organization, is attending the Air Navigation School at Rockwell Field, Calif.

Major Ralph P. Cousins, on duty in the Office of the Chief of the National Guard Bureau, visited this station on March 29th.

During March, 23 visiting Air Corps planes were serviced at this station.

Second Lieut. Kenneth R. Case resigned on March 31st to enlist in the Regular Army.

Rockwell Field, Calif., April 5th.

In the last several weeks, three of Rockwell Field bachelors have been bitten with the bug known as matrimony. On April 3rd, the officers of the post took upon themselves the task of properly introducing the new arrivals with the activities of the field. The newlyweds, Capt. and Mrs. M.H. McKinnon, Lieut. and Mrs. T.R. Anderson, and Lieut. and Mrs. Robert W. Goetz, were taken to Captain Grisham's residence in Coronado where they would not be able to see the preparations for their arrival. The big gasoline truck was decorated with old shoes, banners and a large platform was placed on the top. A drum corps was imported, and at 11:30 the newlyweds arrived and were placed on top of the truck, and with the remaining bachelors, Major Charles G. Breneman, Capt. R.M. Allott, M.C., and Lieut. F.C. Wolfe, A.C., on a trailer in tow of the truck, the procession moved off, headed by the drum corps and followed by all the officers of the post and their ladies.

Noon found the column arriving at the Officers' Club, where a delightful luncheon was served, and the opportunity afforded for the old members of the post to meet the new. The affair ended with the presentation of a silver fruit preserving utensil to each of the new couples.

Prior to the luncheon, each of the following-named officers was presented a diploma for completion of the course in instrument flying for National Guard Instructors: Major Benjamin G. Weir, Captains Ronald A. Hicks, Guy F. Gale, David R. Stinson, Eugene B. Bayley, Charles Backes, Harry H. Mills, Arthur I. Ennis, Robin A. Day, Merrill D. Mann, William J. McKiernan, Arthur Thomas, Richard H. Magee, Thomas W. Blackburn, John B. Patrick, Ross F. Cole, Charles A. Horn, and 1st Lieut. Lewis M. Merrick.

March Field, Riverside, Calif., April 4th.

The month of March saw gunnery and bombing season get into full swing and occupy most of the pilots' time. By April 3th, all the firing at ground targets will have been completed. Each pilot regularly assigned to the three tactical squadrons will have fired his qualification round after being given some two thousand

rounds each of practice. This large practice ammunition allowance has been found necessary and well used because of the fact that most pilots had not fired for some time, and none were familiar with the P-26 for firing and bombing. It seems that scores are much lower with the P-26 than with the P-12 in firing at ground targets. This ship, however, is giving excellent results in dive bombing. On April 7th, the 17th Attack Group was scheduled to begin firing at towed targets and devote the remainder of the month at this work.

The new gunnery and bombing range at Muroc Lake has greatly facilitated the gunnery and bombing work of the personnel at March Field. This lake is about 12 miles long by 6 miles wide. All of its surface is suitable for landing, being hard, very smooth and free from water save for a few weeks in January. The lake is situated 25 minutes from March Field by air, which makes it possible to use it daily for firing. The new First Wing directive requires each squadron to perform some firing during each week of the entire year.

The firing to date has uncovered some excellent individual shots, and March Field personnel are looking forward to the resumption of the Annual Air Corps Bombing and Gunnery Matches.

In addition to the individual firing, experiments are being conducted in tactical unit firing. Element and flight firing in formation have been tried out and will be reported upon when tests are completed. Eventually, it is expected that simultaneous firing by whole squadrons will prove practicable.

Langley Field, Va., April 2nd.

Nineteen Flying Cadets, who completed their training at the Air Corps Advanced Flying School and received their A.P. ratings, reported to the field for tactical training. Ten were assigned to Pursuit, 8 to Bombardment and one to Flight "A," 16th Observation Squadron.

Captain R.T. Cronau was temporarily relieved of his duties in order to attend the Air Navigation School at Rockwell Field. First Lieut. F.E. Glantzberg, his successor, recently arrived from the Philippines and assumed command of the 20th Bombardment Squadron.

The 96th Bombardment Squadron, on March 25th, resumed bombing practice after a lapse of nearly two years, during which the lack of a bomb allowance resulted in the bomb racks being removed, oiled and stored until this training could be resumed.

Second Lieut. William D. Eckert received orders for assignment to duty in Panama. He came to Langley Field in 1932 with the 76th Pursuit Squadron when that organization was transferred from Selfridge Field.

Materiel Division, Wright Field, April 10th.

From the Materiel Division eight officers are slated to attend the Tactical School, viz: Majors Kepner, Powers, Wolfe, Captains Lyon,

Jones, Lieuts. Chidlaw, Crawford and Langmead. They report at Maxwell Field on August 29th.

Lieut. Louis J. Rumaggi, C.E., reported on March 30th from Galveston, Texas, for duty in the Aerial Mapping Unit.

Captain H.G. Montgomery reported for duty from Selfridge Field and was assigned to the Industrial War Plans Section.

On March 27th, the Engineering School officers in 7 airplanes took off on a training formation flight to Chicago, returning the same day.

"Jimmie" Doolittle visited the Division on April 4th, with Mrs. Doolittle and several other passengers aboard.

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LIBRARY NOTES

Some of the More Interesting Books and Documents recently added to the Air Corps Library.

C 70/23. Douhet, Giulio. The War of 19... , March, 1930, 133 p. Tells of the air operations of this imaginary war, giving the two different conceptions of warfare and contrasts the two different air organizations. Trans. from the Italian magazine RIVISTA AERONAUTICA.

C 71.7/6. Handley, Page F. Air defense is dead. March 1935. Air defense, in the sense of a fighter system which will effectively exclude bombing airplanes from a given area, is dead. From Handley Page Bulletin, March, 1935.

359.05/B73. Brassy's naval and shipping annual, 1935. This number has added a large section on aviation.

629.1342/Sc3. Sonntag, Albert. With the Graf Zeppelin and Zondor airplane - Europe to Brazil, 1932. 75p. Gives interesting information on Brazil. German text.

629.144/Un3n. U.S. Hydrographic Office. Naval air pilot Alaska peninsula, Southern and Southeastern Alaska, 1934 (H.O.188). 236p. Purpose of this book is to assist pilots flying in this territory. Contains numerous maps, diagrams and illustrations.

629.15/Sis. Sinclair, J.A. Airships in peace and war, 1934. 308 p. Not only gives a history of the airship, but has a defense for the use of airships. The author says: "Let us be done with this price-to-be-paid bogey. There is a price to be paid for all progress."

940.343/N36. Neame, Philip. German strategy in the great war. 1930. 132p. Discusses the important crisis which occurred and their effect on the German high command and German strategy. More of an outline to base more detailed study of the various campaigns.

Selected Magazine Articles.

Effect of Air Raids on the Mind. Der Luftschutz, February, 1935.

Construction and development of Air Defense Rooms. Der Luftschutz, February, 1935.

English Aeronautical Maneuvers 1-3 Nov. 1934. Revue de Ministere de L'Air, February, 1935.

REPORT OF ENGINEERING - SUPPLY CONFERENCE
Held at the Materiel Division
November 5 to 7, 1934, inclusive.

1. ENGINES, GENERAL.

a. Manifold Pressure Gages vs. Throttle Stops. Pursuit activities appear to desire both manifold pressure gages and throttle stops. Apparently the Pursuit activities desire the throttle stop purely as a marker to indicate the maximum permissible throttle setting at sea level. All activities appear to agree that manifold pressure gages are necessary on late type engines.

b. Pilots' Information on High Output Engines. In general, the reaction from island possessions where old type engines are being used is that sufficient information is now available. Activities at continental stations where the new type high output engines are being received appear to agree that additional information is essential. This information is apparently desired both in the form of a performance chart to be placed in the Form 1 and also in the form of a small instruction manual.

c. Mixture Control. The methods of adjusting the mixture control, as recommended by the various stations, varied from settings that were so rich as to have little value to methods of setting which were so lean as to be dangerous. It is believed that technical instructions now being issued, covering the use of the mixture control on high output engines, will be the proper solution for the difficulty, providing all activities are convinced that the procedure outlined must be carefully followed.

d. R-680 Engines. Activities using these engines report that their operation is very satisfactory from the standpoint of both maintenance and overhaul.

e. V-1570 Engines. All activities report that the operation of these engines, since the stellite exhaust valves have been installed, has been greatly improved. Some difficulty appears to be encountered with Prestone leaks. However, it is believed that this leakage will be held to a minimum when improved methods of overhaul and maintenance, now being considered, have been actually put into practice.

f. R-1820-F Series. Considerable difficulty was reported on R-1820-21 engines in the San Antonio Area with worn exhaust valves. A careful check of the reports in connection with this matter showed that the majority of the reports was coming from one squadron. The number of blowing valves in R-1820 type engines has been greatly lessened at all activities by the injection of lubricant into the rocker boxes after each flight, in order to prevent the sticking and subsequent burning of the valves. Installation will be made of bronze valve guides on all R-1820 type engines as soon as funds are available. It is believed that this change will eliminate the difficulties reported.

g. R-1690 Engines. A great deal of diffi-

culty was reported with vacuum pump drive and fuel pump drive failures on these engines. Investigation has shown that the primary cause of these failures was torsional resonance. The fact that the engine drive unit was not quite strong enough was also a contributory factor.

h. SR-1340-F and R-1340-27 Engines. Operation of these engines has been uniformly satisfactory at all activities since No. 4 impellers were installed.

i. Overhaul and Test. All activities appear to agree that improved testing equipment for later high output engines is a requirement that must be taken care of in the near future. The test clubs especially for use on air-cooled radials are another important requirement. Complaints were made that full information on new engines was not received by service activities at the proper time.

j. Increased Time Between Overhauls. All activities appear to agree that the new schedule which increases the time considerably is proper.

k. Top Overhaul by Service Squadrons. In general, the consensus of opinion appears to be that, if tools and spare parts are available, a reasonable amount of top overhaul by service squadrons would be an excellent procedure from the standpoint of both instructing enlisted personnel and to enable the service squadrons to carry a portion of the depot overhaul schedule in the event that the depot was overloaded with work.

l. Gear Box for Accessories. In general, activities appear to consider the gear box idea worthy of study.

2. ENGINE INSTALLATIONS

a. Cooling Systems. The use of high temperature lead silver solder has apparently eliminated a great deal of the difficulty experienced with leakage. The majority of the activities appear to consider that some type of shutter control, either manual or thermostatic, is necessary on Prestone-cooled installations, especially when operating in northern sectors where sudden climatic changes are liable to be encountered. Difficulty was reported with failures of inter-cylinder baffles on R-1690-11 engines. These failures, in general, occurred on the baffle between Nos. 5 and 6 cylinders. A redesigned baffle has been furnished for this location and future procurement will be made of a new design which consists of nine component parts which should function more satisfactorily.

b. Fuel Systems. A recommendation was made that duralumin lines be replaced by copper lines, at least in the engine compartment on Pursuit airplanes, due to the excessive number of failures caused by the duralumin lines splitting. A recommendation was made that the amount of fuel in each tank be stamped on the dial of the fuel cock control. It appeared to be the consensus of opinion that present fuel cocks were definitely unsatisfactory and that every effort should be made to develop a fuel control valve which did not depend on a cork insert to prevent leakage. All activities appeared to agree that gravity fuel systems were definitely unsatisfactory. It was the consensus of opinion that fuel systems should be simplified in so far

possible on new airplanes.

e. Lubricating Systems. Improved bypass valves for use on oil coolers appear to be necessary. Blanketing of oil lines and oil tanks is reported to be a necessity during flight operations in very cold weather. Some difficulty was reported with clogged oil screens and strainers. It is considered possible that operating personnel have not become sufficiently educated regarding the absolute necessity for cleaning these units at prescribed intervals, or, under severe operating conditions, at even more frequent intervals. All activities report that electric or air operated pressure lubricators are essential for the servicing of lubricant to the rocker boxes on air-cooled engines.

d. Engine Controls. All activities agree that oil and coolant controls should be automatic. Automatic regulation of supercharging on high output engines was also considered desirable, although a general desire appeared to exist for a manual control which could be used to over-run the automatic device to have full engine power for take-off from small fields.

e. Exhaust Disposal Systems. The collector rings now installed on the majority of service airplanes are considered unsatisfactory, due to faulty design which causes a tendency to crack under the influence of engine vibration.

3. CARBURETORS AND FUEL CHARGERS.

a. Carburetor Settings. The majority of stations consider present carburetor settings satisfactory. More effective carburetor air heaters are desired at northern stations.

b. Uniformity of Settings on New and Overhauled Carburetors. The majority of the activities report lack of uniformity of operation with overhauled carburetors and recommend that equipment be furnished all depots for the accurate calibration and flow testing of jets. Difficulty is still reported with leakage between parting surfaces. The Engineering Section has repeatedly recommended Johns Manville No. 70, or equivalent, material for use between the parting surfaces and it is believed that the present difficulty with leakage will continue until all the vellumoid gaskets now in service have been discarded.

c. Acceleration Difficulties. Little difficulty has been experienced with acceleration, except with MA-18A and MA-19C carburetors at southern stations. The settings in these carburetors have been revised and now operate satisfactorily.

d. Setting of Mixture Controls. Methods used by service activities to obtain best economy mixture vary from maximum power settings to a reasonably lean adjustment. It is believed that instructions now being issued will clarify this difficulty. A considerable difference of opinion appears to exist regarding automatic mixture controls. It is evident that dissemination of information regarding automatic mixture controls is necessary, as apparently no one in the service realizes

that even a poor automatic control will, in general, give a better and more nearly accurate adjustment than that obtained by the average pilot who is unfamiliar with the actual results obtained when the mixture control is used.

e. Rich Mixtures on Take-off with Rammed Air Intakes. Difficulty was experienced on P-10 and B-12 types airplanes especially when pilots were operating the airplanes prior to receipt of proper operating instructions.

f. Draining Carburetors. All activities concur that a simple effective means of completely draining the carburetor bowls during routine inspection is an important requirement.

g. Flow Testing of Carburetor Jets. All activities consider that flow testing equipment is necessary at all depots.

h. Forced Landings due to Water and Foreign Material in Carburetors. In general, few forced landings are reported, with the exception of the 94th Pursuit Squadron at Selfridge Field and the School Squadron at Maxwell Field.

i. Ice Formations. Very little trouble has been experienced with ice formations in service flying. Ft. Leavenworth reports two occurrences while the 17th Squadron at Selfridge Field reports icing in a few cases. Icing is considered to be worse on airplanes using the rammed V-1570 where no air heater is installed. Minnesota reports that carburetor air heaters on their O-38 airplanes are too small to be effective.

4. IGNITION.

a. Failures on SC-1 and V-AG Magneto. A great deal of difficulty has been reported by all activities with old type coil breakers and magnetos. Operation of the old type coil breakers becomes definitely unsatisfactory with old magnetos. It is believed that a program calling for the installation of house coils and pivotless breaker assemblies of magnetos will eliminate the major difficulties reported.

b. Magneto Temperatures. Temperatures sufficiently high to cause irregular operation were reported on P-26 type airplanes when the old type coils were used, while failures were also reported on A-3 type airplanes when the old type breakers were used.

c. Sealing Breaker Assemblies. Opinion is divided regarding the advisability of sealing breaker assemblies. However, the consensus of opinion appears to be that too much trouble is experienced with unnecessary adjustment. It is believed that the assemblies should be checked only at 20-hour and 40-hour periods.

d. Shielding. The Breeze conduit type of shielding appears to be preferred by all activities due to the fact that single wires can be replaced. Some objection was heard to the Breeze cup type spark plug terminal due to the collection of grease and dirt.

e. Ignition Cable. Experience has shown that the standard ignition cable is definitely unsuitable for pressure baffled air-cooled engines. The new high temperature cable appears to be satisfactory for all installations.

f. Spark Plugs. A great deal of difficulty was reported with Hurley-Townsend spark plugs. Many

activities believe that the standard production article is inferior to the service test articles. Modified HT plugs appear to be operating satisfactorily and it is believed that the HT-437 spark plugs will be suitable for use after the completion of the modifications. Excessive wear was reported on the center electrodes of the BG type plugs.

g. Shielded Type Spark Plugs. The majority of activities desire shielded type spark plugs, particularly on radio installations.

h. Spark Plug Testers. A universal desire appears to exist for small testers in each squadron.

i. Hours of Operation of Spark Plugs Before Removal. Many activities appear to believe that a definite time limit should be specified for spark plug operation, at the completion of which the spark plugs should be removed for reconditioning. It is evident that this requirement will become essential on current high output engines.

5. SUPERCHARGERS

a. Operation of turbo supercharged V-1570 type engines at Langley Field has been unusually satisfactory. It was agreed that the operation of these service test installations appeared to justify the procurement of additional turbo supercharged equipment.

6. FUELS AND LUBRICANTS.

a. Priming. Ether is not considered wholly satisfactory for priming at low temperatures. Tests will be made this winter with butane and propane. The Navy reports favorably on propane and it is believed that the winter test program will furnish valuable information in this regard.

b. Grade 140 oil. This grade of oil does not appear to be necessary for engines now in service and it was recommended that it be eliminated from the specification.

c. Grade 120 Oil. Operation, in general, of this oil has been very satisfactory. However, excessive carbon formations are becoming apparent on current production high output engines. It appears that better oil will be necessary in the near future. The present program of obtaining information from tactical and overhaul activities regarding the condition of engines after operation with different oils should be of great value in the present program to improve the quality of oil.

d. Grade 98 Oil. This oil is considered suitable for operation in moderately cold weather. This is the lightest grade oil considered suitable at the present time for operation in high output radial engines.

e. Grade 77 Oil. This oil does not appear to be light enough for cold starts at stations where temperatures get below 10°F. Oils are now being developed by the industry with flatter viscosity temperature curves, thus giving easier starting and quicker warm-up. They will also be sufficiently viscous at operating temperature to prevent excessive

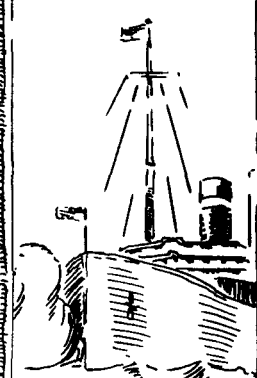
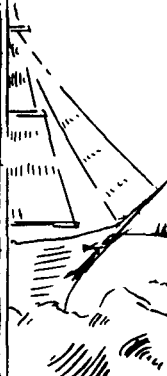
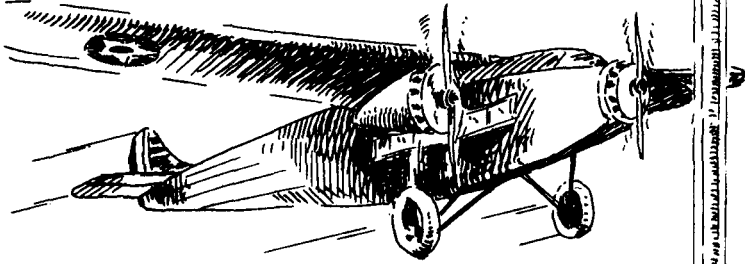
consumption. Light oil of this type appears to operate very satisfactorily in engines such as the V-1570 type. It is believed, however, to be too light for satisfactory operation in high output air-cooled radial engines, and it is believed that in such engines will contribute to excessive cylinder and piston ring wear.

f. Reclaimed oil. Opinion appears to be divided regarding the value of present oil reclaiming processes used by the Air Corps. The present service test of new and reclaimed oil, which will be initiated in the near future, should furnish the first definite information as to the operating characteristics of reclaimed oil as compared to those of new oil of similar type.

g. Rocker Arm Lubrication. The majority of activities that have used Specification 3570 rocker arm oil appear to consider it more desirable than the standard Air Corps rocker arm grease, especially when suitable power lubricators are available for servicing it to the rocker boxes.

h. Corrosion. Corrosion during operation does not appear to be as serious as in the past, evidently due to the fact that anodizing is being used on aluminum parts, while the Dichromate treatment has been applied to the majority of magnesium castings now received. A number of service activities still desire compounds such as heavy petrolatum for use in preparing engines for storage. The present slushing compound consisting of castor oil with a 2% addition of triethanolamine has proven very satisfactory in all tests conducted and it is believed that this slushing compound will entirely eliminate present corrosion difficulties. Operation of engines during the last 30 minutes of block testing on clear gasoline appears to be desirable and all activities report that it definitely reduces the tendency toward corrosion.

AIR CORPS



NEWS LETTER

F.C. BARRY - ART

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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 FORTHCOMING STRATOSPHERE FLIGHT ✓

In a radio address delivered over the National Broadcasting Company Blue Network on Saturday evening, April 20th, on the subject of this year's National Geographic Society-Army Air Corps Stratosphere Expedition, the Hon. George H. Dern, Secretary of War, said:

"Since the earliest times the War Department has handled many affairs far removed from the business of fighting or preparing for war. With the establishment of Army flying, opportunities to cooperate with other departments which do not possess a flying service have greatly increased the number of instances where the War Department has stepped out of its usual role.

Man first achieved flight in a heavier-than-air machine in 1903, and this conquest of the air has, during the short years which have since elapsed, come to be of such tremendous significance to the United States Army that its influence enters into our every major project and plan. Notable efforts have been made, recently, to extend the realm of heavier-than-air operations into the stratosphere. These efforts have been attended by many of the uncertainties which handicapped pioneer flights into the (troposphere) lower regions of the air.

The characteristics and capacities of large stratosphere balloons, such as have been used in several high altitude flights both here and abroad, offer especial advantages for obtaining the knowledge of the upper regions of the air so essential to a general utilization of high altitude flight by heavier-than-air machines. Since airplanes comprise the principal equipment of the Army, we are very much interested in securing sufficient knowledge to enable them to operate efficiently at very high altitudes. To this end the Army Air Corps cooperated with the National Geographic Society last July in making an exploratory flight into the stratosphere. Major William E. Kepner and Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, made this carefully planned and well executed flight and were well on the way to attaining a splendid success when unfortunate mishap overtook them at an altitude of 60,613 feet, where the fabric of the great balloon ruptured and caused the balloon to descend.

In the course of the descent these

three heroic aeronauts displayed their mettle by making every effort to effect a safe landing to save the valuable equipment and the data which had been obtained. Despite the fact that the failure of the balloon fabric became progressively greater and the balloon gained momentum in its descent, all three men stayed with the balloon and continued to do everything possible to retard its fall until complete collapse of the great bag compelled them to jump with their parachutes to save their lives. For their distinguished services, foresight and judgment displayed in this flight, the President awarded to Major Kepner, Captains Stevens and Anderson the Distinguished Flying Cross.

The War Department has kept in operation, through the past years, a small nucleus of lighter-than-air activities, although appropriations have barely permitted doing so. It is a satisfaction to me, personally, to know that this policy made possible the Department's cooperation with the National Geographic Society last year and will permit us again to join with them in a second effort to be made next June. Had it not been for the continued research and experimentation by the Army Air Corps in this branch of aviation, the Army would have been unable to undertake these important missions. The lighter-than-air personnel of the Army may well take pride in their accomplishments in the face of numerous handicaps. One reviewer has stated that in aviation the balloon has always served as the trail-blazer for the airplane.

The crash of the gondola of last year's stratosphere balloon destroyed many of the instruments and much of the data that had been obtained. However, much worthwhile knowledge was secured notwithstanding, and the aeronauts themselves gained invaluable experience. Their observation of the functioning of the instruments prior to the mishap indicated that, provided in this new attempt a safe landing can be effected which will preserve intact the records made by all the instruments carried, the data thus made available will yield the knowledge which will enable a worthwhile further advance in the conquest of the upper air.

It is to be regretted that Major V-6777, A.C.

Kepner, who made last year's flight, is unavailable this year. He desires to enter the Air Corps Tactical School next fall, and the transfer of his important duties at Wright Field to his successor will prevent his participation in this year's stratosphere flight. However, the other two members of last year's team, Captains Stevens and Anderson, are available and will make the flight next June. Assisting them as alternate pilot and ground control and meteorological officer will be Captain Randolph P. Williams, Air Corps, another able and experienced officer.

The services of these experienced and highly qualified airmen assures the highest skill and ability as ponderable factors making for success in this new effort. In addition, as a result of the studies which have been made of the causes of the structural failure of the balloon used last year, this new balloon will be of improved design and stronger construction. It will, I am told, be equipped with webbing suspension bands instead of ropes and have two gas valves each of the size of the single valve used last year. As a special safety measure, Lieut.-Colonel Edward L. Hoffman, Air Corps, will equip the gondola itself with a huge parachute of his own design, arranged to lower the gondola in safety in the event of accident to the balloon. And for the greater safety of the airmen, the National Geographic Society has procured helium for use in the next flight instead of hydrogen, which was utilized previously.

Many scientists throughout the United States have placed valuable data at the disposal of the Scientific Advisory Committee for the flight, and many Army personnel are cooperating with the officers who are to make the flight in order that everything may be done to assure success. Among the factors which may be expected to contribute to success are the notable prior achievements in similar lines.

And so we witness the unceasing efforts of our brave pioneers to open up new vistas of accomplishment. The past flights of manned balloons into the stratosphere have demonstrated their value in adding to our knowledge of this little known realm.

In closing I desire to express to the officers and members of the National Geographic Society the War Department's appreciation of the valuable efforts they have sponsored and are about to sponsor to obtain scientific knowledge calculated to advance the art of flying. It is an honor for the Army to be associated with this distinguished Society in such a notable work in behalf of the advancement of the world's knowledge.

I extend my best wishes for success to the Society, to the Air Corps and to the officers who are to make the flight.

I expect to be present to witness the

start of the stratosphere flight from Rapid City, South Dakota, next June, and to talk with the officers who will make the flight. To those of you who will not have this opportunity I desire to introduce these officers and to let them, at this time, say a few words to you of their hopes and plans. Captain Stevens, in addition to making last year's National Geographic Society-Army Air Corps Stratosphere Flight, has made high altitude airplane flights and, as early as 1922, made a parachute jump from 24,206 feet. Captain Anderson is one of a limited number of officers holding all four flying ratings bestowed by the Army Air Corps and is highly qualified in air navigation. Captain Williams also holds all four flying ratings and is an expert meteorologist. These officers will speak to you from Wright Field, Dayton, Ohio, where they are now busily preparing for their flight in June."

CAPTAIN STEVENS' REMARKS.

It is very kind of the Secretary of War to show so much interest in our coming stratosphere flight and to give so much attention to it. Our work so far has involved long hours of preparation, but we have been fortified by the knowledge that men in laboratories all over the country have been putting in just as long hours as we have. Several scientists have already arrived and have installed their instruments in the gondola. These instruments have been taken out and have been returned to their various makers for last minute adjustments and trial. The Cosmic Ray Apparatus of the Bartol Research Foundation, and the spectrographs of Bausch and Lomb have been placed. Today Mr. Hines arrived with the six Factograph Cameras that will record elevation, and temperature, and nearly a score of other things. Our Fairchild Aerial Cameras are ready, and are under prolonged test. This coming week, Mr. Morris, of the National Broadcasting Company, will install his high frequency radio transmitter. Our own Signal Corps Laboratory at Wright Field is building two extremely short wave transmitters that will broadcast on wavelengths of approximately 5 meters and $2\frac{1}{2}$ meters. The Bureau of Standards has finished the special containers, made of glass, protected by metal that will be used to trap samples of the upper air. The Bureau has also completed a new electrical resistance thermometer.

All of these instruments are to go in the Downmetal gondola that now is suspended in our laboratory here at the Materiel Division of the Air Corps. Although this year's gondola is a full nine feet in diameter, there will not be any space to spare when two of us get inside of it for the June stratosphere flight. More than four tons of lead in the form of tiny shot known as lead dust

will be used to keep the balloon from shooting skyward like a rocket. The ascent must be closely controlled in order to secure the most accurate readings of the many instruments.

Like a voyage to the lower depths of the sea, a flight like this needs the most elaborate and careful preparation, because the conditions under which we will work will be so far different than those on the surface of the earth.

Captain Anderson and Captain Williams are leaving at 4 o'clock tomorrow morning by airplane for St. Louis, where at 7 o'clock an 80,000-foot balloon will be ready for flight. At the present moment this balloon is being filled at Scott Field, Belleville, Ill. Weather permitting, a flight will be made tomorrow in the smaller balloon for the purpose of testing certain scientific apparatus, and on the completion of this flight Captains Anderson and Williams will bring the apparatus and data back here at Wright Field.

CAPTAIN ANDERSON'S REMARKS

To be chosen as a member of the crew of this year's National Geographic Society-Army Air Corps Stratosphere Expedition is an appreciated honor.

Since last summer's flight, much has been done in design, construction and method of operation to add to the safety of the next stratosphere project and to simplify piloting procedure. The substitution of helium, which is non-inflammable, for hydrogen as a lifting gas will entirely eliminate the hazard of explosion. The stronger fabric being used this year, together with an improved method of fabric folding, will diminish greatly the possibility of any bag failure. However, a large parachute is being installed on the gondola as an additional safety factor to the equipment and crew. Ballast in the form of lead dust will be discharged by a simple operation of an electric switch, and such of our equipment as will be used for ballast purposes can be released by cutting individual wires, permitting such equipment to float on parachutes, harmlessly, to the ground. There will be complete duplicate gas valve installations for releasing the lifting gas. These valves can be operated jointly or separately at any altitude.

Through these and other improvements, we believe that, despite the immense size of this craft, our piloting problems have been made quite simple and successful flight assured.

We look forward to the coming expedition with expectation of a very profitable and interesting experience.

Dr. Gilbert Grosvenor, President of the National Geographic Society, who spoke with the Secretary of War from the Army War College, after expressing the pleasure of the Society over being

again associated with the Air Corps in an expedition to explore the mysteries of the upper air, enumerated various expeditions sponsored by this Society across all the continents and all the seas.

"The stratosphere," he said, "is lifeless, lonely, and desolate. Yet only there may some emanations from the outer space be recorded in their full intensity. Such are cosmic rays and the ether waves which bring our words to you by radio.

Our problem is to lift a workshop and complicated tools, along with men who can live and work, to places in space which only a few years ago were deemed inaccessible. This workshop is a hollow ball 9 feet in diameter, made of metal lighter than aluminum, housing more than a ton of scientific instruments. To lift this workshop to its lofty position requires a balloon so large that three acres of rubber cloth were needed to fashion it."

After pointing out that the forthcoming stratosphere flight will mark the first time in history that a balloon inflated with helium instead of hydrogen will ascend into the stratosphere, Dr. Grosvenor stated that the wonder gas, helium, was first discovered in workable quantities in 1903, when a well that was being drilled in Kansas came through with a strong flow of natural gas. Great was the rejoicing in the village nearby—the discovery of the natural gas being hailed as the harbinger of great prosperity — but the joy was premature and short lived, for the goose that was about to lay the golden egg seemed to die before the egg appeared. To the consternation of all concerned, the gas was found to be non-inflammable and therefore worthless as fuel. It would not burn. Samples of the gas were sent to the University of Kansas for examination in order to discover the cause of its astonishing behavior. There it was found that the gas would not burn because it had a content of two percent of helium.

Natural gases containing helium have since been discovered widely distributed over the United States, but only a few localities have been found in which the quantity of helium in the natural gas is large enough to pay for the expense of extracting it. Thus far the United States is the only country in the world in which gases bearing helium in sufficient amount for profitable extraction to float enormous balloons and airships has been found.

By complicated and expensive machinery, the helium is removed from the natural gas as it flows from the earth, and then the remaining 98% of the gas is pumped through pipe lines to a market perhaps thousands of miles distant.

Our balloon has been made larger than any heretofore constructed in the hope that it may attain the utmost possible altitude, for each mile of height increases the scope and value of observations.

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TORSIONAL VIBRATION INVESTIGATION TO PROMOTE SAFETY IN FLIGHT
By the Materiel Division Correspondent

During the past several years, the Air Corps Materiel Division, Wright Field, has been active in the study of crankshaft torsional vibration in both in-line and radial engines. The ill effects of resonant vibrations are well known when they affect instrument readings, vibrate fuel lines and cause fatigue failures of engine mounts. However, when resonance occurs between the moving engine masses and the propeller, very little effect is noticeable to the pilot. For this reason, it is possible to operate an engine unknowingly in a resonant period for long intervals of time. The result is galling of the propeller cones and, in extreme cases, failure of the crankshaft or propeller because of the very high stresses set up.

It was necessary, before a remedy could be found, to develop a convenient means of recording the vibrations of the crankshaft while the engine is under load comparable to that of a propeller in the air. The development of a suitable instrument has covered a period of six years, during which time many possible methods were considered or tested. The final result is the Materiel Division Torsionometer now used by the Army and Navy and the large manufacturers of Air Corps engines. This device consists of a driving member adapted to engage the starter jaw of the engine, and a spring-driven flywheel whose rotation is sensibly constant. The relative torsional motions of the driving member and the constant-speed flywheel are utilized to actuate a stylus which rotates with the flywheel. The stylus thus draws a graph of torsional displacement vs. time. These records reveal the frequency and amplitude of torsional vibration and enable accurate determination of the critical resonant range of the crankshaft.

It has been learned that an in-line direct drive 6-throw crankshaft, such as in the Liberty engine, has 3 dangerous resonant periods, all having the same frequency. In the case of the Liberty, these were 1000 R.P.M., 1330 R.P.M. and 1710 R.P.M. At 1000 R.F.M., there are six vibrations; at 1330, $4\frac{1}{2}$ vibrations, and at 1710, $3\frac{1}{2}$ vibrations per revolution. The frequency in all these periods is 100 vibrations per second.

In the case of a direct drive 9-cylinder radial engine, such as the Wasp, it was learned that a dangerous resonant range exists approximately from 2200 to 2800 R.P.M. The frequency is 165 vibrations per second at 2200, and 210 vibrations per second at 2800 R.P.M. It is probable that the truly resonant period is about 2500 R.P.M., at which speed the frequency is 187.5 vibrations per second. In the Liberty engine, crankshaft failures occurred when operating near the

1330 and 1710 R.P.M. periods, while several failures have occurred in Wasp engines with flying propellers, at 200 R.P.M.

It has been determined that the propeller used has a vital effect on the resonant range, some propellers on the Wasp engines reducing the lower range from 2200 to about 2000 R.P.M. It is also found that all engines employing reduction gearing have lower resonant frequencies than do direct drive engines of the same type. In some of the geared engines this reduction of frequency was great enough to remove the resonant range entirely out of the cruising and full throttle range utilized in the air. In others, the resonant period was unfortunately placed where it was necessary to cruise for extended periods with the crankshaft in torsional vibration. As a result of this, cone galling and cracking of propeller blade shanks were encountered, with some actual failures chargeable to this cause.

The latest development is a remote control torsionometer, which could be operated by a pilot while flying. With this device it is believed the first actual flight records on an airplane engine have been obtained by the Air Corps. This instrument is being refined and will prove a very useful device, being much more convenient as well as faster and safer than the use of the original instrument.

This study has already resulted in making engines much safer in flight, and as a result of the knowledge obtained a very successful damping device has been developed by one manufacturer which prevents torsional vibration at any engine speed. In other cases, suitable changes in rigidity of crankshafts have removed dangerous periods to little used speed ranges and thus minimized danger of failure. Speed limitations have been placed on still other types in which no other remedy has yet been found. The constant aim has been to make Air Corps engines secure against mechanical failure due to crankshaft resonance in order that the pilot's confidence in his engine may be justified.

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THE BUILDING PROGRAM AT HAMILTON FIELD

To complete the building program at Hamilton Field, Calif., \$790,250 will be needed, according to Captain Howard B. Nurse, Constructing Quartermaster. His plans include the erection of a Post Exchange, \$50,000; Service Club, \$54,000; Gymnasium and Theatre, \$85,000; Bakery, \$17,250; Chapel, \$60,000; Public School, \$40,000; additional landing mats and paved aprons, \$250,000, and sprinkler service, \$234,000.

DETAILED DATA ON MANEUVERS OF SECOND BOMBARDMENT GROUP

The March 15th issue of the News Letter contained an account of the Maneuvers of the 2nd Bombardment Wing in the Fourth Corps Area during January, 1935. The following are some of the detailed data compiled by the Commanding Officer of the Group, Major B.G. Jones, Air Corps:

Mobilization.

The mobilization plans as prepared by the Groups were followed in clearing the home station, Langley Field. Three weeks were required for the mobilization of the Groups, although it is believed this should be accomplished in one week. To secure better results, however, will require more training in preparing mobilization plans and in carrying them out. Forty-eight hours for a Group to clear its home station should be set as the objective.

Troop Movements.

During the course of the maneuvers, the Pursuit units broke camp seven times each for White and Red, White averaging 3.3 hours and Red 3.7 hours for this operation. The White Bombardment averaged the same as the White Pursuit, although the Red Bombardment was able to improve upon this time, averaging 2.2 hours for breaking camp. It was found that establishing camp required less time than breaking camp, being accomplished in the following average times:

White Pursuit,	2 hours
Red Pursuit,	3.7 hours
White Bombardment,	4 hours
Red Bombardment,	1.5 hours

Note: While there is considerable variation in these times, the actual conditions at the respective camp sites undoubtedly influenced the time element.

While the above times for making and breaking camp obtained, it is interesting to note that for the White Pursuit Squadron no time was lost on this score, as duplicate camp equipment was provided and an advance echelon had camp made when the unit arrived, while a rear echelon broke the old camp after the departure of the planes. It is evident that this is a highly desirable procedure where the additional camp equipment can be made available.

Operations.

It was found that the Pursuit required an average of one hour to prepare for each operating mission, that is, refuel and clear airdrome, while the Bombardment required an average of two hours. It was found that Pursuit patrols sent out ahead to screen the Bombardment usually made the first contacts with each other. Usually the Bombardment was attacked prior to reaching its assigned objective.

Bombing missions were carried out at various altitudes between 2,000 and 10,000 feet. All bombardment missions (24) reached their objective. Three Bombardment planes per flight and nine per squadron - in the air - were found to be the most satisfactory formations. Sixteen planes per squadron, to give two flights of six in the air, are considered too many. Six-plane flights, with two elements of three planes each, make a more flexible squadron in the air but greatly increase the difficulty of handling the squadron formation. The added maintenance and ground personnel required make rapid shifts of base more difficult.

Camera guns were used to determine results, and 194 Bombardment planes were hit by Pursuit. Auxiliary tanks for Pursuit were found necessary for effective performance of missions. Therefore bombs, if carried, should be on wing racks.

For Pursuit squadrons, the 18 planes in the air, with three flights, each of two 3-plane elements, was found most satisfactory. A total of 121 Pursuit planes were hit by Pursuit and 76 by Bombardment. The Pursuit used the open "Vee" formation for search and the "String" formation for attack.

For Bombardment-Pursuit defensive, the best formation was found to be a 3-plane Bombardment formation with three 6-plane Pursuit flights above them, each in "String" formation. Due to their greater speed, these Pursuit flights fishtailed, and this made for a more effective protection for the Bombardment below. Five offensive Pursuit missions failed to contact the enemy. On two of these, no enemy planes were in the air.

When Bombardment airplanes were attacked while they were on the ground, the gun cameras mounted in the plane were manned. Also, both Bombardment and Pursuit mounted spare gun cameras on fence posts. By this "fire" from the ground, 237 hits were made against airplanes in the air as against 43 hits made against the airplanes on the ground. This would appear to indicate a superiority in daylight combat for the planes on the ground as against those attacking from the air. However, had the planes in the air used bombs against machine guns, quite a different result would have been obtained. Furthermore, in a maneuver between two forces from the same Groups, with identical radio and an intimate knowledge of each other's methods and habits, far more readiness to resist attack is to be expected than in actual warfare. In each Bombardment squadron three airplanes were kept on the alert, and in each Pursuit squadron from one to six airplanes.

Pursuit patrols were used as Observation. One radio plane was used above V-6777, A.C.

large formations to warn of approach of enemy and inform as to enemy's formation and movements.

Transport Airplanes.

Transport airplanes were used, in part, to make moves and carried loads as given below:

	(a) Passengers	(b) Load
C-4A	Pilot, Co-pilot and 12	3000 lbs.
C-12	Pilot and 4	1000 "
C-14	Pilot and 6	1600 "
C-24	Pilot and 6	1600 "
C-27	Pilot, Co-pilot and 10	2400 "
C-27A	Pilot and 10	2400 "

It was determined to be desirable to have transport airplanes capable of carrying ten men and their tents, baggage and two days' rations, also that the Transports should be equipped with controllable pitch propellers, slots and flaps to facilitate use into and out of small fields. In addition to the heavy Transport airplanes, each Group should have one light, very fast transport for urgent missions involving speed, such as supply of an emergency repair part or transfer of key personnel.

The following faults were found with Transport airplanes used in the maneuver:

C-12, cramped and uncomfortable for both passengers and pilot.

C-14, cabin poorly ventilated.

C-27A, poor seating arrangement (side benches).

All, except C-27 and C-27A, doors too narrow.

Trucks.

Due to shortage of 1½-ton trucks, a number of ½-ton were used to make moves between camps. The ½-ton truck does not lend itself well to loading, takes extra truck drivers and, due to the greater numbers required, makes an unwieldy train on the road which is difficult to control. A 200-mile move by truck was found to be the maximum that could be accomplished in one day, allowing for breaking and making the camp.

Camps.

The best arrangement for camp placed the tents on the prevailing wind side of the flying field and, therefore, out of the dust. The tents and airplane parks were kept off the prolongation of the best runway. Airplane parks were kept at least 150 feet away from tents and down wind to avoid dust in the tents. It is to be noted that the commercial use of the airports utilized in the maneuver prevented a dispersed parking of airplanes such as would be used under active service conditions.

Camp Procedure.

A two-day ration reserve was maintained, as far as possible. Perishable articles were purchased locally and used at point of purchase.

Straw mattresses made bulky, lumpy bedding rolls and the men were cold sleeping on them in temperatures as low as 20°. The best bedding, both as a roll for transportation and for comfort, is the Sleeping Bag, Type A-1, with pneumatic mattress.

Paper plates were found to be a desirable messing convenience. Paper cups probably will be found equally convenient.

To reduce items of mess kit, a combination fork-spoon is recommended, that is, fork on one end and spoon on the other.

Film Development.

Unavailability of running water and lack of an analysis to determine presence of injurious mineral substances in the water were great handicaps in developing gun camera film. The drying rack carried was not of adequate size. Low temperatures of weather required a means, which was lacking, of keeping developing fluid at best temperature. Special measures had to be used to prevent this fluid from freezing at night. As a rule, film was developed within 24 hours.

Communications.

Radio Set Type SCR-187 functioned excellently as a portable ground radio set when properly employed.

The maximum reliable range of the SCR-187 set ground to ground, when operated properly and with a suitable antenna is a mathematical function of the frequency used.

(a) Daylight on C.W.

Band	6640 KC Band	3560 KC Band	4300 KC Band
Reliable			
Range (miles)	0-50; 300-1000	0-200	0-500

In the above table 0-50, etc., indicates that communication was continuous under average conditions at all points from zero to fifty miles away, etc.

(b) Night on C.W.

Band	6645 KC Band	3560 KC Band	4300 KC Band
Reliable			
Range (miles)	0-30	0-200	0-100

Both the tables in (a) and (b) above assume clear channels with fair weather conditions. In very bad weather these distances were somewhat reduced, while on excellent days the maximum distances are too modest. For example, the Wing Station on the ground at New Orleans worked successful schedules with Langley Field on 4300 kcs., a distance of 930 miles, which is nearly twice the maximum distance stated for that frequency in table (a). Also in the 6645 band, voice communication works excellently throughout practically the whole ranges listed in V-6777, A.C.

table (a) for that frequency. This is not mentioned in the tables, however, because it is believed that voice should not be used in ground stations. Tone modulated signals were used on all frequencies for test with satisfactory results; CW is superior, however, due to narrower frequency band required, with consequent sharper tuning, greater distances obtainable with less power drawn from the source of power supply.

The only frequencies assigned were 3520 kcs. and 3650 kcs. During the late afternoon, and especially Sunday afternoons, these frequencies were completely jammed by amateur stations in the vicinity in which the Wing operated.

Where the distances involved are considerable, recommend the 4000-4400 kcs. band for daytime use. At distances where communication is desired to all points within a circle of 80 miles radius or less, recommend that the 400-800 kcs. coils be procured and used. These would provide continuous reliable communications for the shorter ranges, day and night.

For day use, 4300 kcs. was found to be the best frequency for the type of maneuver just engaged upon. For night use, the frequencies 2900-3500 kcs. possessed good carrying qualities, but no one frequency could be found that was clear at all times at all localities. The 3560 kcs. frequency was used most extensively, although we were considerably troubled by interference by amateurs.

Due to the high current drawn by the SCR-187 dynamotor, it would have been impossible to operate the transmitter more than a very few minutes when operating directly off the battery while it was not receiving a charge when, as a matter of fact, the Air Force Headquarters were separated from each other or from the Wing Hqrs. by distances varying from about 50 to 100 miles, and at least hourly schedules had to be kept.

Field orders and other long messages had to be handled by radio, due to the fact that no other means of communication was available. Schedules were also kept with Maxwell Field and, on some occasions, with Langley Field, so that on busy days the operation of the Wing Station installed in the OA-4A Amphibian airplane approached six hours of actual operations. Obviously, it was impracticable to run the engines of the airplane on the ground for the entire day's operation, so it was necessary to carry some type of power supply along for the operation of the ground net. PE-AA-49 power units not being available, the only power units on hand were the PE-CL-41 units. These were taken along, transported by truck convoy. As the permissible current to be drawn from the low voltage side is small, the dynamotor SCR-187 set could not be used, but by using the maximum high voltage possible by cutting out all resistances and by

speeding up the power equipment engine, power was drawn directly from the PE-CL-41 for the SCR-187 transmitter. Even then the receiving set was a continuous drain on the airplane battery which after a day or two of continuous operation would be dead. But as it was necessary to continue operations, the PE-CL-41 was again mustered into service. The leads on the battery side of the airplane voltage regulator control box were disconnected, and connection was made through the main line switch and a small ammeter to the low voltage side of the PE-CL-41 power unit, thus keeping a continuous charge of about 14 amperes into the airplane battery which was ample to keep the battery in excellent condition. When battery was fully charged, the main line switch was simply snapped off. A study of this circuit reveals that if the charging voltage suddenly fails for any reason, such as the stopping of engine of the power equipment, the voltage of the battery will be directly across the generator windings. Thus for safety to the generator, this circuit should be connected through a sure fire reverse current cut-out relay. The relay in the control box was not used for this purpose, due to unreliability of functioning. It was deemed more advisable to closely watch the charging current and open the main line switch if current started to decrease noticeably. With above modifications, power supply was adequate, except for the weight and bulk of the power equipment units, type PE-CL-41. Even the power equipment, type PE-AA-49, is too heavy (225 lbs.) for this purpose.

It is believed that a power equipment consisting of an E-3 airplane generator, equipped with a cooling fan and driven by a moderately high speed gasoline engine of just sufficient weight and size to turn the generator at 2750 r.p.m., its rated speed, should not, if properly designed, weigh more than 120 pounds. The cost of design of such equipment should not be material, as the radio set is entirely inoperative without a power supply which can be easily transported by air.

The power equipment units, type PE-CL-41, failed on several occasions, due to breaks in fuel lines, ignition difficulties, carburetion trouble, and the breaking down of the filter condensers across the output. The present condensers are not designed to withstand sufficient transient peak voltages, and frequently break down under the rated load of the units, although the remainder of the unit is built to withstand a considerable overload.

No maintenance difficulties were encountered with the three SCR-187 sets used in the Wing net. The set should be both operated and maintained by a radio operator and mechanic of better than average radio knowledge of tuning and

coupling of circuits. With that stipulation satisfied however, no difficulties of any nature were encountered.

In Bombardment airplanes the maximum reliable range of the SCR-183 radio set was:

1. 3100 KC band - 50 miles.
2. 6000-7000 KC band - 30 miles.

In this band, operation is nearly always possible beyond the first skip space, sometimes for hundreds of miles. Due to the apparent variation of the length of this first skip space, however, we have a distinct aversion to listing a greater reliable distance than that listed above for this band.

In Pursuit airplanes it was: Fifteen miles, if transmitting plane is in the air. If on the ground, five miles.

This is satisfactory only for command purposes within a Group formation, but not satisfactory for command communications in a wing formation, or, what is more important, for communication between a Group and its detached units, such as patrols, observers, etc., in the air, but not in the same formation. For this communication the power output of the BC-180 transmitter should be increased. It must be pointed out also that when a Group is operating from dispersed airdromes there is absolutely no communication between the Group Headquarters and the separate squadrons.

It is recommended that the power output of the BC-180 unit be increased, and that on airplanes such as Bombers, where larger fixed antennae can be mounted, that lower frequencies be used for greater reliability, that is, frequencies around the 3000 kc. band.

No difficulties were experienced in using the Department of Commerce communications facilities for disseminating weather data. Lack of practice was evident in using two-way radio communication. The radio beacons were utilized without difficulty.

Servicing of Airplanes.

Drums were satisfactory for reservicing Bombardment, but were too slow for Pursuit, unless extra pumps are furnished. This, however, would entail use of additional personnel. Drums should be spotted as near planes as possible, or vice versa, to save manhandling of drums.

Supplies and Equipment

- (1) Equipment needed but not taken:

Cans, G.I.

Buckets, G.I.

Typewriter, Portable, (1 per Sq.)

Insufficient number of camp cots taken. Frequent breaks in the wood used caused this shortage.

Brighter type of lantern was needed, similar to the gasoline lantern types. (Oil lantern unsatisfactory; no night maintenance in the field could be performed with this type lantern.)

Socket wrenches and box wrenches (at least one set per flight needed.)

Magneto gear puller (1 per squadron).

Suitable jack (1 per squadron).

Wrench for hold-down nuts between cylinder and block (P-3E).

24-inch Stillson wrenches.

Supply tent for White Pursuit Squadron.

Extra red lanterns.

Mallets for driving tent stakes.

Carpenters tools, hammer, saw, nails.

Rakes (2 per squadron).

Flashlights, 2 3/4-inch lens, complete.

One extra 1 1/2-ton truck per squadron.

Cross-country bag or some different type of container for enlisted men's personal equipment (Barracks bag unsatisfactory).

(2) Supplies needed but not taken:

Cylinder hold-down studs (Bombers).

C-2 Strainer (Bombardment).

Tail wheel assembly (B-6).

Light lubricating oil for wires and propellers.

Extra axle handles (at least one per axle).

Spark plugs (should be continuously supplied to a unit in the field).

Extra rope.

Writing paper (larger supply for each Sq. Hqs.)

Personnel:

Order of priority of assignment of enlisted men to --

- (1) Wing Headquarters.

(a) Wing Sergeant Major, Wing Operations Sgt. Major, Message Center Chief, 1st Sgt. Wing Hq. Det., N.C.O. in charge of Wing Truck Train, Truck Driver - 1 man.

(b) Chief Radio Operator, N.C.O. in charge of Wing Radio Net. - 1 man.

(c) Clerk, typist, truck driver + 1 man.

(d) Assistant N.C.O. in charge of Truck Train, Assistant Radio Operator, Mail Clerk, Truck Driver - 1 man.

(e) Stenographer, typist, messenger.

(f) Wing barber and orderly.

(g) Crew Chief, Wing Hq. Radio airplane; (not considered in order of administrative importance) - 1 man.

- (2) Group Headquarters -

(a) Group Operations Sgt. Major - 1 man.

(b) Group Sgt. Major - 1 man.

(c) Engineering Inspector, truck driver - 1 man.

(d) Radio Inspector and Operator, truck driver - 1 man.

(e) Armament Inspector - 1 man.

(f) Assistant Engineering Inspector, truck driver - 1 man.

(g) Clerk, typist - 1 man.

(h) Clerk, messenger, truck driver - 1 man.

- (3) A Squadron -

(a) Line Chief - 1 man.

(b) Crew Chiefs and Assistants - 1 man per engine.

(c) 1st Sergeant - 1 man.

(d) Mess Sergeant and Cooks - 4 men

(e) Operations and Administrative Clerks - 2 men.

- (f) Armament - 1 man
- (g) Radio - 2 men
- (h) Supply - 1 man
- (i) Ground echelon - varying number of men,

depending on number of trucks required. In Pursuit, these men greatly overlapped with crew chiefs, cooks, etc.

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REHEARSAL IN GERMANY OF PASSIVE MEASURES AGAINST AN AIR RAID

A report submitted by the Military Attache of the American Embassy in Germany describes the first rehearsal of passive measures against an air raid, recently carried out by orders of the Air Minister. This rehearsal consisted of two phases, first restricted illumination from 10 to 11 p.m., and complete darkness between 11 p.m. and midnight.

During the first phase some 4500 street lamps remained lighted. All windows and apertures in houses, factories and business premises had to be made light-proof with heavy cloth, cardboard or thick black paper. Electric signs and lights in shop windows had to be extinguished, and "light locks," that is, darkened spaces between an inner door or curtain and the outer door, had to be provided to prevent any projection of light from premises illuminated within.

During the second phase the only lighting in the streets was to be had from low-powered blue lights in 1000 selected standards. Head and tail lights on road and rail vehicles had to be covered except for an aperture between 2 inches and 3 inches long and less than an inch deep. Drivers were required to proceed dead slow. All trains within a radius of 50 miles of Berlin were similarly darkened.

From a vantage point on the roof of the Karstadt Building, one could easily recognize the change from full illumination to restricted illumination. With but a very few exceptions, lights in houses and establishments could not be seen, and street illumination became poor due to the reduced number of lights burning. A noticeable reduction in street traffic was also noted during this period, and street railways with their small dim lights were proceeding with great caution.

Witnessing the second phase of the exercise from an airplane flying over the city, it was noted that at 11 o'clock all street lights were extinguished and the city was in complete darkness except from neon lights on high structures in the vicinity of the air-drome, which was kept burning for the safety of the airplanes in the air.

The plane ascended to an altitude of 4500 feet and made several trips over the center of the city and around the city. Although it was a bright moonlight night, it was very difficult to see the city except that by very close and continuous observation one could distinguish the outlines of streets. The belief was expressed that the reflection of the River Spree and the various canals would have been the only means of identification of the city, and had it been a dark night even this would have been difficult. Another means of identifying the territory underneath as being

that of a city was the occasional flashes or sparks from the trolley wires, which of course would have shown up more clearly on a dark night than they did on the night of the exercise.

The complete darkening of a city the size of Berlin, such as was demonstrated in this exercise, would make it most difficult, if not impossible, for an air raid effectively to carry out a mission against a particular target in the city.

The most striking feature of the exercise and the thing that impressed all those who witnessed it from the air was the marked degree of discipline which prevailed among the civilian population, as indicated by the absence of lights throughout the entire city.

On the following day an Air Defense Exercise was conducted in one of the air defense districts into which Berlin is subdivided. This district is approximately 700 x 1000 meters and contains a population of approximately 50,000.

The purpose of the exercise was to test the passive air defense means which are organized by the Air Ministry under the name of Luftschutz (air protection). The Luftschutz forces are Police, Firemen, Technical Emergency Service (air defense section), Volunteer Air Defense Force, Medical First Aid Service.

The Police control the Luftschutz forces. In each district they have established an information center into which news of approaching hostile airplanes is reported over the regular telephone system.

At 10:00 o'clock on the morning of the exercise, the information center of the Kreuzberg area (No. 112) received word of the approach of an air raid. Immediately a police car with loud siren rushed through the district as a warning signal of approaching attack. All traffic in the district was stopped and all persons on the streets except police were directed to the nearest dugouts and inhabitants went into their gas proof shelters.

During the air attack and afterwards until the exercise was over, only such movement of traffic was allowed in the area as was occasioned by the activities of the Luftschutz agencies. A flight of light bombers flew over the area simulating an air bombing attack.

Simulating the effects of the bombing, smoke candles were lighted in several houses. Here the fire department went into action. The first aid service rescued several wounded and injured, dressed their wounds and evacuated them to the hospitals. In the streets large holes such as might have been made by a bomb had been prepared. These holes uncovered broken gas and water mains. Overhead high power electric lines were broken and lying on the street. All of these utilities

were quickly repaired by specially trained squads of the Emergency Technical Service.

Broken walls of certain houses in the area were restored and made safe by other squads of this Service, they being equipped with all the necessary tools, equipment and devices which were carried on special trucks.

Areas and houses which had been gassed were treated with a neutralizing agent by squads of the Volunteer Air Defense Force. These men all wore gas masks and rubber gas proof

suits.

Those who observed the exercises were impressed by the following points:

a. The great value of a system of definite procedure prepared for in advance of the bombing attack.

b. The importance of having the proper technical equipment and personnel prepared, trained and properly distributed.

c. The excellent organization of the Luftschutz forces.

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ASSISTANT SECRETARY OF WAR SPENDS SIX BUSY DAYS AT TRAINING CENTER

Arriving at 4:00 p.m., Friday, April 12th, from Hensley Field, Texas, in a Curtiss "Condor" Y-10-30, piloted by 1st Lieut. Townsend Griffiss, Air Corps, the Hon. Harry H. Woodring, Assistant Secretary of War, proceeded directly from the visiting ships hangar to inspect the officers and enlisted men of Randolph Field, who were drawn up in formation around the North Circle in front of the Administration Building, after which he retired to the quarters prepared for him at the Bachelor Officers' Club. After dinner at the Club, he spent the evening observing the student night flying.

Early Saturday, Secretary Woodring began a full morning by attending the reveille formation, setting-up exercises and breakfast formation of the Flying Cadet Battalion before he himself partook of breakfast at the Cadet Mess. He spent half an hour inspecting the flying and academic formations of the flying cadets; then he made a tour of the Primary and Basic Stages, where he inspected the curriculum of flying training, and was later whisked to the School of Aviation Medicine for a hurried visit. At 9:30 a.m., having completed a round of the field, Mr. Woodring left to inspect the outlying fields and was treated to the spectacle of a student flyer crashing through a fence and coming to a rest upside down on the railroad tracks beyond. Fortunately, the crash did not result in any injury to personnel. Returning to Randolph Field at noon, Mr. Woodring lunched at the Officers' Club, and a short time later departed for San Antonio by automobile.

Notwithstanding a day of bustling about, Mr. Woodring, ever on the move, was flown that evening to Fort Worth, where he was scheduled to speak. He returned to San Antonio by rail at 7:00 a.m. Sunday, Lieut. Griffiss having returned with the airplane the night before. Giving no sign of letting up in his activities, he took off with Lieut. Griffiss at 8:00 o'clock for a visit to Forts Brown and Clark, returning to Randolph Field late at night.

Another early breakfast Monday morning was the beginning of Secretary Woodring's busiest stay at Randolph Field. Leaving by airplane at 7:30 a.m., he spent the day inspecting Kelly, Duncan and Brooks Fields, returning at 4:00 p.m., and, following a visit to San

Antonio, he spent the evening observing the flood-light and flare landing phases of student night flying.

After inspecting the troops of the Second Division at Fort Sam Houston, Tuesday, Mr. Woodring departed at 9:00 a.m., Wednesday morning for Barksdale Field, La.

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ACTIVITIES OF THE THIRD PURSUIT SQUADRON

Giving a resume of the activities of the 3d Pursuit Squadron, stationed at Clark Field, Fort Stotsenburg, Pampanga, P.I., the News Letter Correspondent first enumerates the commissioned personnel now stationed at this field, viz: Major G.E. Brower, Commanding; Maj. P.J. Platt, Flight Surgeon; Captain C.W. Ford, Operations and Executive Officer; Lieuts. W.D. Old, C.W. Davies and F.L. Fair, Flight Leaders and, occupying various other positions, Lieuts. T.W. Steed, R.H. Ives, D.B. Wurtsmith, W.M. Morgan, J.H. Bundy, W.C. Morse, H.W. Bowman, J.E. Barr and J.B. Zimmerman. He then goes on to say:

We started the new year with maneuvers. On the morning of January 14th, 12 Pursuit airplanes and one observation plane took off for the Del Monte Pineapple Central, our headquarters in the northern part of the Island of Mindanao. We arrived that afternoon, only landing enroute to refuel at Iloilo. After our beautiful but long hop over water and tropical forests, the sight of the camp made ready for us by the enlisted personnel who had preceded us by boat, looked particularly good.

Our activities during the two weeks period of maneuvers consisted of inspection of landing fields pioneered by Lieuts. Old and Coleman, problems in radio communication and simulated defense against hostile aerial and naval forces.

Upon completion of maneuvers we made a flight to Zamboanga and Jolo from Del Monte, and returned to Clark Field by way of Cebu on Jan. 27.

On March 8th, a flight of Pursuit planes and the prescribed complement of officers and enlisted men under the command of Lieut. Old, engaged in a Gas Defense Manuever at an outlying field west of Fort Stotsenburg between the Zambales Mountains and the China Sea. Simulated war conditions governed the exercise. All planes were camouflaged; tents, supplies and personnel were concealed in natural and improvised shelters. Gas masks were donned at sound of gas attack alarm.

TEMPORARY PROMOTION OF AIR CORPS OFFICERS
Effective April 20, 1935

Squadron Commanders to Grade of Major

<u>Regular Rank</u>	<u>Name</u>	<u>Organization</u>
Captain	William V. Andrews	21 Obs. (LR Am)
Captain	Orin J. Bushey	64 Service
Captain	Roy W. Camblin	71 Service
Captain	John M. Clark	77th Pursuit
Captain	Earle J. Carpenter	1 Bombardment
Captain	John D. Corkille	8 Attack
Captain	Neal Crighton	9 Airship
Captain	Robert T. Cronau	20 Bombardment
Captain	Joseph H. Davidson	90 Attack
Captain	John M. Davies	9 Bombardment
Captain	Oliver S. Ferson	60 Service
Captain	Wm. C. Goldsborough	15 Observation
Captain	Benjamin F. Griffin	22 Observation
Captain	James L. Grisham	30 Bombardment
Captain	Arthur G. Hamilton	11 Bombardment
Captain	Caleb W. Haynes	37 Attack
Captain	Armin F. Herold	55 Pursuit
Captain	Virgil Hine	95 Attack
Captain	Harvey H. Holland	59 Service
Captain	Edwin J. House	94 Pursuit
Captain	Robert Krouch	12 Observation
Captain	Cornelius J. Kenney	57 Service
Captain	Westside T. Larson	52 Bombardment
Captain	Malcolm S. Lawton	49 Bombardment
Captain	Clarence B. Lober	19 Airship
Captain	Newton Longfellow	33 Pursuit
Captain	Frederick D. Lynch	62 Service
Captain	Jasper K. McDuffie	96 Bombardment
Captain	Leland W. Miller	61 Service
Captain	Warren A. Maxwell	56 Service
Captain	Edward M. Morris	13 Attack
Captain	William C. Morris	73 Attack
Captain	Devoreaux M. Myers	70 Service
1st Lt.	James E. Parker	27 Pursuit
1st Lt.	Charles G. Percy	79 Pursuit
Captain	Walter E. Peck	34 Attack
1st Lt.	Donald B. Phillips	14 Bombardment
Captain	Leo F. Post	99 Bombardment
Captain	Carl W. Pyle	76 Service
Captain	Edward W. Raley	5 Bombardment
Captain	George E. Rice	97 Obs. (C & A)
Captain	Harold D. Smith	31 Bombardment
Captain	Rex K. Stoner	35 Pursuit
Captain	George F. Tourtellot	17 Pursuit
Captain	Francis B. Valentine	100 Service
Captain	Alfred E. Waller	35 Pursuit

To the Rank of Captain

Intelligence and Operations Officers

1st Lt.	George R. Acheson	1 Bombardment
1st Lt.	F. Edgar Cheatle	99 Bombardment
2nd Lt.	Philip D. Coates	22 Observation
1st Lt.	Leo H. Dawson	27 Pursuit
1st Lt.	Henry W. Dorr	35 Pursuit
1st Lt.	John P. Doyle, Jr.	5 Bombardment
1st Lt.	John H. Dulligan	34 Attack
1st Lt.	Albert F. Glenn	13 Attack
1st Lt.	Leslie P. Holcomb	15 Observation
1st Lt.	Minton W. Kaye	73 Attack

Intelligence and Operations Officers (Continued)

2nd Lt.	Morris J. Lee	77 Pursuit
1st Lt.	Arthur J. Lehman	97 Obs. (C&A)
1st Lt.	Donald R. Lyon	11 Bombardment
1st Lt.	John H. McCormick	96 Bombardment
1st Lt.	George McCoy, Jr.	90 Attack
2nd Lt.	Douglas T. Mitchell	79 Pursuit
1st Lt.	John G. Moore	31 Bombardment
1st Lt.	John J. Morrow	9 Bombardment
2nd Lt.	Thomas S. Power	20 Bombardment
1st Lt.	Elwood R. Quesada	Hq. Sqdn. GHQ A.F.
1st Lt.	William A.R. Robertsen	14 Bombardment
1st Lt.	George F. Schulgen	33 Pursuit
1st Lt.	Robert R. Selway, Jr.	9 Airship
1st Lt.	Archibald Y. Smith	49 Bombardment
2nd Lt.	Sory Smith	55 Pursuit
1st Lt.	John M. Sterling	17 Pursuit
1st Lt.	Robert F. Tate	8 Attack
1st Lt.	Yantis H. Taylor	94 Pursuit
2nd Lt.	Lorry N. Tindall	12 Observation
1st Lt.	Stewart W. Towle, Jr.	21 Obs. (LR Am)
1st Lt.	Clarence D. Wheeler	36 Pursuit
1st Lt.	Willard R. Wolfenbarger	37 Attack

Engineering Officers - Captains

1st Lt.	Herbert K. Baisley	100 Service
2nd Lt.	Theodore M. Bolen	71 Service
2nd Lt.	Norman R. Burnett	57 Service
2nd Lt.	Philo G. Meisonholder	30 Service
2nd Lt.	Sammuel O. Redetzke	62 Service
1st Lt.	Charles B. Stone III	70 Service
1st Lt.	Milton M. Towner	61 Service
2nd Lt.	Hanlon H. Van Auken	56 Service
1st Lt.	Franklin C. Wolfe	76 Service

Supply Officers - Captains

1st Lt.	Alvord V.P. Anderson	70 Service
1st Lt.	Donald W. Buckman	64 Service
1st Lt.	Lambert S. Callaway	62 Service
2nd Lt.	Robert O. Cork	71 Service
1st Lt.	Joseph C.A. Tenniston	61 Service
1st Lt.	Norris E. Harbold	76 Service
1st Lt.	George W. McGregor	100 Service
2nd Lt.	William C. Mills	60 Service
2nd Lt.	George F. Schlatter	57 Service
2nd Lt.	Morley F. Slight	56 Service

Supply Officers - Captains

Group Organizations

1st Lt.	Thurston H. Baxter	20 Pursuit
1st Lt.	Donas T. Crow	9 Bombardment
1st Lt.	Dale D. Fisher	2 Bombardment
1st Lt.	Kirtley J. Gregg	17 Attack
2nd Lt.	James F. Newberry	12 Observation
1st Lt.	Edgar T. Noyes	7 Bombardment
2nd Lt.	Herbert H. Tellman	1st Pursuit
2nd Lt.	Lawrence C. Westley	3 Attack
1st Lt.	Roger V. Williams	19 Bombardment
1st Lt.	Russell A. Wilson	8 Pursuit

Addenda

1st Lt.	Cecil E. Henry	67 Service Sq.
To temporary rank of Captain		

OFFICERS ADVANCED TO RANK OF MAJOR

Intelligence and Operations Officers

	<u>Group</u>
Captain Charles C. Chauncey	3 Attack
Captain Ira C. Eaker	17 Attack
Captain Harold H. George	8 Pursuit
Captain Oliver P. Gothlin, Jr.	20 Pursuit
Captain William S. Gravely	12 Observation
Captain Harold M. McClelland	19 Bombardment
1st Lt. Harlan T. McCormick	1 Pursuit
Captain Walter J. Reed	9 Bombardment
Captain Lewis R.P. Reese	7 Bombardment
Captain Earl S. Schofield	21 Airship

Headquarters G.H.Q. Air Force, Langley Field

Captain Eugene L. Eubank
Assistant to Assistant Chief of Staff, G-3

Captain Lawrence P. Hickey
Assistant to Assistant Chief of Staff, G-1

1st Lt. Charles H. Howard, Communications Section.

Captain Arthur K. Ladd
Assistant to Assistant Chief of Staff, G-4

Captain Clements McMullen
Assistant to Assistant Chief of Staff, G-3

Captain Ennis C. Whitehead

Captain John F. Whiteley
Assistant to Chief, Inspection Section.

OFFICERS ADVANCED TO RANK OF CAPTAIN

Assistant Operations Officers

1st Lt. Joe L. Loutzenheiser	1st Wing
1st Lt. Dwight B. Schannep	2nd Wing
1st Lt. Nathan F. Twining	3rd Wing

Adjutant

1st Lt. Hoyt L. Prindle	2nd Wing
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Engineer and Armament Officers

	<u>Group</u>
1st Lt. Henry M. Bailey	3 Attack
1st Lt. Donald F. Fritch	8 Pursuit
1st Lt. Wentworth Goss	19 Bombardment
1st Lt. John N. Jones	9 Bombardment
1st Lt. Cornelius E. O'Connor	2 Bombardment
2nd Lt. Edwin S. Perrin	17 Attack
2nd Lt. Clark N. Piper	1 Pursuit
2nd Lt. Edwin W. Rawlings	12 Observation
1st Lt. James W. Spry	7 Bombardment
1st Lt. John A. Tarro	21 Airship
1st Lt. Manning E. Tillery	20 Pursuit

Flight Commanders

	<u>Squadron</u>
1st Lt. Walter E. Agee	11 Bombardment
1st Lt. Earl W. Barnes	55 Pursuit
1st Lt. William C. Bentley, Jr.	96 Bomb. C Flt.
1st Lt. Ralph O. Brownfield	15 Observation
1st Lt. Walter G. Bryte, Jr.	41 Obs. B Flt.
1st Lt. Cecil E. Archer	32 Bomb. 2d Flt.
1st Lt. Robert E.L. Choate	49 Bomb. C Flt.
1st Lt. Frank J. Coleman	94 Pursuit
1st Lt. Raymond E. Culbertson	53 School
1st Lt. James K. DeArmond	5 Bombardment
1st Lt. Daniel C. Doubleday	27 Pursuit
1st Lt. Richard I. Dugan	88 Obs. 3d Flt.
1st Lt. James A. Ellison	79 Pursuit

Flight Commanders (Continued)

	<u>Squadron</u>
1st Lt. Homer W. Ferguson	53 School
1st Lt. Rudolph Fink	17 Pursuit
1st Lt. Ralph E. Fisher	16 Obs. A Flt.
1st Lt. Karl G.E. Gimmler	27 Pursuit
1st Lt. Frederick E. Glantzberg	20 Bomb. A Flt.
1st Lt. Charles C. Goodrich	36 Pursuit
1st Lt. William T. Hefley	22 Obs. 1st Flt..
1st Lt. LeRoy Hudson	22 Obs. 2d Flt.
1st Lt. Paul M. Jacobs	17 Pursuit
1st Lt. Paul H. Johnston	99 Bombardment
1st Lt. Donald J. Keirn	9 Bombardment
1st Lt. Robert H. Kelly	12 Obs. 2d Flt.
1st Lt. Reuben Kyle, Jr.	12 Obs. 1st Flt.
1st Lt. Charles W. Lawrence	52 School
1st Lt. John F. McBlain	52 School
1st Lt. Carl B. McDaniel	46 School
1st Lt. Thomas B. McDonald	77 Pursuit
1st Lt. A.J. Kerwin Malone	95 Attack (A)
1st Lt. George P. Moody	1 Bombardment
1st Lt. Charles T. Myers	47 School
1st Lt. Emmett O'Donnell, Jr.	94 Pursuit
1st Lt. John J. O'Hara, Jr.	22 Obs. 3d Flt.
1st Lt. James F. Olive, Jr.	5 Bombardment
1st Lt. Budd J. Peaslee	35 Pursuit
1st Lt. David M. Schlatter	52 School
1st Lt. William L. Scott, Jr.	96 Bomb. A Flt.
1st Lt. Luther S. Smith	43 Pursuit (A)
1st Lt. Milton J. Smith	12 Obs. 3d Flt.
1st Lt. Edgar A. Simmyer, Jr.	33 Pursuit
1st Lt. John T. Sprague	49 Bomb. A Flt.
1st Lt. Allen R. Springer	30 Pursuit
1st Lt. Fred O. Tally	8 Attack
1st Lt. Edgar K. Todd	96 Bomb. B Flt.
1st Lt. Walter E. Todd	27 Pursuit
1st Lt. Robert F. Travis	49 Bomb. B Flt.
1st Lt. Louie P. Turner	37 Attack
1st Lt. Lee Q. Wassor	94 Pursuit
1st Lt. Robert B. Williams	30 Bomb. A Flt.
1st Lt. Charles G. Williamson	31 Bombardment
1st Lt. Harry E. Wilson	33 Pursuit

Operations Officer

1st Lt. Edmund C. Lynch	A.C. Primary Flying School
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OFFICERS ADVANCED TO RANK OF FIRST LIEUTENANT

(All Second Lieutenants)

	<u>Group</u>
<u>Adjutants</u>	
Thomas C. Darcy	8th Pursuit
John H. Ives	2nd Bombardment
Joe W. Kelly	1st Pursuit
Henry K. Mooney	20th Pursuit
Edward W. Suarez	7th Bombardment
<u>Communications Officers</u>	
Oliver S. Picher	35th Pursuit Sqdn.
<u>Radio Officers</u>	
John P. McConnell	20th Pursuit Group
<u>Photographic Officers</u>	
Kenneth B. Hobson, Comdg.	23d Photo Section
James F. Thompson, Jr.	Photo. Officer, 1st Sec.
<u>Armament Officers</u>	
<u>Squadrons</u>	
William J. Bell	56th Service
Paul W. Blanchard	57th Service
	V-6777, A.C.

Armament officers (Continued)

Leon R. Brownfield	15th Observation
Frederick E. Calhoun	13th Attack
Robert L. Carver	55th Pursuit
Kenneth R. Crosher	8th Attack
Loren B. Hillsinger	62nd Service
Harvey P. Huglin	90th Attack
Harold R. Maddux	79th Pursuit
Romulus W. Puryear	77th Pursuit
John R. Sutherland	20th Bombardment

Engineering Officers

Milton W. Arnold	90th Attack
Jesse Auton	73rd Attack
Joseph W. Baylor	99th Bombardment
John H. Davies	13th Attack
Richard A. Grussendorff	37th Attack
Marvin L. Harding	9th Bombardment
John T. Helms	95th Attack
David H. Kennedy	49th Bombardment
Hugh F. McCaffery	Hq. Sqdn. GHQ A.F.
Joseph A. Miller	96th Bombardment
Ernest Moore	77th Pursuit
David N. Motherwell	79th Pursuit
William O. Senter	20th Bombardment
Carl R. Storrie	88th Obs. L.R. Amph.
Dean C. Strother	55th Pursuit
Edward J. Timberlake	40th Attack
Birrell Walsh	31st Bombardment

Supply Officers

Charles H. Anderson	17th Pursuit
George D. Campbell, Jr.	88th Obs. L.R. Amph.
James H. Cunningham, Jr.	5th Bombardment
Carl F. Danberg	97th Obs. (C & A)
Gabriel P. Disosway	55th Pursuit
William M. Garland	31st Bombardment
Paul R. Gowen	77th Pursuit
Archibald J. Hanna	33rd Pursuit
Hunter Harris, Jr.	34th Attack
Richard T. King, Jr.	9th Bombardment
Lester L. E. Kunish	8th Attack
Stephen B. Mack	79th Pursuit
Andrew Meulenberg	15th Observation
Troup Miller, Jr.	20th Bombardment
Berkeley E. Nelson	36th Pursuit
Stoyte O. Ross	35th Pursuit
James S. Sutton	73rd Attack
Thomas L. Thurlow	30th Bombardment

STATION COMPLEMENTSCommanding Officers to Lieutenant-Colonel

Major Eugene A. Lohman	March Field
Major Martin F. Scanlon	Bolling Field

Commanding Officers to Major

Captain Fred C. Nelson	Selfridge Field
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Executive Officers to Major

Captain Bernard T. Castor	March Field
Captain Angier H. Foster	Barksdale Field
Captain Albert M. Guidera	Langley Field
Captain Dol L. Hutchins	Hamilton Field
Captain Horace N. Heisen	Rockwell Field
Captain James C. Shively	Scott Field
Captain Clarence C. Wilson	Mitchel Field

Engineering Officers to Major

Captain Harold W. Beaton	Rockwell Field
Captain Hugh C. Downey	Mitchel Field
Captain Albert C. Foulk	March Field
Captain Edward V. Harbeck, Jr.	Barksdale Field
Captain Aubrey Hornsby	Bolling Field
Captain James T. Hutchison	Langley Field
Captain Guy Kirksey	Hamilton Field
Captain Michael E. McHugo	Scott Field

Supply Officers to Major

Captain Shiras A. Blair	Mitchel Field
Captain George G. Cressey	Scott Field
Captain Robert H. Finley	Rockwell Field
Captain Alfred Lindeburg	Barksdale Field
Captain George G. Lundberg	Bolling Field
Captain Jesse A. Madarasz	March Field
Captain Harold A. McGinnis	Langley Field

Engineering Officers to Captain

1st Lt. Ernest K. Warburton	Selfridge Field
2nd Lt. Harold W. Grant	Brooks Field

Supply Officers to Captain

1st Lt. Alfred A. Kessler, Jr.	Selfridge Field
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Adjutants to Captain

1st Lt. Wilbur Erikson	Hamilton Field
1st Lt. Walter W. Gross	Rockwell Field
1st Lt. Joseph G. Hopkins	Barksdale Field
1st Lt. Milton M. Murphy	March Field
1st Lt. Earle E. Partridge	Selfridge Field
1st Lt. William L. Ritchie	Scott Field

Operations Officers to Captain

1st Lt. Harold Brand	Rockwell Field
1st Lt. Paul H. Kemmer	Hamilton Field
2nd Lt. Robert S. Macrum	Brooks Field
1st Lt. Howard Moore	Mitchel Field
1st Lt. Richard E. Nugent	Langley Field
2nd Lt. Minthorne W. Reed	Selfridge Field
1st Lt. Pearl H. Robey	Barksdale Field
1st Lt. Robert L. Schoenlein	March Field

Signal Officers to 1st Lieutenant

2nd Lt. Millard L. Haskin	Mitchel Field
2nd Lt. David W. Hutchison	Selfridge Field
2nd Lt. Millard Lewis	Hamilton Field
2nd Lt. Harold L. Smith	March Field
2nd Lt. Stanley R. Stewart	Brooks Field

Meteorological Officers to 1st Lieutenant

2nd Lt. Anthony E. Curcio	Rockwell Field
2nd Lt. Harry H. Geoffrey	Mitchel Field
2nd Lt. Torglis G. Wold	Selfridge Field

ASSIGNMENT OF GRADUATES OF A.C. TECHNICAL SCHOOL

Upon completion of their present course of instruction at the Air Corps Technical School, Chanute Field, Rantoul, Ill., the following-named Air Corps officers are assigned as follows: 1st Lts. Samuel V. Stephenson to Selfridge Field, Hilbert M. Wittkop to Randolph Field, 2nd Lieuts. Kurt M. Landon to Scott Field, Daniel W. Jenkins to Barksdale Field and Roy T. Wright to Brooks Field.

RANDOLPH FIELD'S PART IN ARMY DAY CELEBRATION

On the night of April 5th, a 12-ship formation from Randolph Field, Texas, fully illuminated, together with three ships of each type used at Kelly Field, flew over San Antonio in honor of Army Day. A radio program was broadcast from one of the bombers from 8:00 to 8:15, which was picked up and re-broadcast by radio station KTSA. It also went over the Southwest Net Work.

On the following day, April 6th, Army Day, Randolph Field flew a "USA" formation over San Antonio. Forty-eight ships were used to form the letters U, S and A. In addition, a 15-ship formation and a 3-ship formation were flown over the city at the same time.

For the remainder of the day, Randolph Field kept open house for the public, and airplanes were kept on the line for inspection.

As tending to show the enthusiasm with which the San Antonio public received the U S A formation, the following poem, by Mrs. C.A. Laufenburg, which was sent to the Randolph Field's Officers' Club, is quoted:

W I N G S

Nothing so great nor grand can compare,
To the majestic flight of our fleet in the air,
Flying the unknown ways on high,
With eagle wings of steel in the sky,
Watching in rapture the wonderful way,
That Randolph forms the U. S. A. -
Out of the shining ships made of steel,
Yearning to tell you how proud we feel,
As we stand at attention and upward gaze,
At the parade of ships along the sky-ways,
With hearts overflowing we upward fling,
To the men on high, a hymn we sing -
Of praise for an army, with men like these
That fly our fortress on liberty's breeze,
A defense for our country, the pilgrim's pride
An honor to those who for freedom have died.
And if to the unknown ways on high -
The bugle call came to do and to die,
We can see you fly o'er rocks and rills,
O'er mountain tops' and our home land hills,
To hold this Union so strong and great -
For freedom's cause, that no other fate,
Can o'ertake our land as long as you fly,
So bravely those ships of steel thry the sky,
We take off our hats to the wings of the air
And reverently bow our heads in prayer -
That war shall be ended and Liberty stand -
With its torch of faith, secure in our land.

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1ST WING, GHQ AIR FORCE, IN ARMY DAY CELEBRATION

Saturday, April 6th, found all units of the First Wing participating in the activities of Army Day. A composite squadron of Pursuit planes under Captain Ira C. Baker flew over the Metropolitan district, and, landing at Grand Central Air Terminal, remained on display during the afternoon. The 95th Attack Squadron was dispatched to Hamilton Field and

accompanied the 7th Bombardment Group in aerial maneuvers over San Francisco and vicinity. Miscellaneous aircraft of the Group appeared at various other airports throughout Southern California. Again, at night, the Pursuit planes engaged in a mock attack on the established camp at Griffith Park, Los Angeles. Newspapers reported that 100,000 people witnessed the demonstration at the Grand Central Airport.

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CONCENTRATION OF FIRST WING, GHQ AIR FORCE

April 13th marked the largest concentration yet to be effected by the 1st Wing. Units participating in the maneuvers were the Bombardment Groups from Hamilton and Rockwell Fields, the Attack Group from March Field, and the 88th Observation Squadron from Brooks Field, Texas. Ninety tactical planes in all were present for the exercises, which lasted two days.

On Sunday, the 14th, one of the largest crowds ever assembled on March Field saw the units engage in an aerial review for Brigadier-General H.E. Arnold, who had returned from Washington after receiving the Mackay Trophy. Later in the day, Major-General Paul B. Malone, Commanding Officer of the 9th Corps Area, arrived at March Field and was guest of honor at the Wing Snoker held that night and attended by all officers of the 1st Wing present on the field.

General Malone demonstrated his exceptional ability as a public speaker in an address at the banquet in which he expressed the amiable feeling of the line branches toward the Air Corps, emphasizing the fact that the success of the entire army depended on the unity of purpose and action of its various divisions.

The next day, General Malone made a tour of the station, inspecting equipment, installations, and troops of the Station Complement, and receiving an aerial review by the tactical units. In addressing General Arnold, General Malone remarked that it was the best demonstration of flying he had ever seen in the Air Corps. Following the review, visiting organizations left for their home stations, with the next concentration date set as May 4th.

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WORLD WAR PIGEON STILL ENJOYS GOOD HEALTH

It appears that the last resting place of Stumpy John Silver, famous World War pigeon, is to be the Aeronautical Museum at Wright Field, Dayton, Ohio. The Hawaiian Air Depot received word to that effect from the Chief of the Materiel Division. An inquiry directed to the pigeon lofts at Schofield Barracks, T.H., regarding Stumpy John revealed that he is still enjoying good health, despite his ripe old age of 18 years, so no definite date can be established as to when he will be taken to a taxidermist and ultimately shipped to his last resting place.

AIRSHIP TAKES OFF ON WHEELS

Recent tests were conducted at Langley Field, Va., for the purpose of determining how large a load could be lifted aerodynamically by applying the airplane principle of take-off to airships of the non-rigid type.

Until wheels were mounted under the car, it had been customary to rely almost entirely upon the buoyancy of the lifting medium to raise the ship sufficiently clear of the ground before applying the power of its engines. With the advent of wheels, it was soon discovered that a slightly heavy ship could "weather" minor shocks of the terrain and lift its load to flying altitude. The tests referred to were conducted with the TC-13 Airship (365,000 cubic feet capacity) equipped with two 375 horsepower geared engines, and the purpose was to determine to what extent the principle of aerodynamic lift could be applied to airships in taking off and the range increase to be expected therefrom.

The heavy take-offs were started at 1537 pounds with various conditions of "trim." It was noted that with light loadings the nose had to be trimmed down to overcome the thrust of the propellers as power was applied; that as the loads were increased the effect of propeller thrust became negligible, and unless the load was placed in the rear of the center of gravity an excessively long run had to be made before the elevators would take effect. The maximum load carried was 3,500 pounds with the nose trimmed "up" one degree and the engines running at full throttle. The length of the run was 375 feet, and the time 21 seconds. The speed at take-off was 40 m.p.h. (indicated).

In the second run with the ship loaded 1869 pounds heavy only and the nose trimmed down two degrees, the length of the run was 715 feet, the time 33 seconds and the air speed 64 m.p.h. at take-off.

These take-offs were made on the grass field adjoining the airship hangar at Langley Field. A drenching rain had soaked the field. Under these conditions, the excess loading of 3500 pounds appeared to be near the peak, as the rudders came dangerously close to striking the ground. However, a smooth, hard landing surface would no doubt slightly increase the loads which may be lifted aerodynamically.

In comparing the relative merits of the two methods of taking off airships, statically and aerodynamically, the latter method indicated that an additional 520 gallons of fuel can be carried. This increases the endurance of the TC-13 by 20 hours at 50 miles air speed. Its range in still air is increased by 1300 miles.

6th COMPOSITE GROUP IN PANAMA MANEUVERS

The annual maneuvers in the Panama Canal Department, in which the 6th Composite Group, Air Force, participated, have just been concluded. Lieut.-Col. L.H. Brereton, normally the Commanding Officer of the Group, was Commanding Officer of the mobile air force in the field of the Brown mobile force commanded by Major-General Lytle Brown. Lieut.-Colonel J.H. Houghton acted as Group Commander. Personnel from France Field, comprising 24 officers and 205 enlisted men, took the field.

All personnel and equipment were ferried to advanced airdromes by air transportation. This, considering the shortage of airplanes, was quite an accomplishment. Both officers and enlisted men subsisted on the field ration (iron) which consisted largely of hard tack and cheese and more hard tack and cheese. However, it was found that a hard day in the field and a little manipulation in its preparation made the ration fairly edible.

The 6th Composite Group camp at LaJoya was situated on the Arias Ranch, near the Pacora River. This river was utilized for swimming; in fact, even bathing. A fine rocky pool was discovered and utilized by almost everyone until one afternoon, when our intrepid local hunter and flight surgeon, Captain W. H. Scott, popped off a 7-foot crocodile who had joined and was mingling with the bathers.

Captain W.J. Davies was also slightly nonplussed on one occasion upon finding a fer-de-lance snake resting in his parachute.

Captain J.F. Guillett is now known as "Little Garcia," having distinguished himself by accepting a message from Col. Brereton for delivery to General Brown and then dashing off down the road on a motorcycle, completely passing up General Brown and disappearing in a cloud of dust and falling in the hands of the enemy. General Brown dryly remarked: "Some day that young man will get hungry and come back to eat, and we will find out what is in the message."

Other than the normal run of camp incidents, a few scorpions and the usual amount of tropical bugs, a good time was had by all. The morale was excellent, and certainly the command as a whole has been considerably hardened up. The maneuvers ended with a Department Review in honor of President Harmodio Arias of Panama. Some 8,000 troops with vehicles, animals and airplanes participated in the Review.

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Among the new officer arrivals at France Field, Panama, are Major Richard H. Ballard, Capt. George R. Geer, 1st Lt. William H. McArthur, 2nd Lt. Richard M. Montgomery, A.C., and Capt. Kenneth A. Brewer, Medical Corps.

PHILIPPINES A HUNTER'S PARADISE
By Captain Richard D. Reeve, A.C.

Many officers coming to the Philippines are not acquainted with the fact that these islands are a hunter's paradise. They are often advised to leave their firearms at home when in reality, if one loves the chase, he should bring all his guns with him.

Many different varieties of bird and game shooting are to be found throughout the group of islands. In the vicinity of Manila and on Nichols Field, in fact, excellent snipe shooting is to be had in the fall of the year. And are they good eating! In all other parts of the islands away from the settled areas, excellent pig and deer shooting is to be had. Officers hunting in the northern provinces have reported seeing from fifty to seventy-five in a day. They range in size, varying from 60 to 250 pounds, depending on the region and forage. Wild pig will run from 50 to 400 pounds. Monster pig, probably the real wild boar species, have been reported killed on the Island of Palawan, ranging up to 500 pounds, with tusks a good 8 or 9 inches long.

The real deluxe hunting is to be found on the Island of Mindoro, the only place in the world where the tamaraw is found. It is a species of buffalo, weighing from 400 to 700 pounds, resembling the carabao except for the fact that it lives in the hills and mountains rather than the swampy plains, as do the buffalo. They are extremely wild and fierce. Hunting parties in the past few years have reported various encounters. One officer, charged by two of them, killed one at 1500 feet and the other at 20 feet. The writer on a trip last year saw a wounded tamaraw charge a native beater, going him in the chest, with the result that the Filipino spent three months in the hospital. This year a native Manyan escaped the charge of a tamaraw only through being just a little too quick. Deer and wild pig are also plentiful. A party recently returned with four nice heads, also many deer and pigs. Hunting is very difficult because of the extreme heat and the rough country traversed.

In the Mindanao province excellent duck hunting is to be found. Several hunters have returned with nice bags.

Excellent deep sea fishing is also to be had. The writer is not an authority on that subject. However, you fishermen bring all your equipment, otherwise you will miss a lot.

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An "Aloha" flight in honor of Major General Hugh A. Drum, was staged by Army pilots from Wheeler Field upon the occasion of his arrival to assume command of the Hawaiian Department. Following a Wing Review over the Transport REPUBLIC, Pursuit units passed over forming a huge letter "D."

19th COMPOSITE WING IN PANAMA MANEUVERS

The work of the 19th Composite Wing during the annual maneuvers of the Panama Canal Department was highly praised by the Commanding Generals of both sides, Major-General Lytle Brown (the Brown Commander) and Brigadier-General John W. Gulick (the Blue Commander), at a critique attended by all officers of the Department at the end of practically a month of strenuous field activities.

The maneuvers began on March 6th, and during the first phases the Wing operated from its home stations, Albrook Field and France Field. During the latter phase, the 8th Composite Group was attached to the Mobile Force (Brown) attacking the Zone from a base at Chepo, Republic of Panama, while the 16th Pursuit Group (44th Observation Squadron attached) was attached to a Provisional Coast Artillery Brigade (Blue), the defender. Without interruption of operations, the 6th Composite Group moved by air and truck first to Chepo and then to a field at LaJoya. The 16th Pursuit Group, also without interruption of its operations, moved to a field at La Chorrera.

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 closed with a review on March 30th, when approximately 8,000 troops were massed at Albrook Field. The 19th Composite Wing participated on foot, in motor vehicles and in the air. The ground element, formed as three infantry battalions and a convoy of 33 motor vehicles, was commanded by Lieut.-Colonel Junius H. Houghton, while the air element, comprising the entire aircraft strength of the Panama Canal Department, was commanded by Colonel McChord, flying a P-12E.

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FLYING TRAINING FOR YOUNG MEN IN ITALY

According to reports, of the total of 433 young Fascists who were enrolled during 1934 for training as pilots, 391 qualified, 46 were eliminated for various reasons and one was killed. These students made 53,644 flights for a total flying time of 10,212 hours.

It is interesting to note that practically 90% of student pilots enrolled were brevetted as "pre-military pilots." The average time was approximately 25 flying hours per student.

Upon being called for military service (during 21st year age) these "pre-military pilots" will be sent to the central flying school now at Grottaglie. At this school an additional course of about 50 hours flying with transition to service types is given. The successful

pilots are then rated "military pilots" and sent to Specialty schools (pursuit or bombardment) or to combat squadrons for additional flying training and eventually squadron flight duty.

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FLIGHTS BY FIRST PURSUITERS ON ARMY DAY

The First Pursuit Group, Selfridge Field, Mich., staged two tactical problems on April 6th (Army Day) for the purpose of performing demonstration flights over Detroit and Chicago. The first flight took off at 11:00 a.m., under the command of Captain George P. Tourtellot, and consisted of 18 P-26A Pursuit planes. This squadron performed a tactical mission during the period 11:00 - 11:45 a.m., rendezvousing over Detroit at 11:50 and flying over the line of march at exactly 12:00 noon. This completed, the squadron continued the original mission and landed at the home airdrome 12:45 - 1:15 p.m.

A second flight of 18 P-26A planes took off from Selfridge Field at 1:30 p.m., under the command of Lieut.-Col. Ralph Royce and worked a tactical problem en route to Chicago, Ill., timing their arrival there so as to fly over the parade at 3:30 p.m. This flight was grounded in Chicago from April 6th to 9th, due to bad weather - heavy dust and rain storms. None of the pilots in the earlier flight on Army Day participated in the second flight, due to the shortage of airplanes and the desire to have training progress as even-ly as possible for all pilots of the Group.

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ANOTHER ERRAND OF MERCY FOR ARMY AIRMEN

The value of the airplane as an ambulance, especially in countries where roads are few and difficult, was again demonstrated by personnel of the 19th Composite Wing, Albrook Field, Panama Canal Zone, on the night of April 5th. Shortly before dusk, the Commanding Officer of Company A of the 11th Engineers telephoned from Agua Dulce, Republic de Panama, to the Commanding Officer of Albrook Field that one of his soldiers was in a critical condition and was not expected to survive the night unless he could receive hospital treatment.

Despite the fact that there are no lighted airways across the jungles of Panama, lighted fields or even lights brighter than kerosene burners in the towns themselves, Captain H.E. Rice, pilot, with Major C.L. Chase, Flight Surgeon, and Staff Sergeant Roby C. Davis, 29th Pursuit Squadron, Crew Chief, took off for Agua Dulce in a C-9. It was "just" dark when the transport landed in the unlighted field

at Agua Dulce and took on board the patient, Sergeant A.J. Schaffler, a member of a mapping detail.

Captain Rice negotiated the take-off from the unlighted field without incident and covered the 100 miles to Albrook Field within an hour. The soldier was rushed to the Gorgas Hospital where it was determined that, after all, he was not suffering from appendicitis. However, he was a very sick man and his physicians agree that he would not have survived the night had the C-9 not negotiated the night flight over the jungles.

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WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Randolph Field, Tex.: Brig. Gen. James E. Chaney, from Office of the Chief of the Air Corps, to assume command of the Air Corps Training Center.

To Hamilton Field: Capts. Carlyle H. Ridenour and Delmar H. Dunton from Rockwell Field.

To March Field: 2nd Lieut. Lloyd H. Watnee from Hamilton Field.

To Bolling Field: Captain Jack C. Hodgson, upon completion of course of instruction at Army Industrial College.

To Los Angeles, Calif: Captain R.F. Giles, upon completion of present course of instruction at Air Corps Tactical School, as Instructor of Air Corps, California National Guard.

To Materiel Division, Wright Field: 1st Lt. Paul E. Kemper, from Hamilton Field.

To Langley Field, Va.: Major Alonzo M. Drake, 80th Service Sqdn., Panama. Relieved from temporary rank upon leaving Panama.

To Maxwell Field: Captain Bayard Johnson, from M.I.T., Cambridge, Mass.

To Rockwell Air Depot: Captain Harold H. Carr from Scott Field.

To Panama Canal Dept.: Capt. Isaac J. Williams, A.C. Detachment, Ft. Lewis, Wash.

To Houston, Texas: Col. Theodore A. Baldwin, for recruiting duty. Previous orders revoked.

To Huntington, W. Va.: 2nd Lt. James H. Cunningham, Jr., from Mitchel Field, assigned to duty with Corps of Engineers.

To Hawaiian Department: Major Hume Peabody, from Army War College, July 30th; 1st Lieut. Kingston E. Tibbetts, from A.C. Technical School, Chanute Field.

PROMOTIONS: To Major: Captain Stephen J. Idzorek, rank from March 24, 1935.

To 1st Lieut.: 2nd Lieuts. George G. Northrup, rank March 24th; Thomas S. Power, March 30th; Lloyd H. Watnee, March 31st; Philip D. Coates, Tulma W. Inlay, John H. Bundy, Mills S. Savage, Harold W. Bowman, Lorry N. Tindal, Merlin I. Carter, James W. Sessums, Jr., Charles K. Moore, Austin A. Straubel and Wycliffe E. Steele, rank from April 1, 1935.

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Captain Karl S. Axtater, Scott Field; 1st Lts. Wilfred J. Paul, Langley Field, and John G. Salsman, Fort Bragg, N.C., were ordered to Randolph Field for heavier-than-air training with class starting July 1st next.

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GENERAL CHANEY ASSUMES COMMAND OF THE AIR CORPS TRAINING CENTER

The assignment of Brigadier-General James E. Chaney, Air Corps, who for the past four years was on duty in the Office of the Chief of the Air Corps, to the Air Corps Training Center, Randolph Field, Texas, May 1st, to assume command, takes him back to familiar surroundings, for nearly five years ago he completed dividing up a four-year tour of duty at both the Primary and Advanced Flying Schools at San Antonio.

General Chaney was born March 16, 1885, in Maryland. After attending Baltimore City College for three years, he received an appointment to the United States Military Academy.

Upon graduating from West Point in 1908, he was commissioned a 2nd Lieutenant and assigned to duty with the 9th Infantry.

During the period of time between 1908 and 1914, he served a tour of duty in the Philippine Islands, was on duty as an instructor at the U.S. Military Academy for four years, and on duty at the American Embassy, Madrid, Spain, for five months.

Promoted to 1st Lieutenant in July, 1914, he was attached to the 30th Infantry. Six months later, in December, 1914, he was assigned to the 25th Infantry, with station at Schofield Barracks, Honolulu, T.H., where he was in command of a company for two years.

On his next change of station, General Chaney was assigned to duty at Chanute Field, Rantoul, Ill., where he reported on October 16, 1917. He only served several weeks at this station, for on November 6th he was transferred to Columbus, Ohio, and assigned to duty as Commandant of the School of Military Aeronautics, Ohio State University. He had been promoted to Captain on March 22, 1917, and on August 5th of that year received an appointment as Major, Signal Corps.

Transferred to Washington, D.C., on June 13, 1918, he was assigned to duty in the Office of the Director of Military Aeronautics as Executive Officer in the Operations Section. This assignment was of brief duration, for several months later he sailed for duty overseas, and from September 4, 1918, he served with the American Expeditionary Forces, being on duty at Tours; Paris; at the Air Service Production Center No. 2, where he received flying training; with the 3rd Army as Chief Air Service Officer, Service of Supply; as Commanding Officer of the Airdrome at Coblenz, Germany; and as Aviation Officer under the Commanding Officer, Provisional District of Great Britain, at London, England.

From October 8, 1919, to June 5, 1924, General Chaney served as Assistant Military Attache at Rome, Italy, where he was on very cordial terms with the officers directing the Italian Royal Air Force.

Transferred to Langley Field, Va., General Chaney attended the Air Corps Tactical School at that station and graduated in June, 1925. He was then assigned as student at the Command

and General Staff School, Fort Leavenworth, Kansas, from which he emerged in June of the following year as an honor graduate.

From June 24, 1926, to July 15, 1927, he served as Commandant of the Air Corps Primary Flying School at Brooks Field, Texas, and from July 16, 1927, to July 30, 1930, as Commandant of the Advanced Flying School at Kelly Field, Texas.

General Chaney was next assigned as student at the Army War College, Washington, D.C., and upon his graduation from this institution in June, 1931, he was assigned to duty in the Plans Division, Office of the Chief of the Air Corps. He was promoted to Lieutenant-Colonel, February 1, 1932.

From January 29 to June 1, 1932, he was on duty as military adviser to the delegation to the General Disarmament Conference at Geneva, Switzerland,

In the operation of the Air Mail by the Army Air Corps from February to May, 1934, General Chaney was assigned to duty as Executive Officer on the staff of General Westover, Officer in Charge.

General Chaney received his promotion to his present rank on July 17, 1934.

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WILEY POST JUST WON'T TALK ✓

Wiley Post paid a visit to the 113th Observation Squadron, Indiana National Guard, at Indianapolis, after he was forced down in his third attempt to make a record coast to coast flight in the stratosphere. According to the News Letter Correspondent, his supercharger went "haywire" when he was somewhere near Cincinnati, Ohio, after his motor had coughed a couple of times. Also, his oxygen equipment was not functioning properly, and in feeding oxygen too rapidly it caused the glass window in his stratosphere helmet to fog up, thus giving him practically no visibility. As he could not get his hands inside the helmet, his only available windshield wiper was his nose. After using his nose as a mechanical accessory to the plane for a considerable length of time, it became somewhat indifferent if not sore, likewise his neck.

Knowing that he had crossed the Indianapolis-Chicago radio beacon line, he began to lose altitude and look for a field, and quite conveniently the Lafayette airport on the Purdue campus came into view. After circling the field a few times to be sure it was clear, and to find a spot smooth enough to land without a landing gear, he sat it down for a perfect belly landing without any damage to the plane.

Capt. L.I. Arnetz helped him off with his elaborate headgear, and brought him over to attend our regular drill, accompanied by Dr. Arnet of the State Armory Board. Naturally, we all anticipated an opportunity to hear his story of the flight, but when he modestly declined, we gave him the usual "So you won't talk, eh?" and turned to Capt. Arnetz and Dr. Arnet for short talks.

RECIPIENTS OF THE DISTINGUISHED FLYING CROSS

Up to this writing, the following-named personnel have been awarded the Distinguished Flying Cross:

For extraordinary achievement while participating in aerial flight

AIR CORPS

Captain St. Clair Streett
 1st Lieut. Erik H. Nelson
 1st Lieut. Clarence E. Crumrine
 1st Lieut. Clifford C. Nutt
 1st Lieut. Ross C. Kirkpatrick (posthumously)
 Master Sergeant Joseph E. English
 Sergeant James D. Long

Alaskan Flying Expedition. Pioneering flight from Mitchel Field, L.I., New York, to Nome, Alaska, and return, July 15-October 15, 1920.

 1st Lieut. James H. Doolittle

On September 4 - 5, 1922, he accomplished a one-stop flight from Pablo Beach, Fla., to San Diego, Calif., in 22 hours and 30 minutes elapsed time, an extraordinary achievement with the equipment available at that time. By his skill, endurance and resourcefulness he demonstrated the possibility of moving Air Corps units to any portion of the United States in less than 24 hours.

 Captain John A. Macready
 1st Lieut. Oakley G. Kelly

For successfully completing the first non-stop flight across the American continent in the history of aviation. Departed from Mitchel Field, N.Y., at 12:36 p.m., May 2, 1923, in the Army airplane T-2. Encountering practically every hazard of flying, and displaying remarkable ingenuity, skill and perseverance in overcoming the many handicaps imposed upon them by the elements and the mechanical equipment used, they arrived at Rockwell Field, Coronado, Calif., at 12:26 p.m., May 3, 1923.

 Captain Lowell H. Smith
 1st Lieut. John P. Richter

Pioneers in establishing the practicability of refueling airplanes while in flight. On June 28-29, 1923, they piloted an airplane refueled in flight for 37 hours, 15 minutes, 14-4/5 seconds, breaking the endurance record, the speed records from 2500 to 5,000 kilometers, and the distance record (5300 kilometers).

 1st Lieut. Russell L. Maughan

For fastest time ever made by man between New York and San Francisco. Departed from Mitchel Field, N.Y., at 2:58 a.m. EST, June 23, 1924, in a modified Pursuit type airplane on Dawn to Dusk flight and landed at Crissy Field, Presidio of San Francisco, Calif., at 9:47 p.m., Pacific time, same date. Flew 2540 miles in 21 hours, 48 1/2 minutes.

1st Lieut. Harry A. Sutton
 Between December 15 to 22, 1926, at Santa Monica, Calif., Lieut. Sutton, at great personal hazard, piloted an O-2 airplane in tests to determine the spinning characteristics of this type of plane, which resulted in invaluable data being made available to airplane designers. These tests were voluntary and above the call of duty.

 Major Herbert A. Dargue
 Captain Ira C. Eaker
 Captain Arthur B. McDaniel
 Capt. Clinton F. Woolsey (posthumously)
 1st Lt. John W. Benton (posthumously)
 1st Lieut. Muir S. Fairchild
 1st Lieut. Charles McK. Robinson
 1st Lieut. Leonard D. Weddington
 1st Lieut. Ennis C. Whitehead
 1st Lieut. Bernard S. Thompson

For participation in the Pan-American Flight, December 21, 1926, to May 2, 1927. They displayed initiative, resourcefulness and a high degree of skill under many trying conditions encountered throughout the flight. Their tireless energy, sound judgment and personal courage contributed materially to the successful accomplishment of this mission of good will.

 Captain Charles A. Lindbergh, Reserve
 In recognition of his courage, skill and resourcefulness in piloting unaccompanied "The Spirit of St. Louis" from New York across the Atlantic Ocean to Paris, France, a distance of 3,600 miles, the longest non-stop flight ever made by man.

 1st Lieut. Lester J. Maitland, pilot.
 1st Lieut. Albert F. Hegenberger,
 co-pilot and navigator.

By masterly skill, courage, endurance and tenacity of purpose, they successfully navigated an Army airplane June 28-29, 1927, from Oakland, Calif. to Honolulu, Hawaiian Islands, over the greatest expanse of open sea yet crossed in a non-stop flight. With full knowledge of the dangers and difficulties, they traversed over 2400 miles of the Pacific Ocean with marvelous accuracy of direction and thereby demonstrated conclusively the practicability of accurate aerial navigation.

 Arthur C. Goebel, 2nd Lieut. Reserve
 On August 16-17, 1927, he piloted an airplane on a non-stop flight from Oakland, Calif. to Wheeler Field, T.H., a distance of 2400 miles, in 26 hours and 17 minutes.

 1st Lieut. Carl B. Eielson, Reserve
 As pilot he accompanied Captain George H. Wilkins (an English subject) from Point Barrow, Alaska, to Dead Man's Island, Archipelago of Spitsbergen, April 15-16, 1928, without stop, a distance of more than 2200 miles. The severity of the weather, the storm area through which they passed, with no hope of outside aid

in case of a forced landing, and the complete success of the enterprise distinguishes it as one of the most extraordinary accomplishments in aviation history.

2nd Lieut. Dean Cull Smith, Reserve

As one of the pilots of the 1928-1930 Byrd Antarctic Expedition, he made numerous flights over the Antarctic regions in the face of the gravest danger.

Captain Ashley C. McKinley, Reserve

As photographer for the 1928-1930 Byrd Expedition, he participated in the face of the very gravest danger in numerous flights over the Antarctic regions, which culminated in the flight with three companions to the South Pole, November 28-29, 1929.

Major Carl Spatz, Commanding Officer
1st Lt. Harry A. Halverson, Relief Pilot
2nd Lt. Elwood R. Quesada, Relief Pilot
Staff Sgt. Roy W. Moore, Mechanic

On January 1-7, 1929, they participated in the refueling duration flight of the airplane "Question Mark," at and near Los Angeles, Calif., remaining in the air a total of 150 hours, 40 minutes, 15 seconds, a period of continuous flight longer than any previous flight ever accomplished.

Captain Donald L. Bruner

By his vision, initiative, courage and perseverance, he rendered exceptionally valuable services to the Government of the United States by developing and perfecting night flying equipment, thus making it possible for military and commercial planes to traverse the length and breadth of the United States during the hours of darkness.

Major William E. Kepner, Pilot
Capt. Albert W. Stevens, Scientific Observer
Capt. Orvil A. Anderson, Alternate Pilot and Scientific Observer

After reaching an altitude of 60,613 feet during the National Geographic Society - Army Air Corps Stratosphere Flight, the balloon became disabled. Under the most adverse and hazardous conditions, attempt was made to land the disabled aircraft in order to preserve the scientific records obtained. By the exercise of cool judgment and foresight under these conditions, certain scientific records were saved and the balloon was abandoned only when it was clearly evident that not to do so would prove disastrous to human life.

OTHER PERSONNEL

Capt. Ernest L. Smith, Specialist Reserve

On July 14-15, 1927, he piloted an airplane on a non-stop flight from Oakland, Calif., to the Island of Molokai, Hawaii, a distance of 2340 miles, in 26 hours, 36 minutes, thus first demonstrating the possibility of communication between the United States and the Hawaiian Islands with small commercial planes.

Col. Francesco de Pinedo, Italian Air Force
Successfully negotiated the dangers of Trans-Atlantic flight, courageously crossing the jungles of Brazil and overcoming countless other obstacles, thereby completing a journey of 25,000 miles by flying boat, in the course of which he arrived in the United States in March, 1927, by air from Rome, Italy.

Lieut. Dieudonne Costes, French Army Reserve
Lieut.-Commander Joseph Lebriz, French Navy
For aerial journey of 35,000 miles, in the course of which they arrived in the United States in February, 1928, by air, after making the first non-stop flight across the South Atlantic.

Baron Gunther von Kuenefeld, of Germany
Major James Fitzmaurice, Chief of Irish Free State Air Force
Capt. Herman Koehl, German Army, Retired
On April 12-13, 1928, they succeeded in making the first westward non-stop trans-Atlantic flight from Europe to North America.

Captain Benjamin Mendez, Colombian Army
Between Nov. 23 and Dec. 30, 1928, he piloted an airplane from New York City to Giradot, Colombia, a distance of 4,600 miles. By his skill, resourcefulness and courage, he linked the continents of North and South America by an aerial journey.

Glenn H. Curtiss (Posthumously)
Over a long period of years, Mr. Curtiss, by his initiative, energy and courage, rendered exceptionally valuable services to the government of the United States by experimental flights and in advancing and developing the science of aeronautics.

Wiley Post, Pilot
Harold Gatty, Navigator
For airplane flight around the world, (June 23-July 1, 1931) in 8 days, 15 hours and 50 minutes, thus not only eclipsing in time all previous world flights, but also by their intrepid courage, remarkable endurance and masterly skill materially advancing the science of aerial navigation.

Russell W. Boardman
John L. Polando
For flight, July 28-30, 1931, of 5,011-8/10 miles, non-stop, over the Atlantic Ocean from the United States to Istanbul, Turkey.

Further awards of the Distinguished Flying Cross will be listed in the next issue.

The following-named Air Corps officers, upon the completion of their present course of instruction at the Army Signal School, Fort Monmouth, N.J., will report not later than June 30th next to stations, as follows:

First Lieut. Norme D. Frost, 2nd Lt. Clarence F. Hegy, to Selfridge Field; 1st Lts. Dudley D. Hale and Warren H. Higgins, Panama; 1st Lts. Stanley K. Robinson, Bolling Field; James F. Walsh, Scott Field; Walter C. White, Mitchel Field; 2nd Lts. W.W. Bowman, Langley Field; O.R. Deering, Barksdale Field and Wm. C. Dolan, Brooks Field.

Hamilton Field, San Rafael, Calif., April 5th

A Wing dinner at the Officers' Club celebrated the first concentration of the 1st Wing, GHQ Air Force. This concentration involved a total of 70 planes from March, Rockwell and Hamilton Fields. The afternoon of March 22nd, just before the dinner, was enlivened by the landing of Captain Harold D. Smith, who led in the pilots and planes scheduled for the Panama Flight.

One of the charming spots in Hamilton Field is the Log Cabin which can be seen as one rounds a curve in the road that winds along the base of the knolls separating the technical and residential areas of Hamilton Field. While this relic seems to hark back to the days of the frontier, it was built only two years ago from the piles left over from the foundations of the barracks. It is used at present to house the tools and equipment for lawn maintenance.

A Noncommissioned Officers' Club was recently formed, with Master Sgt. T.J. Kelly as President; Master Sgt. Leslie L. Wells, Vice President; Corp. Earl G. Bayliss, Secretary, and Tech. Sgt. William Finkey, Treasurer. The Board of Governors comprise Staff Sgts. Louis T. Silva, Paul S. Patterson, Merwyn P. Merrick, Corporals John W. Skelton and J.J. Moran.

Lt.-Col. Clarence L. Tinker, accompanied by 1st Lt. James W. Spry, 2nd Lts. Eugene H. Beebe and Wm. C. Capp (Reserve) led a flight of four Bombers to Rockwell Field for the installation of new controllable pitch propellers.

Staff Sgt. Samuel M. Woolard, 31st Bombardment Squadron, met his death on the morning of March 23rd when he was struck by the propeller of a Boeing Pursuit plane. The accident occurred as the 41 planes of the 17th Attack Group were warming up to return to March Field as an aftermath of the concentration of the 1st Wing.

Within the newly reorganized 7th Bombardment Group, five officers were assigned to important administrative positions, viz. Capt. Lewis R.P. Reese as Intelligence and Operations Officer; 1st Lieuts. James W. Spry, Engineering and Armament Officer; Edgar T. Noyes, Supply Officer; 2nd Lieuts. Foy H. Lynn, Communications Officer and Edward W. Suarez, Adjutant. Major Fabian L. Pratt, Medical Corps, was attached to the Group and designated as Group Flight Surgeon.

Personnel has shifted at the field as two new organizations have been formed and the old organizations reorganized. The 69th Service Squadron had its inception under the command of Capt. Guy Kirksey, whose acting 1st Sergeant is Staff Sgt. H.L. Patterson. The other new organization is the Station Complement, under the command of 1st Lieut. Wilbur Erickson, who is also the Adjutant and Public Relations Officer. The acting 1st Sergeant is Corporal Frank B. Davidson. The

other administrative officers in the complement are Capt. Don L. Hutchins, Executive Officer; Capt. Guy Kirksey, Engineering Officer; 1st Lt. Paul H. Kemmer, Operations Officer, and 2nd Lt. Millard Lewis, Signal Officer.

Lieuts. John T. Helms, J. Mitchell, Samuel Gormley, J.W. Dennison and Lawrence Coddington, piloting five Pursuit planes from March Field, took off from Hamilton Field on April 3rd for Seattle, Wash., where changes will be made on their planes. Lieut. Dulligan left in a C-24 transport to fly these pilots back to March Field.

Forty gentlemen cows invaded the sacred precincts of the landing field to eat of the high lush grass. The Officer of the Guard charged the interlopers with motorcycles and finally drove them back within their own grounds. An eye witness said that Cadet Robert C. Streater, the Officer of the Guard, narrowly escaped goring when he stepped out of his side car to order one of the Holstein bulls out of the field.

Transfers of personnel to other stations were as follows: 2nd Lt. Eugene H. Beebe, Public Relations and Intelligence Officer, to March Field; Sgt. Charles A. Lyon, 69th Service Squadron, to Panama; Pvt. John T. Courtney, 69th Service Squadron, to March Field; Sgt. George W. Hollowell, 9th Bomb. Sqdn., to Panama.

New appointments were as follows: Captain Devereux Myers, Engineer Officer and A.C. Purchasing and Contracting Officer, in addition to his duties as C.O., 70th Service Squadron, and A.C. Supply Officer; 2nd Lt. Robert E. Cron, Jr. Q.M., as Class "B" Finance Officer and Commanding Officer, Detachment Finance Department; Capt. John O. Roady, Q.M., Station Transportation Officer; Capts. John M. Davies, Guy Kirksey and 1st Lt. Paul H. Kemmer, Aircraft Accident Classification Committee; Warrant Officer Leland D. Bradshaw, Assistant to Station Ordnance Officer; 2nd Lt. Cady R. Bullock, Res., Assistant Engineering Officer.

First Lieut. Wilbur Erickson is the proud father of a 7-pound baby girl, Karen, whom the stork brought on March 30th to Letterman General Hospital. Both mother and daughter are reported to be doing nicely.

Air Corps, Tennessee National Guard, Sky Harbor.

Although the number of visiting airplanes has fallen off somewhat this month, 35 having been furnished service from the 1st to the 18th, this station is still among "those present" in the handling of visiting aircraft. During January, 153 airplanes of the Regular Army, Navy and other National Guard units were furnished gas and oil at this station. February dropped off to a mere 62, and March to 69. We are glad to have visitors and extend an invitation to all pilots to "light and set."

Brig. Gen. J. Homer Ballew, Adjutant General of Tennessee, piloted by 1st Lt. Robert C. Lindsay, T.N.G., made an extended flight from this station to Bolling Field, D.C., on April 16th and returned on the 18th. Part of the re-

turn trip was made at night over Department of Commerce airways.

Captain Wendell B. McCoy, A.C., Instructor assigned to the 30th Division Aviation, returned from Rockwell Field, Calif., where he pursued the special course in instrument flying for National Guard Instructors. Instrument flying instruction will start immediately for the pilots assigned to the 30th Division Aviation.

First Lieut. William G. Catron, a graduate of the Advanced Flying School, who served active duty tours at Fort Crockett and Dodd Field, took the examination for appointment in the Air Corps, Regular Army.

Crissy Field, Calif., April 16th.

War Department orders were received transferring Major Donald F. Muse, our Commanding Officer, to the Panama Canal Department. During the 27 years that Major Muse was in command, the greatest of friendships have been formed, and his departure is sincerely regretted. It has been a privilege for all of us at Crissy Field to have had the opportunity of serving under his command, and we hope he will return to this station upon the completion of his tour of foreign service. The officers and enlisted men of the 91st Observation Squadron and the 15th Photo Section wish him the best of luck and a very pleasant tour at his new station.

On the initial visit to the field of Col. Harry A. Wells, I.G.D., Inspector General of the 9th Corps Area, on March 6th, personnel, transportation and airplanes were paraded on the flying line for the first phase of the inspection, following which all departments and activities were visited by the inspecting party. Col. Wells evinced a real interest in Air Corps activities, as was demonstrated by his subsequent visit to familiarize himself more thoroughly with the changes caused by the recent reorganization.

There is no immediate danger of the hill supporting the officers' line disappearing, as might possibly happen to many of the Presidio hills which are large sand dunes covered with vegetation. Work on the S.E.R.A. project, under the direction of Captain George H. Brown, Utilities Officer, which has for its object the straightening and moving of the road in rear of the officers' quarters, has caused many tons of rock to be removed. The "Hill" has been a beehive of activity for many months, with hundreds of civilians being employed, as required by the rotating plan for work relief. We are looking forward to a predicted early day when we may drive our cars into individual garages and step off from the back porch without stepping into the middle of the road.

Closer liaison with ground units in this vicinity is presaged by the inauguration of the policy of exchanging officers for contact courses with other branches. First Lieuts. Hayden L. Boatner, William F. Dean and Logan

Clark of the 30th Infantry, Presidio of San Francisco, composed the initial group to arrive for a month's training with the Air Corps. Their schedule has included instruction in our various phases of training, ground and air, theoretical and practical, with special emphasis being placed on those subjects wherein cooperation with the Infantry is concerned. Air Training has been somewhat restricted due to lack of equipment. These officers, however, have exhibited a keen interest in the course, and it is felt that by such exchange progress will be made toward the perfect coordination that is so essential between air and ground units which are operating together.

Philippine Air Depot, Nichols Field, P.I.

Temporary promotions have reached this station at last, and the Depot congratulates Captain Charles W. O'Connor who, as Chief Engineering Officer, has been stepped up one notch.

Captain Harold R. Rivers was assigned to duty with the Depot recently and detailed as Adjutant, replacing Captain Walter E. Richards, who left for the States, via Suez, for station at Boston with the Organized Reserves.

The Engineering Section suffers quite heavily through the loss of ten enlisted men on special duty therewith who returned to the United States on the March transport. These men have done excellent work for the Depot, and we wish them "Happy landings" at their new posts.

Selfridge Field, Mt. Clemens, Mich. April 16th.

The 56th Service Squadron, formerly the 38th Pursuit, is gradually getting down to normal, having taken charge of the post transportation, thereby relieving the personnel of the Quartermaster Detachment of the duties pertaining thereto. The skipper, Captain (Bud) Maxwell, who recently returned from an extended flight, brought back enough top soil to start a post garden, having flown through the Kansas dust storms. Due to the recent reorganization and Michigan climatic conditions, bowling and handball are the main athletic events.

The new post theatre was officially opened on March 31st with a free show for all concerned. The opening show was "Life begins at forty," starring Will Rogers. The interior of the new theatre is finished with composition board much on the order of plastic flooring, and is decorated in a very modernistic design. The seats are of metal, heavily upholstered, and are provided with program lights, which it is believed are a novel feature in Army theatres. Landscaping is gradually being completed around the theatre building, and it is believed that when this is completed Selfridge Field will have as beautiful a motion picture theatre as exists in the service.

Clark Field, Pampanga, P.I., March 20th.

During the maneuvers at Del Monte, the various problems took the 3rd Pursuit Group personnel to Cotobato, Borobo, Buluan, Makar, Davao, Camp

Keithley, Malabang, Malaybalay and other places in this land of the Moros. We had the opportunity to visit several markets, witness a Moro wedding, tribal dances and observe their customs, costumes and weapons - all unlike any others in existence.

We also flew over the recently discovered Parker Volcano and much uncharted territory.

Major Brower, Lieuts. Old, Wurtsmith and Morgan flew to Puerto Princesa, a coastal city on the Island of Palawan, well off the beaten path and otherwise interesting for its unique Penal Colony. There were the first Pursuit planes to land there. They reported a good landing field and an interesting and hospitable people.

In the gas defense maneuver near Fort Stotsenburg, simulated gas was used with a dyeing agent to determine the effectiveness of the attack. The required counter measures against the attack were taken. Major Brower and Lieut. Ives acted as referees.

The post baseball team was recently organized, with Lieut. Wurtsmith in charge. Thus far three games were won and one lost.

Nichols Field, Rizal, P.I., March 25th.

We regret to report the death recently of Captain Ivan L. Proctor. He was admitted to Sternberg General Hospital on March 8th with abdominal pains, and it was discovered that an advanced state of peritonitis had developed. He died on March 19th, lacking only one day of completing 17 years' service, all in the Air Corps. He is survived by his widow, Mary, who will return to the United States on the Transport sailing July 2nd. Burial will be in Arlington National Cemetery.

Captain Proctor was on duty with the Philippine Government as advisor to the Governor-General and the Chief of the Constabulary on the formation of the Constabulary Air Unit, the preparation of its landing field, erection of necessary buildings, etc. Prior to this assignment he had been commanding officer of the 66th Service Squadron.

Officers who arrived on the Transport GRANT on March 18th, were assigned to units as follows: 1st Lieuts. William L. Lee, 4th Composite Group Hqrs.; George W. Hansen, 6th Photo Section; John W. Kirby and W. R. Shepard, 2nd Observation Squadron; 2nd Lieut. Phineas K. Morrill, Jr., 2nd Observation Sqdn.; First Lieuts. Julius T. Flock, John P. Kenny, 2nd Lieuts. Wycliffe E. Steele and H.P. Dellinger, 26th Bombardment Squadron.

Officers departing from this station were: Lieuts. Wiley D. Ganey for Chanute Field; Oscar L. Beal, Langley Field; William T. Coleman, Selfridge Field and Gerald Hoyle, Randolph Field.

France Field, Panama Canal Zone, March 30.

Like other Air Corps posts, France Field is in process of reconstruction. During the next year it is hoped that there will be com-

pleted the following new buildings: a parachute and armament building; two barracks, one to house 110 men and the other, 230 men; one single and one double hangar, a paint and dope shop, 10 sets of officers' quarters and a utilities building.

One other hope France Field has is that it will soon get some new airplanes.

Major W.R. Taylor was switched from the Adjutant's job to that of Group Operations. Captain C.W. Cousland was assigned as Adjutant.

Master Sergeant Otto H. Nelson reported for duty from Scott Field and took up the duties of Post Sergeant Major. He was welcomed by a host of old friends.

San Antonio Air Depot, Texas, April 20th.

Hon. Harry H. Woodring, Assistant Secretary of War, and Lieut. Townsend Griffiss, his aide and pilot, visited here April 15th during the course of his air tour of inspection of military stations.

Captain A.S. Albro, Supervisor (Technical) for this Control Area, is back on duty from sick leave. His assistant, Tech. Sgt. Elliott Scott, also returned to duty from a period of illness.

Sergeant J.H. Price, who with Mrs. Price just returned from a 30-day furlough, is attached to the Depot from the 67th Service Squadron, Randolph Field, as a pilot with the air transport service. He has been recovering from an ankle injury sustained in his emergency parachute jump of March 6th.

During March, the Engineering Department overhauled a total of 24 planes and 57 engines and repaired 23 planes and 20 engines.

Randolph Field, Texas, April 18th.

In a memorandum to the personnel of the Field, Colonel Henry W. Harms, Commanding Officer, after inviting attention to some very complimentary remarks made by the Chief Engineer of the San Antonio Air Depot relative to the condition of aircraft sent there from Randolph Field for overhaul, praised those who are responsible for such a high standard of efficiency in engineering maintenance and repair, commended them on their skill, devotion to duty and high morale, and urged them to continue this enviable record.

The Chief Engineer had stated that although airplanes sent to the Depot from Randolph Field for overhaul averaged approximately 600 hours time between overhauls, and in many instances had been in service over the prescribed year between overhauls, the equipment was always in an excellent state of maintenance and repair.

This state of affairs, Colonel Harms stated, reassures Randolph Field flying personnel that they may have full confidence in flying our aircraft.

Randolph Field got off to a flying start in the race for the Army Boxing Championships in the bouts held on April 11th, winning four out of seven contests and running up a net gain of

55 points. The Randolph Field mittmen coped both main bouts by knockouts. The victorious representatives of Randolph Field were Private Kuenstler, 67th Service Squadron, featherweight; Private Brawner, 47th School Squadron, middleweight; Private Thomas, 52nd School Squadron, light heavyweight, and Private Jarvis, 52nd School Squadron, welterweight.

The Randolph Field Ramblers, Army League Baseball Champions of 1933 and 1934, will open the 1935 season in a new stadium now being constructed under the personal direction of 1st Lieut. Mark K. Lewis, Air Corps, Recreation Officer. The grandstand is being built on a base of concrete with 66-ft. girders salvaged from the old hangars at Fairfield and Middletown Air Depots, and roofed with corrugated iron. It is being built in three 80-ft. sections, one section immediately behind the catcher's box, one section along first base line and one along third base line, making a grandstand 240 feet long. The officers and enlisted men of Randolph Field personally contributed to provide the \$3,000 necessary to construct this grandstand, the money coming from the recreation fund, a part of the one-half or one percent taken from each individual's monthly pay, a voluntary contribution to take care of recreation, Army Relief, charity, etc. When completed, the stand will have a seating capacity for approximately 2100 people.

Dressing rooms and showers are being installed for the players.

The stadium will be ready for use at the opening of the baseball season and will contribute to a great degree in keeping the morale of Randolph Field in a high state.

Wheeler Field, T.H., April 11th.

Major Clayton L. Bissell returned to Wheeler Field from Oakland on March 28th, via commercial liner, following completion of a series of experimental radio compass navigation flights on the Pacific Coast during February and March. During his absence his duties as Group Intelligence and Operations Officer were conducted by Captain J.C. Crosthwaite.

The Hawaiian Air Depot completed seven major overhauls of aircraft during March, also seven SR-1340 engines. In addition, a Keystone B-4A Bomber, overhauled at the Rockwell Air Depot, was assembled and turned over to the tactical organizations for use.

LIBRARY NOTES

Some of the More Interesting Books
and Documents
Recently Added to the Air Corps Library

A 00/55, 1935, No. 3. Extracts from Interstate Commerce Commission air mail booklet No. 1 relating to air mail compensation. London, Great Britain Air Ministry, March 11, 1935. 45 p. (Resume of commercial information. Special issue No. 3/1935).

A 00/55, 1935, No. 2. List of British record and civil long distance flights 1919-1934. London, Great Britain Air Ministry, Feb. 28, 1935. 20 p. (Resume of commercial information. Special issue No. 2/1935).

C 13/19. Nomenclature on air navigation prepared by special conference on air navigation terms. Washington, National Advisory Committee for Aeronautics, Jan. 1935. 9f. Terms standardized by War Dept., Navy Dept., Department of Commerce, and N.A.C.A.

354.42/D42. Future of the British Army, the problem of its duties, cost and composition, by Basil Cranmer Dening, 1928. 224p. The author shows that a very difficult era lies ahead of the British Army and offers some suggestions as to how it may be met.

355/B45E. The war of the future in the light of the lessons of the World War, by F.A.J. von Bernhardt, 1921. Author expresses great faith in the future of Germany, stating that a nation the size of Germany cannot be oppressed forever.

355.33/F96. Generalship, its diseases and their cure; a study of the personal factor in command, by J.F.C. Fuller, 1933. 80p. The true general is not a mere prompter in the wings of the stage of war, but a participant in its mighty drama.

629.1307/D29. Fly with me, by H.D. Davis, 1932. 111p. Elementary text book on the art of piloting.

629.167/D64p. Parachuting, by Charles Dixon, 1930. 216p. Gives history of parachuting.

Selected Magazine Articles

Kings Fighting Services. Aeroplane, March 13, 1935. Refers to Parliament and Armament.

Blind Landing and "Al" Hegenberger, U.S.

Air Services, April, 1935.

A New Automatic Pilot. Flight, March 14, 1935.

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AIRCRAFT BRANCH

Observation Balloon Constructed of Synthetic Rubber.

The development of synthetic rubber has progressed to a point where construction of tires and coated fabrics is entirely practicable, although the commercial applications are slow to materialize because of the higher cost when compared with natural rubber.

The Air Corps, however, is investigating the application of one of the most successful synthetic rubber compounds in connection with the construction of a complete observation balloon that will not require the use of any natural rubber; even the cement and tape for the seams being constructed of synthetic rubber compounds.

Various manufacturers have cooperated in the project of developing an observation balloon constructed entirely of domestic materials which, along with the fact that helium gas is available only in this country, will make the observation balloon independent of any strategic materials.

The balloon will be completed in about two months and will be given to one of the Balloon Squadrons for service testing in connection with their observation work at the Artillery School.

EQUIPMENT ACTIVITIES

Flight Indicator, Type C-4.

The Type C-4 flight indicator (gyro horizon) which incorporates a caging device, is being standardized to supersede the Type C-3 flight indicator (gyro horizon). The two types are substantially the same except for the addition of a caging device which will cage the gyro from any position.

Landing Lights.

A landing light submitted by Gustav Dietz of West Hollywood, Calif., has been tested in the photometric laboratory of the Materiel Division. This landing light differs from the conventional types in that vertical strips having the contour of a parabolic curve are fastened within a form, the strips being flat across the horizontal section. The resulting beam is wider than usual horizontally and has a great deal of scattered light. This landing light is not considered superior to the present types in use in the Air Corps.

Gasoline Driven, Portable Energizer.

A gasoline driven, portable energizer, manufactured by the Mall Tool Company, Chicago, Ill., was demonstrated at the Materiel Division. This equipment is designed to energize the inertia starter flywheel up to 12,000 r.p.m. The unit consists of a small, two-horsepower gasoline engine driving a right angle shaft through a flexible cable. The torque is applied by a centrifugal clutch which, in turn, is operated by a hand throttle

at the right angle drive shaft. The torque can be applied to the starter crankshaft by changing the speed of the engine. It is planned to procure one unit for experimental test during the next fiscal year.

Materials Branch Notes.

Non-destructive methods of testing aircraft parts in order to detect cracks and other defects which might affect the strength or usability of the part have received considerable study. There are two methods which have been applied extensively for the past two years at Wright Field - (1) X-Ray; (2) Magnetic. X-Ray inspection has not reached the stage where it can be readily adapted to field inspection. Magnetic inspection by means of a process commercially known as the "magnaflux process" can be easily applied by the aid of a relatively simple apparatus and without danger to personnel. It is now being used by all the aircraft engine manufacturers and manufacturers of welded steel propellers as a routine method of inspection on the finished parts. Blow holes 1/32 inch in diameter and cracks invisible to the naked eye or those which do not come to the surface can be detected by this method. The piece is magnetized with either a low voltage, high amperage current or by bridging the poles of two electromagnets. Rounded fine iron filings known as magnaflux powder are sprinkled on the magnetized part and align themselves so that the defect is indicated by a piling up of the powder.

The apparatus at Wright Field has been used extensively for the inspection of propellers and engine parts which have been in service, and several parts have been rejected which contained cracks which would not have been discovered in any other way. The most up-to-date apparatus available has been purchased by the San Antonio Air Depot. This apparatus has great flexibility and can be used for anything from a wrist pin to a welded landing gear strut assembly. The use of this method of inspection, which is entirely non-injurious to the part, offers a practical method for reducing failures which may occur in a part due to fatigue cracks or defects in the steel which were not detected at the source of manufacture.

Stratosphere Gondola

The gondola to be used by Captain Stevens this summer for his flight into the stratosphere arrived at Wright Field on March 27th for the installation of the instruments and equipment which it is planned to take aloft. A Dow-metal sphere, nine feet in diameter, the upper half is painted a brilliant white, the lower a glossy black. The great bubble is only one-fourth inch thick and weighs 660 pounds. There are several small peep-holes for observation purposes, also two man-size circular openings, one in the black portion of the sphere below the center, the other directly opposite in the white hemisphere for escape in emergency.

Existing instructions require that valves of engines installed in Pursuit type aircraft be inspected once each 20:00 as part of the 20-hour inspection. A number of Pursuit organizations have expressed the opinion that the valve check could go to 40:00, and their recommendations were brought to the attention of the Materiel Division.

The reply of the Materiel Division was as follows:

"It is the opinion of this Division that the checking of the valve clearances on air-cooled radial engines of all types having closed rocker boxes can safely be extended from twenty-hour to forty-hour periods, provided that the rocker arm bearings are adequately lubricated and the rocker boxes properly filled with lubricant. Technical Order OS-10-2 is now being revised covering the use of 3,000 second oil; therefore, the instructions concerning valve check at twenty hours will be changed to call for valve check at forty hours."

An Air Corps station has requested that the information contained in Par. 19, Circular 15-50, be clarified. They note that that part which states "parts which may have been damaged to the extent that they are obviously beyond repair need not be tagged with a Condemned Parts Tag," seems to contradict the first part of the paragraph which states that "Condemned Parts Tag, A.C. Form No. 51, will be used to tag all parts or assemblies which have become obsolete or which have been damaged beyond repair."

The station was advised that the first sentence of Par. 19 of Circular 15-50 should have been amplified by the insertion of the phrase "except as noted," the second sentence being the exception, and that this change will be incorporated in Circular 15-50 when next revised.

The model designation "BT-8" has been assigned to the BT type aircraft being procured from the Seversky Aircraft Corporation.

Supply Letter No. 14, issued by the Chief Signal Officer, dated April 1, 1935, reads as follows:

"1. Reports have been received indicating that the pointer on Tuning Unit, type MJ-125, is sometimes lost while in service or in transport due to the fact that the pointer is not positively locked or attached to the tuning unit. This defect or difficulty can be easily corrected in the field, and the following procedure is authorized by all Depots, Radio Repair Sections and Air Stations where facilities are available. Future production will incorporate this modification:

- a. Remove the pointer from the tuning unit and file off the head of the locating stud. Remove the locating stud from the pointer. The hole left in the pointer when the locating stud is removed should be drilled for clearance for a number 6-32 screw (use #27

drill). This completes the modification of the pointer.

- b. The pointer locating holes in the tuning unit body or housing must be tapped to take a No. 6-32 machine screw. The tapping operation should be performed by using a No. 6-32 starting tap on each hole, then finish by using a No. 6-32 bottom tap on each hole. GREAT CARE MUST BE USED IN TAPPING THESE SEVEN HOLES IN ORDER TO PREVENT BREAKING OUT THE BOTTOM AND HENCE PROVIDING AN OPENING INTO THE INTERIOR OF THE TUNING UNIT THROUGH WHICH DIRT, WATER, ETC., MAY ENTER. This completes the modification of the tuning unit housing.

- c. Procure two No. 6 Shakeproof, or equal, lockwashers and one round or flat-button head brass machine screw, size 6-32 by 1/4".

- d. Reassemble the dial and pointer on the tuning unit, placing one of the lockwashers between the pointer and housing and the second lockwasher between the pointer and the head of the machine screw.

2. With tuning unit, type MJ-125, modified as directed above, the dial is not as readily changed as with the original design, but after an installation is once made, there is little need for frequent change and the modification will be effective in preventing the loss of parts."

Supply Letter No. 15, issued by the Chief Signal Officer, dated April 1, 1935, reads as follows:

"1. Cords, type CD-114, as originally procured for use with aircraft radio sets, had two wires connected to terminal No. 34 on each plug while terminal No. 20 had no wires connected to them. All later procurements have one wire connected to terminal No. 34 and one wire connected to terminal No. 20. This was caused by a change in the circuit plan of the sets in which used.

2. The former cords work satisfactorily in Radio set, type SCR-AA-183 but will not permit proper functioning in SCR-AC-183, SCR-AD-183 or other sets of which they are a part. The latter cords are suitable for use in either the SCR-AA-183 or any of the other sets.

3. In order to prevent the difficulties incurred when one of the former cords is inadvertently attached to one of the latter radio sets, it is requested that all cords, type CD-114, be examined and all of those having two wires attached to terminal No. 34 be modified by removing the orange wire from terminal No. 34 and attaching it to terminal No. 20.

4. Since after the modification, all the cords, type CD-114 will then be alike, no change in nomenclature will be necessary."

Under date of April 16, 1935, the Chief Signal Supply Officer issued Supply Letter No. 16, pertaining to oscillator equipment, RC-12. The supply letter prescribes the method of using equipment as a "beat oscillator" and "frequency checker."

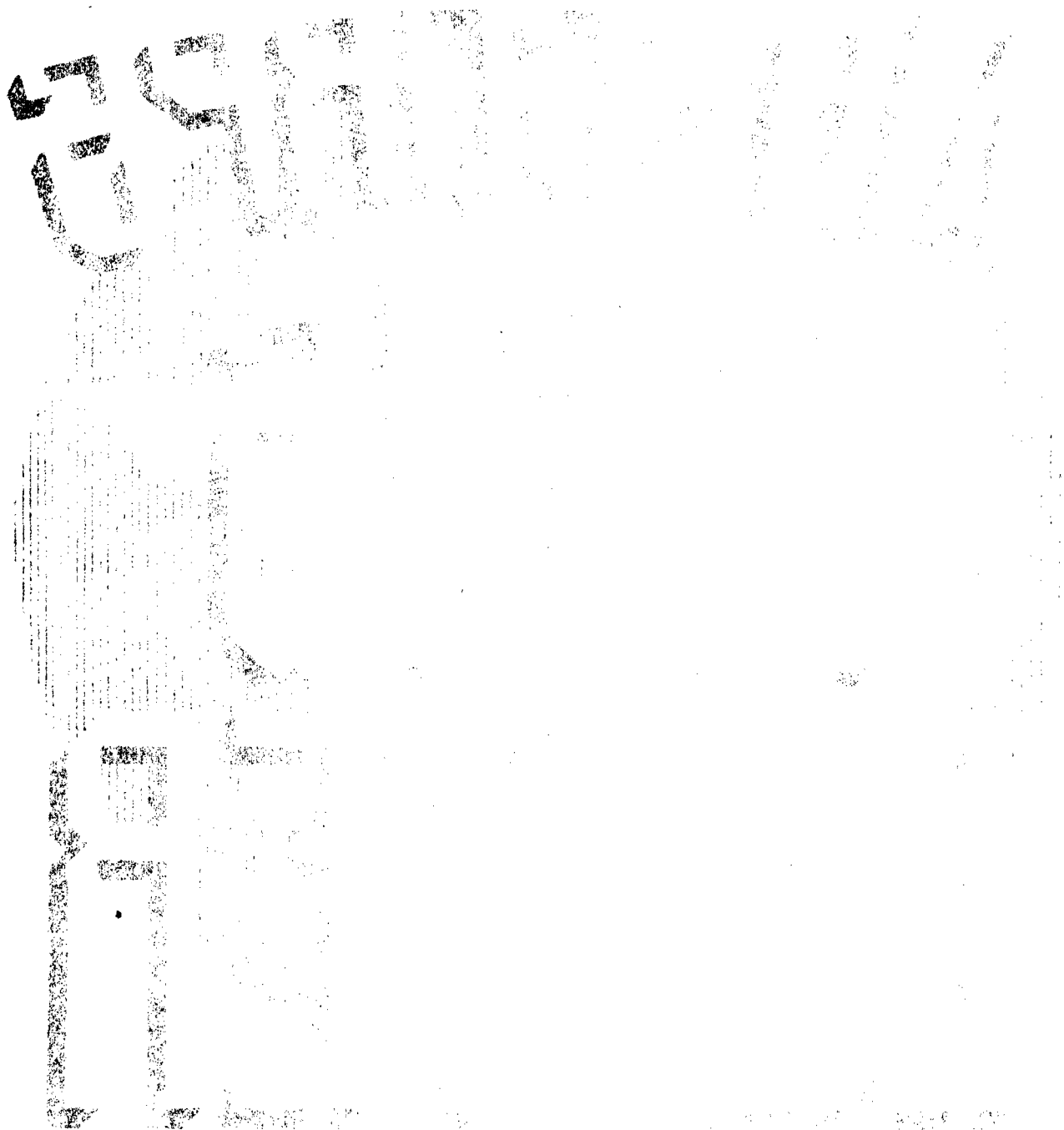
AIR CORPS NEWS LETTER

DUNNINGTON

ISSUED BY THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D. C.

MAY 15, 1935

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Information Division
Air Corps

May 15, 1935

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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LONG-RANGE AIRPLANES MOST FLEXIBLE DEFENSE

The long-range airplane will form the future basic element of this country's air force and give the United States its most flexible defense against any challenge from the ocean declared Brig. General Frank M. Andrews, Chief of the General Headquarters Air Force, at the annual aerial membership roundup dinner of the Indiana Department of the American Legion at Indianapolis on the evening of May 1st, last.

General Andrews and scores of other prominent figures in the aeronautical world and civic and government leaders were guests of Frank N. Belgrano, Jr., National Legion Commander, at the Indianapolis Athletic Club.

Stating that the responsible authorities of the War Department are fully alive to the importance of military aviation and to the requirements for the organization, equipment and control of the air force, General Andrews briefly outlined the measures which were instituted by the War Department to effect the creation of the G.H.Q. Air Force, following the approval by the Secretary of War of the report of the Special War Department Committee headed by the Hon. Newton D. Baker. The program contemplated eventually a force of 2320 planes for all purposes, including combat, observation, training, cargo and transport, the GHQ Air Force to be equipped with 980 planes, made up of all air combat units in the continental limits of the United States, in one command directly under the Chief of Staff in time of peace, and of the commander of the Field Forces in war.

Four field armies, with the GHQ Air Force, will constitute the main combat elements of our war forces. The four armies must of necessity be skeletonized in peace and brought up to full strength as quickly as possible when mobilization is ordered.

"The Air Force cannot be improvised after war is imminent," General Andrews stated. "It takes years to build bases and airplanes and to train personnel. The War Department has, therefore, adopted the policy of maintaining the Air Force at all times in a state of readiness for war.

In any war between modern powers an Air Force phase will precede the contact of the ground forces. The outcome of this phase will be very important. The Air Force phase will consist large-

ly of independent air operations, i.e., operations of the GHQ Air Force acting alone or as the principal force in the performance of the mission assigned by the Commander-in-Chief of the Field Forces. These independent air operations will normally be beyond the sphere of influence of the surface forces of the ground or of the sea. They comprise such operations as attack on enemy aviation and aviation bases; attack on hostile naval forces; on choke points in lines of communication, such as railway and highway bridges, canal locks, port facilities; attack on troop concentrations and on war industrial activities, etc.

Of course, if an enemy Air Force should be able to establish itself on bases or has available bases from which it can operate against the United States, it will attempt to carry out the same class of missions, particularly the attack of refineries and factories engaged in the production of munitions, and the attack of power plants and other utilities.

It can be readily seen that the most important operation for the United States Army Air Force is to defeat the enemy aviation. This is ordinarily best accomplished by attacking enemy air bases. One destroys an obnoxious flying pest through the destruction of its breeding or roosting places. Without bases an air force cannot operate.

Our GHQ Air Force, to carry out its function, must also have prepared bases. The more bases, the more flexible the operations, but as a minimum requirement there should be base facilities in every strategic area.

The Wilcox Bill, which has been favorably reported out of the House Military Affairs Committee, provides these air bases and certain other necessary auxiliary establishments. It has the indorsement of the War Department and its enactment into law would add greatly to the effectiveness of the air defenses of the United States in war, and facilitates air training in peace. It deserves universal support."

Outlining briefly the functions of Bombardment, Pursuit and Attack Aviation, General Andrews stated that these branches of aviation must have information upon which to base their operations. Accordingly there are provided a few squadrons of long-range observation, whose duty it

is to locate and check up on likely targets for the bombardment and attack.

Certain supplies and key personnel must be quickly transported to operating air units as required. Cargo and transport airplanes look after some of the more urgent supply and personnel transport problems.

Asserting that the Army air defense organization which the War Department is building is far from complete, General Andrews goes on to say that time and money and hard work are necessary before the United States will have an effective air defense. At the present time it is only getting under way.

"For example," he said, "the GHQ Air Force has assigned to it about 450 airplanes of all types, less than half its 980 set up in the program. Of the 450, only about 176 are modern and suitable.

The shortage in commissioned personnel presents another serious problem. The GHQ Air Force alone will require when completely equipped with airplanes about 1900 trained pilots, navigators and observers. Today there are available to GHQ units for these duties about 500 Regular officers, Reserve officers and Flying Cadets. Similar conditions exist in other Air Corps activities. Base facilities are inadequate and more are needed.

However, there are bright spots in the outlook - it is not all dark. During the next 18 months for instance, a considerable number of modern combat aircraft will be delivered to the Air Corps equal or superior to anything in the world. In the year following that, still more, but it should be noted that these deliveries are sufficient to provide replacements only for worn out and useless airplanes. They are not sufficient to build up to the number of aircraft required by the approved program.

This program was recommended by the Baker Committee as a minimum for air defense purposes. It should be met in a reasonable length of time to provide adequate National security. For Army aviation, when it is completely organized and equipped will afford a defense weapon of primary importance for the prevention of any oversea invasion of the United States or its possessions.

As time goes on, the increasing range of this extraordinary form of easily controlled fire power will dictate new air defense frontiers and larger spheres of influence for military aviation. Our efforts, therefore, should be to extend the radius of our aircraft to the effective maximum technically practicable, not for the purpose of making the airplane a vehicle of aggression, but rather to subject an aggressor to this form of our defense as far from our homes as possible, and to realize to the fullest the defensive capabilities of

land-based military aviation.

We are not an aggressor nation. Our national policy of defense is well known and is responsible in no small degree for the mutual respect and confidence existing among the nations of North America. Unfortunately for world peace, reverse conditions exist in Europe and Asia. I think you will all agree with me that the aims and ideals of our armed forces, including military aviation, fit harmoniously into the social and economic will of the nation for defense and toward the prevention of war. But notwithstanding this and the fortunate situation existing in our continent, experience has shown us that we may easily become involved in world conflicts. We have no assurance that in our next war the battle ground will be on foreign soil. It is for every contingency that we must prepare.

Commercial and military development of the air and science of aviation in the world has advanced at a rapid rate, and now foreshadows the early production of heavy aircraft, with ranges of several thousand miles and with large, useful loads. For military aircraft, armament, ammunition, high explosives and authorized chemicals constitute this load. Range will be convertible into armament and vice versa. With sufficient bases, weather, oceans, and other natural obstacles form no effective barriers to the operation of these long-range aircraft. Their destructive potentiality is tremendous. A few such planes could carry in one load all the weight of explosives that were dropped on London during the World War.

Is it any wonder that the nations of Europe, with their nationalistic rivalries and political conflicts, live in constant fear of air raids, and seek protection by building up their aviation arms and by forming air alliances? These nations, as well as our own, realize that the only adequate answer to air attacks is the airplane.

It is the long-range airplane with a radius extending several thousand miles in any direction that, I believe, will form the future basic element of our air force and that will give to the United States its most flexible defense against any challenge from over the oceans.

The airplane has greatly increased the destructive power of military arms to the extent that a physical conflict between great nations might well prove to be so devastating that its prolonged prosecution would be a major catastrophe and, therefore, it is aviation perhaps more than any other power, which I believe will tend to discourage another World War.

I think that the continued development of a vehicle of mechanical transportation and military power of such possibil-

ities as the airplane, will, in all probability, prove revolutionary in its influence on political alliances and combinations throughout the world, and on international trade policies and treaties.

I am convinced, therefore, that the development of this new instrument of peace will continue to have an increasing influence upon our National security

and commerce, and consequently upon the security and welfare of every individual.

The program of 2320 airplanes recommended by the Baker Committee and by the War Department is certainly a reasonable objective for the Army Air Corps, and is an insurance policy against warfare upon which I believe our people would be glad to pay the premiums."

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ANOTHER ERRAND OF MERCY IN PANAMA

Suffering a serious throat ailment, Rosendo Jurado, Panamanian lawmaker and political leader in the province of Bocas, was rushed from Bocas del Toro to Panama City in an Army amphibian on April 22nd last. He was taken to the Santo Tomas Hospital shortly after 4:00 o'clock and was scheduled to undergo an operation immediately. On the morning of April 22nd, Enrique A. Jimenez, Secretary of the Department of Finance, received a telegram from Governor Selles of Bocas, as follows:

"Jurado gravely ill. Try to send hydroplane to rush him to Panama. President also advised today. Advise us of departure of plane and notify Dr. Brin."

An Army Amphibian, piloted by Major Willis R. Taylor, of France Field, who was accompanied by Captain Warren M. Scott and Lieut. Cecil Henry, left for Bocas del Toro in the morning and at 4:00 p.m. landed at Albrook Field, bearing the sick man. Mr. Jurado was transferred to an ambulance and rushed to the Santo Tomas Hospital. Dr. Bin examined

him immediately and decided to operate at once. The plane was met at Albrook Field by Mr. Jimenez and Dr. Brin. The following letter was received from the American Minister to Panama by Major General H.B. Fiske, the Commanding General of the Panama Canal Department:

Legation of the
United States of America
Panama, April 23, 1935.

My dear General Fiske:

The Minister for Foreign Affairs today expressed deep appreciation for the use of the Army airplane yesterday in bringing Senor Rosendo Jurado to Panama from Bocas del Toro. Doctor Arosemena asked me to transmit his most appreciative thanks, and those of his Government, to you and to the officers of your command who were instrumental in this errand of mercy.

I am, my dear General Fiske,
Very sincerely yours,
(Sgd.) George T. Summerlin.

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WIDESPREAD AIR BOMBARDMENT CONTEMPLATED BY EUROPEAN POWERS

The Editor of the "Manchester Guardian Weekly" (England) writes in the April 12th issue an editorial "Wings Over Europe." An extract from this editorial, referring to European wars, is as follows:

"What part is the aeroplane likely to play in them? There are two views. One, to which General von Seecht has given his support, is that the primary objective of each air force would be to destroy that of the enemy. The other, of which an early protagonist was the late Italian General Douhet, is that air power should be employed directly against vital centers on enemy soil. The latter view is that held by almost every general staff in Europe, including our own. Mr. Laurent Eynac, the former French Air Minister, said in the Chamber last week that the war functions of the French Air Force would be both to 'disorganize the mobilization and concentration of enemy troops' and to 'demoralize the civilian population.' What European Air Minis-

try would deny that its object is the same?

Thanks to the aeroplane, the mobilization of enormous masses of fighting men will not be easy. Air power will strike at the very outset of a future campaign. Mobilization centers, ammunition depots, railway junctions, power stations, road, rail, and river bridges far behind the lines will be subjected to a continuous bombardment. Everything will be done to cut lines of supply and communication and keep them out. Anti-aircraft defense will doubtless be organized. But since in a war of 'areas' and not of 'fronts' the advantage is throughout with the attacking air force no large success by the defense can be expected.

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At Hamilton Field, Calif., there are over 40 vacancies in the grade of PRIVATE mainly in the 69th Service Squadron and Station Complement. Preference for these enlistments will be given those with clerical background, although a few fine mechanics can always be utilized.

THE SIGNIFICANCE OF THE GENERAL HEADQUARTERS AIR FORCE

In an article under the above subject in the May issue of U.S. AIR SERVICES, Lieut.-Colonel John D. Reardan, Air Corps, Chief of the information Division, Office of the Chief of the Air Corps, after pointing out that the Army prior to March 1, 1935, had no unified command to operate all its combat units in the continental United States, stated that it has been clearly seen right along that the earliest mission of a nation's air defense will be called upon to perform is that of meeting and combating an enemy's air attack. Air power has greatly lessened the time required by an aggressive nation to launch an effective attack. In the event the nation on the defensive has no well organized air power of its own, air attacks can be readily directed against its power plants, water supplies, bridges, tank farms and similar nerve centers of industrial and economic life.

Unless our country's air units for the conduct of a defense against such an air attack are under a unified command which trains them for their duties in war and prepares the plans whereby they will carry out such duties, little hope can be entertained for a successful resistance against these early air attacks. Therefore, the War Department effected the organization on March 1, 1935, of the GHQ Air Force, with headquarters at Langley Field, Va.

A great amount of detailed analytical study lies behind the action taken by the War Department in thus organizing the GHQ Air Force. It has long been evident that to be of maximum effect on the conduct of a war, air operations must be properly coordinated with the general strategy of the war; and that a unified air effort offers the greatest hope of securing important results. The Air Force mission therefore may be stated: "to conduct such air operations as will afford the greatest aid in winning the war." This implies that there must be prepared as a guide for these air operations an Air Force operating plan so designed as to correlate and coordinate the Air Force operations with the operations of other forces to secure objectives which will be decisive in winning a favorable decision in the war.

To secure an objective of this nature requires the employment of all the aviation necessary to accomplish the purpose under a single direction and in a coordinated operation. It requires for the air units participating, training in peace in acting together and in the doctrines and methods of their especial task.

On the other hand an air force of this character, trained and operated as indicated, is entirely suitable and adapted to perform missions designed to afford direct aid to ground troops, such as the

operation of November 1, 1918, in the Meuse-Argonne battle, described by General Drum, as follows:-

"In our attack in the Meuse-Argonne on November 1, 1918, the First Army decided to use all its air forces to help directly the ground battle. * * * Some 8 kilometers beyond the jump-off line there was German artillery in a large woods. This was bombarded by our aviation from the beginning of the attack in order to counteract or neutralize the enemy's artillery fire. The result of that attack is well known. The Second Division by noon of November 1 had gone clear through the center of the enemy, and after that time the enemy was in full retreat."

The use of all the aviation as a combined force against a single objective of sufficient importance to secure decisive results is a good example of one of the things sought to be accomplished by those responsible for the organization of the GHQ Air Force as it exists today. To secure the most effective results aviation of the four classes must be trained to operate in combination as a team, and the leaders of the larger units must be given experience in peace in discharging their duties.

One of the most important questions which the operation of the GHQ Air Force is expected to answer is: "What is the correct unit organization for squadrons and groups and for the troops which handle supporting ground services in the various permanent stations of these Air Force units?" The War Department directive to Brig. Gen. Frank M. Andrews, Air Corps, commanding the GHQ Air Force, stated that the New Tables of Organization for Air Corps Units, were to be tested by the Air Force for a period of one year, at the end of which a full report thereon was to be submitted.

The Commanding General, GHQ Air Force, has been given authority to make changes in these tables as deemed necessary, provided the total numbers of grades and ratings are not exceeded. He also has been directed to submit a preliminary report on these Tables of Organization on or before October 1, 1935. These tables provide for a greatly reduced personnel in the tactical squadrons and for larger "mobile service squadrons" assigned to support in the field away from permanent Air Corps stations, the operations of the tactical units. All the personnel performing duties pertaining to the administration and operation of each permanent post are included in a single organization designated as the "station complement."

Another early problem to be solved by the GHQ Air Force is the determination of the needs in troops of other arms, air-dromes, communications and supply for the support of intensive operations of the

Air Force in the field in case the country is attacked. A great amount of data upon this subject has been secured during Air Corps maneuvers held in the past. The Air Force staff now affords a continuing agency for the practical application of suggested methods in actual operations, and details may be expected to be worked out with a sureness which a theoretical treatment alone could not hope to approach.

After touching upon the experience expected to be afforded as a result of the policy recently inaugurated by the War Department of bestowing temporary increased rank to Air Corps officers commensurate with the duties they are performing, Lieut.-Col. Keardan went on to say that the creation of the GHQ Air Force fits in with the "Four Army Organization" evolved by General Douglas MacArthur and that when Air Force operating plans are completed they will provide for the employment of the GHQ Air Force, either in whole or in part, in any one of the four Army areas. The great mobility of the Air Force units will enable a prompt concentration of the whole Air Force at any location directed by the War Department or provided for in operating plans. The organization of the GHQ Air Force Headquarters provides a commander and staff constantly trained in the handling of such a combined air force and charged with a continuing study of new means and methods designed to make its operations more effective.

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GENERAL PRATT VISITS SELFRIDGE FIELD

The 27th Pursuit Squadron was recently accorded the signal honor of escorting General Henry C. Pratt, Commander of the Second Wing, to Selfridge Field, upon his inspection tour of Air Corps fields within that Wing. Early in the afternoon, all available P-26 airplanes were turned over to the 27th Squadron, and this winged armada of 15 airplanes took the air under the command of Major James E. Parker.

Breaking up into search formation, the Squadron patrolled the area eastward toward Buffalo. Finally, an O-38 appeared on the horizon. Quickly assembling the unit by radio, Major Parker ordered the unit to fly escort until Selfridge Field was reached. Upon arriving over the field, the unit dived on the field, announcing the arrival of the distinguished guest. General Pratt was particularly impressed by the ease with which the Squadron spotted his O-38 and made the statement that Observation planes in the next war would have to be extremely alert to avoid becoming "Cold Turkey" for enemy Pursuit.

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CRITICISM OF MULTIPLACE COMBAT PLANE

Pierre Faure, one of the regular air writers on the staff of PARIS SOIR, in a recent article criticizes the use of multiplace combat planes on which the French air doctrine is based at the present time. He says:

"The French General Staff has ordered its air materiel with an idea in mind which can be summarized as follows: let us build planes of sufficient useful load and of sufficient speed to be fit for various missions: day and night bombardment, protection, long range reconnaissance, etc.

This type of plane - the multiplace combat plane - has been studied and built by a certain number of manufacturers and we saw at the last Air Show, Breguet, Potez and Bloch types constructed under that program.

What are we to think of the "all purpose" plane? Is it interesting?

The programs which led to these combat planes, by reason of the various missions of these planes, have called for a complete armament, a large personnel, and numerous accessories. The manufacturers have built planes with complex installations, which are heavy and finally not sufficiently fit for certain of the most important missions which they were, originally, to discharge.

If a plane carries three scarf mounts, it requires 3 men to serve them, and if this plane is to be able to attack and to defend itself, this leads to a formula with a very small margin for the useful load. So that it was learned by experience that these multiplace combat planes are insufficient for long range night bombardment.

The result is that the most important mission of a "retaliation" plane - night bombardment - cannot be satisfactorily performed by the multiplace combat plane, in which a lot of confidence was placed.

Combat is one thing, and bombardment another.

A plane specialized in night bombing does not need an important defensive armament. Personally, I believe that retaliation planes would gain by not being armed at all. It is impossible to do anything. A plane which has to travel far must carry as heavy a bomb load as possible and must neglect its defensive means, otherwise its useful load diminishes rapidly.

In case of an attack by enemy planes, the crew will have to use parachutes if the situation warrants it. But this would rarely happen, judging from what we know of night bombardment, as in most cases retaliation planes will reach their objectives without having to use their defensive armament. It would seem wise, in my opinion, to build heavy carriers like the Farman 221 and the Bernard retaliation plane, moderately armed but

V-6787, A.C.

capable of fulfilling their mission under good conditions.

To adopt "all purpose" planes is to risk never having the only planes which are really useful at the present time:

retaliation planes. For France has none of these and there is nothing which permits us to believe that she will have any in the near future. That is where the difficulty lies.

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JUNIOR BIRDMEN VISIT SELFRIDGE FIELD

Seventeen members of the Junior Birdmen of America visited Selfridge Field, Mich., on April 25th, as guests of Lt.-Col. Ralph Royce, Post and Group Commander. These air-minded young men, ranging in age from 16 to 21 years, had come to Detroit from widely scattered cities of the United States to compete in the National Finals of the Junior Birdmen's Model plane-building contest. All were district champions in the art of constructing miniature gliders, ROG and tractor flying models.

While the birdmen were visiting the field, the 27th Pursuit Squadron staged an air show for their benefit. Starting the afternoon's entertainment, Capt. Karl G.E. Gimmler and Lieut. Joe Irvine staged a combat directly over the field. An acrobatic team composed of Major

James E. Parker, Capt. Walter E. Todd and Lieut. Paul W. Blanchard followed the combat and thrilled the visitors with their perfectly-timed execution of difficult acrobatic maneuvers. Major Parker tossed an extra thrill into the crowd when he half-rolled his P-26 over the edge of the field at 2,500 feet and, leveling out the plane, flew on his side the length of the field past the reviewing stand, with his wings perpendicular to the ground. All effect seemed lost, however, on one young birdman from Georgia who mildly exclaimed: "What's the matter, have the cross-winds got him?" The show was climaxed by an aerial review of 15 P-26A's demonstrating close "V," elements and flights in line, echelonment up and down, and rat-racing.

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WASHINGTON NATIONAL GUARDSMEN PARTICIPATE IN WAR GAME By the News Letter Correspondent

A Red enemy force attacking Spokane, Wash., hub of the Inland Empire, was defeated in a war game on the morning of April 28th, when 400 officers and men participated in a command post exercise for "the purpose of giving practice in staff and communication technique."

For more than four hours, four Observation planes of the 116th Observation Squadron, 41st Division Aviation, Felts Field, Spokane, flew over the problem, executing communication, panel and photographic missions.

At Brigade Headquarters, American Lake, Wash., Brigadier-General Carlos Pennington commanded the exercise, which included the communication platoons of the Fourth Infantry Regiment, Fort George Wright; 161st National Guard Infantry, 1st battalion; the 1st battalion of the 148th National Guard Field Artillery, and personnel of the 116th Observation Squadron.

For delegates attending the Annual Convention of the Washington Department of the Reserve Officers' Association, the problem was a closing Convention feature, giving seven hours' credit to all Reserve officers participating in the problem. Lieut.-Colonel Abbott Boone, of Seattle, in charge of Reserve activities for the State of Washington, observed the exercise with outspoken approval and commendation.

Two Douglas O-38E planes from the 41st Division Aviation, equipped with SC-134 radio sets, were in constant contact with the 81st Brigade Headquarters and

the 148th Field Artillery. Observations of front lines were made every 30 minutes and reported by radio, to be verified later by overlays.

A third O-38 made 30-minute observations of the front lines of the 161st National Guard Infantry and 394th Infantry Reserve. These positions were reported by overlays after front line panels had been displayed upon request by the firing of a red Very pistol.

The fourth plane, photographic, delayed at Felts Field, which was the advance airdrome, about nine miles from the theatre of operations. Communication with this plane was through the Brigade Headquarters radio to the ground station at Felts Field.

Three photographic missions of front line locations were called for in code radio communication. Actual delivery of the photographs to the front line locations was made in 17 minutes, not including the time for coding and decoding the messages.

Observers participating in the exercise learned considerable about "closer observation of smaller objectives on the ground" as considerable difficulty was experienced at first in locating the 24-inch square white and orange panels on the wooden ground, indicating the front line positions of the friendly troops. The observations were made at about 4,500 feet above sea level, or 2,500 feet above the ground. The problem was spread over an area of less than three miles about the banks of the Spokane River, below Fort

George Wright.

Exceptional practice resulted from the problem for all radio stations, which included a net of five stations composed of two radio ships, the Felts Field ground station, Brigade Headquarters and 148th Field Artillery Headquarters. Special wave lengths were assigned all stations, and all messages were sent in code for decoding purposes.

All watches, including those of pilots and observers, were synchronized by radio from Brigade Headquarters, which twice moved its position during the problem.

Major Edwin D. Patrick, Infantry, Regular Army Instructor attached to the 161st National Guard Infantry, and author of the exercise, acted as chief umpire, and had as assistants Regular Army officers from Fort George Wright.

The only organization permitted the use of pyrotechnics was the 41st Division Aviation, which was assigned red Very pistol for display of front line marking panels, green Very pistol for "acknowledge," and white Very pistol for "Ready to work with you."

A special encode and decode was prepared by Major Patrick. Symbols were created to designate all hills, bridges, rivers and creeks, houses, road junctions and Civilian Conservation Camps in the area.

At the critique which followed the program, General Pennington declared that much good resulted from the exercise, adding that "the officers from all organizations functioned well after getting the problem in mind, and we proved that our officers and men are ready to meet any situation that might arise."

Throughout the problem the 41st Division Aviation kept a close liaison with the ground forces and explained the situations in which the aircraft could best serve the friendly troops.

Similar exercises are on the training schedule for the 41st Division Aviation Camp on June 11th at American Lake, Wash., where a Division Camp will be held for two weeks.

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RADIO BEAM FLYING BY 11th BOMB. SQUADRON

The 11th Bombardment Squadron, Hamilton Field, Calif., is entering into an extensive operations program as outlined in War Department Circular No. 6, January 24, 1935. On April 18th, four Squadron officers completed a 300-mile radio beam flight to Humboldt, Nevada, and four other officers completed a 600-mile radio beam flight to Yuma, Arizona. The training program is being met with the greatest enthusiasm by all personnel, and they voice the hope that more airplanes will soon be made available in order to conduct the training yet more intensively.

FIELD EXERCISE BY 56th SERVICE SQUADRON

The 56th Service Squadron will depart on May 17th from Selfridge Field, Mich., for a short field exercise for the purpose of limbering up trucks which have been in "cold storage" at that field since their arrival. The contemplated exercise, which it is believed is the first of its type to be undertaken since the organization of the GHQ Air Force, is expected to furnish much valuable information regarding the movement of an entire organization under the new plan.

These exercises will take place in the vicinity of Flint, Mich., and will include every officer and man of the Squadron present for duty on the station. The equipment will consist of 12 Dodge personnel carriers, one Ford field ambulance, FWD 400-gallon gas truck for servicing trucks and airplanes, one Dodge 3-ton panel truck, 5 Dodge 1-ton pick-ups, 20 Dodge 1 1/2-ton trucks, 7 Federal 2 1/2-ton cargo trucks and a few motorcycles, the number dependent upon those set up at the station at the time the Squadron takes the field.

The Squadron will move out on May 17th and proceed via a roundabout route to the site selected, which will be in close proximity to some airport, and set up camp. On the 18th, all available airplanes of the First Pursuit Group will work in and out of the airport selected, during the course of a tactical problem. The 56th Squadron will service these airplanes and make such repairs as may be necessary. On May 19th, the Squadron will strike camp and proceed to Selfridge Field.

Major Warren A. Maxwell will command the Squadron; Captain Morley F. Slaght will be in charge of supply functions, and 1st Lieut. William J. Bell will be in charge of the convoy, with Master Sgt. Bredvad and Technical Sgt. Forster in command of sections of the convoy.

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HELIUM GAS FOR CAPTIVE BALLOONS

A matter of interest with reference to the development of Lighter-than-Air equipment is the recent action taken to furnish the First Balloon Squadron at Fort Sill, Oklahoma, with Helium for the operation of a captive balloon by that organization.

The Air Corps Materiel Division, Wright Field, is collecting comparative performance data that would be of value in the design of an observation balloon intended for operation with Helium gas. This marks a decided advancement, as heretofore captive balloons have been operated with hydrogen gas only, with the consequent fire hazard, which is eliminated when Helium is used.

NEW HAWAIIAN DEPT. COMMANDER HONORED

The 18th Pursuit Group, Wheeler Field, T.H., held an inspection, review and tactical exercise in honor of Major General Drum, the new Hawaiian Department Commander, on April 4th. The flying equipment, personnel and motor transport of the group was inspected on the line, after which airplanes and motor transport passed in review. This was followed without interval by an attack on the Group motor column by the aircraft of the Group. The General expressed himself as well pleased with the showing of the Group, despite rain, low clouds and generally unfavorable conditions.

In the evening, the Group with other elements of the 18th Wing gave a reception and dinner in honor of the new Department Commander at the Oahu Country Club.

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FIRST WING HAS SECOND CONCENTRATION

Fifteen sky raiders of Hamilton Field, Calif., passed in air review on April 13th, as a preliminary to the second concentration of the 1st Wing the next day. At 7:30 a.m., on April 14th, 14 Bombers, under the command of Lieut.-Colonel Clarence L. Tinker, took off from Hamilton Field to a 10:30 a.m. rendezvous over Cajon Pass. At 11:00 a.m., they bore down on March Field to join the second concentration of the 1st Wing. In the afternoon they passed in review before Brigadier-General Henry H. Arnold, Wing Commander.

On April 15th, the Ninth Corps Area Commander, Major-General Paul B. Malone, reviewed the Wing, of which the 7th Bombardment Group flew as a unit. At noon of the following day, the 14 planes of the Group landed at Hamilton Field, marking the end of the Maneuvers.

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ARMY DAY AT AIR CORPS FIELDS

On Army Day, April 6th, an aerial review was held at Barksdale Field, La., and the entire Third Wing flew over the City of Shreveport immediately thereafter. Very generous publicity was given the occasion by the local newspapers, and the Shreveport TIMES arranged an interesting and unique radio broadcast of the review, with a preliminary address by Lieut.-Colonel Millard F. Harmon, commanding the Third Wing during the absence of Colonel Gerald C. Brant, who was attending a conference of Wing Commanders at Langley Field, Va.

The 18th Pursuit Group participated in a Wing Review over the City of Honolulu on April 5th, as part of the Hawaiian Army Day Program. This was followed by

a Pursuit demonstration featuring a large letter "A" by the 6th Squadron and Pursuit acrobatics by the 19th Squadron. An airplane from the Group was displayed in Honolulu as a part of the Army Day Program

On April 5th, the 5th Composite Group, stationed at Luke Field, engaged in a Wing aerial demonstration over the Island of Oahu and City of Honolulu in commemoration of Army Day. On April 6th, Luke Field and the 5th Composite Group joined with all other military forces of the Hawaiian Islands in placing extensive military exhibits on the Capitol grounds for the benefit of the general public. The Air Corps exhibit consisted mainly of airplane motors, miscellaneous airplane parts, armament and parachutes, and attracted a wide attendance and very favorable comment.

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FORMATION LEADERS FLYING UNDER THE HOOD A ROUTINE OCCUPATION AT HAMILTON FIELD

Inviting attention to the item in the April 1st issue of the News Letter to the effect that the 50th Observation Squadron at Luke Field, Hawaii, has been experimenting with formations in which the leader flies under the hood, the Hamilton Field Correspondent states that occasions have developed at that field when the formation leaders were forced to fly by instruments alone through "soupy" weather as a matter of absolute necessity and not one of experiment or practice. "Accordingly," he adds, "it is urged by the pilots of Hamilton Field that their friends in the 50th continue zealously their experimentation."

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AERIAL GUNNERY BY 7th OBSERVATION SQUADRON

The 7th Observation Squadron, stationed at France Field, Canal Zone, completed its annual Gunnery Encampment which was established at Rio Hato, Republic of Panama, on April 8th. Following the completion of the course, the camp was turned over to the 25th Bombardment Squadron on April 18th, making ten days altogether in the field. A permanent crew of two officers and 17 enlisted men was maintained for the purpose of camp administration. Three officers commuted daily from France Field to Rio Hato at noon, firing in the late afternoon and early morning. In general, the firing was good, considering the poor air conditions on some mornings. All officers who fired qualified, five as Expert in the Pilots' Course and ten as Expert in the Observers' Course. Capt. C.W. Cousland made high score on the former and Major Wm.B. Mayer on the latter. Fifteen enlisted men qualified on ground targets.

COOPERATION IN METEOROLOGICAL SERVICE

In a paper recently presented during the aeronautical session of the 6th Annual Greater New York Safety Conference by Mr. Willis R. Gregg, Chief of the Weather Bureau, U.S. Department of Agriculture, he stressed the great importance of cooperative effort on the part of all agencies concerned in the organization and use of weather service to promote safety in aeronautics.

Stating that the Weather Bureau is charged by law with the responsibility of providing meteorological service for all public needs, Mr. Gregg added that, so far as weather service for aeronautics is concerned, the three governmental bureaus with which cooperation is most vitally necessary are the War, Navy and Commerce Departments.

Prior to the World War, the War and Navy Departments had no meteorological units of their own, all weather service being centered in one agency, the Weather Bureau. The experience in that war led to a change of policy relative to weather service, its great importance in military and naval campaigns leading to the creation of relatively small meteorological sections in both departments as a regular part of their peacetime organization. The service is of a highly specialized type, differing in many respects from that for any form of civil activity. The personnel engaged in it also have military training and status, with the result that these units will be able to function at once in case of war.

With the establishment of these additional meteorological organizations within the government, steps were taken to eliminate all unnecessary duplication and to make their facilities and service and those of the Weather Bureau mutually available and effective. Very complete observations, including upper air, are made at the air stations of these Departments and on aircraft carriers, and the data made available to the Weather Bureau for both current and statistical use.

The meteorological services of the War and Navy Departments depend upon the Weather Bureau for the greater part of the data they require. At Washington representatives of the two Departments copy and chart the reports at the Bureau itself. In other cases they are received by radio and in still others by means of a teletype drop connected with the airway communication system of the Department of Commerce, with the result that the data from all sources are available for the use of each service at essentially the same time.

A very important cooperation is extended to the Bureau by the communication services of the two Departments. For example, the Alaskan reports are trans-

mitted by Signal Corps radio to Seattle, Wash., whence they are distributed to other points in the States. Similarly, the Navy Department forwards reports from its own ships and in many cases collects and transmits similar reports from merchant ships, particularly during periods of severe weather conditions such as occur in the hurricane season.

The most recent example of cooperation and one of the most valuable is the organization in July, 1934, of a network of airplane observational stations, comprising 22 as against half a dozen prior to that time. About an equal number is maintained by each of the three agencies. Those of the War and Navy Departments are at their flying fields and the flights are made as a regular part of the program of training, with the result that very little additional expense is involved. The records secured are already proving to be of great benefit, although the period of their use is as yet too short to make possible a full appraisal of their value. All three services are employing the so-called "air-mass analysis" technique in the charting and study of these upper air records of temperature and humidity and from some results already obtained it is quite evident that considerable improvement in the accuracy of weather forecasting will be realized.

The Bureau of Air Commerce, Department of Commerce, responsible for the safety and efficiency of civil air transport, has direct charge of the organization and operation of certain navigational and other aids, the most important of which, so far as meteorological service is concerned, is communications which, gradually developed into its present high state of efficiency, is the medium through which weather reports and forecasts are provided promptly to pilots and others needing them. The chief difficulty, so far as weather service is concerned, is that of arranging suitable time schedules. There seems always to be more information available than there is time for its transmission. However, the problem is under constant attack by the two Bureaus, one working on the development of improved equipment and technique and the other on the possibilities of condensing or observational material, by code or otherwise, to assure the regular transmission of all that is needed by the broadcasting stations throughout the airway system. The cooperative work by the two Bureaus constitutes a very definite factor in assuring as large a margin of safety from the hazard of weather as is possible at the present time.

A type of cooperation which is gradually growing and is certain to develop into a most important feature of the whole weather service is that given by air transport companies. After an airway has been provided by the Weather Bureau with all necessary current information and forecasts, there still remains the necessity of holding or releasing each plane as its scheduled time of departure arrives. In assuming this responsibility, air transport companies have come to recognize that the dispatchers must include, as an important qualification, a very intimate acquaintance with the details of the weather service, if not a fairly comprehensive knowledge of the science of meteorology itself. Some of the larger companies have personnel with sufficient meteorological training to make them competent to apply the service furnished by the Weather Bureau to their own needs.

Weather Bureau forecasts usually cover successive periods of four to six hours, but the meteorological personnel of some of the companies supplement these by more detailed forecasts for each individual flight.

Within the past year an arrangement has been worked out with one of the air transport companies in accordance with which its pilots make notes of the weather conditions through which they pass,— temperature, height of base and top of cloud layers, occurrence of ice formations, bumpiness, rain, snow, marked inversion, change in wind direction and velocity and anything else of special interest. These data are given to the Weather Bureau's airway forecast centers as soon as the plane lands. Plans are under consideration for the receipt of the reports by radio during the flights. It is altogether probable that other companies will enter into a similar arrangement. Already important results are being realized.

The primary obligation in making a flight is to get the plane and cargo through safely, but comparatively few flights would ever be made in some sections if they were limited to really satisfactory weather conditions. Unless schedules can be kept with reasonable regularity, confidence breaks down and patronage ceases. It becomes necessary, therefore, to "strike a balance", to attempt all flights except those when it is considered that the conditions are so bad as to offer a real hazard. Decision is often difficult, particularly in what may be called "borderline" cases, when conditions are passable and are expected to continue passable for the duration of the flight, yet there is a possibility of their changing for the worse sufficiently to make flying difficult or even dangerous. The problem is being rendered progressively easier by the introduction and use of navigational and other aids, such as radio beacons, ranges,

markers and broadcasts, course lights and improved equipment and by the experience of the pilots themselves, with the result that flying is now perfectly safe in many conditions that formerly would have been considered decidedly adverse.

There are two essentials in solving this problem of safety completely. One is that information concerning the weather, both current and expected, be detailed, accurate and complete. The other is that the pilot, or other official having the responsibility of ordering or canceling a flight, give due regard to the information and forecast furnished by the meteorologist.

In a study of aircraft accidents caused wholly or in part by bad weather, it was found that the meteorological factors most frequently responsible for the occurrence of accidents are as follows, in the order of their importance:

1. Ice formation.
2. Low ceiling.
3. Poor visibility, caused by fog, rain, snow, smoke, dust, haze, sand and dust storms.
4. Heavy precipitation.
5. Bad field conditions resulting from snow, ice, rain, etc.
6. Thunderstorms, squalls, etc., with attendant strong vertical currents and turbulence.
7. Gustiness and turbulence near the ground.
8. Unfavorable winds, causing exhaustion of fuel supply.
9. Lightning.

During the years 1931 to 1934, inclusive, the period covered by the above study, there were 102 accidents in scheduled air transport operations that were definitely charged to weather. In 38 of these, or 36%, the conditions as actually encountered were known by the pilot before starting on his flight. In the remaining 14 cases, 14%, the conditions actually encountered were more unfavorable than expected, some of them being due to bad weather locally between observing stations of whose existence, therefore, there was no way of knowing.

In the light of what happened, especially in the 38 cases when it was known in advance that conditions were bad, it is of course apparent that the flights should not have been undertaken. Yet in many of these cases the conditions were no worse than on other occasions when flights had been made without accident. This emphasizes the difficulty of making a decision in these "borderline" cases, and it emphasizes also the great need of the closest kind of cooperation between pilot and meteorologist. That this cooperation is becoming increasingly well established is shown by statistics furnished by the Bureau of Air Commerce. In the year 1931, the number of accidents caused by weather was 50, as against 35 for 1932, 25 for 1933 and 12 for 1934.

The approximate number of miles flown

in the year 1931 was 47,000,000; in 1932, 52,000,000; in 1933, 54,500,000, and in 1934, 41,000,000.

In 1931, approximately 1,600,000 miles were flown per accident due to weather, as against 1,500,000 for 1932; 2,400,000 for 1933 and 3,400,000 for 1934.

From these figures we see that there has been during the past four years an increase in safety, from accidents caused by weather, of more than 100 percent in scheduled air transport operations, considered on the basis of the number of miles flown. A part of this increase is, of course, a result of improvement in other airway aids, but it is believed that by far the larger part can be attributed to the more intensive use of the airway weather service. Also, the weather service itself has been improved in many ways, chiefly through the experience gained by personnel engaged in it, the establishment of additional upper air stations and the adoption of improved, modern methods of forecasting.

In conclusion, we are quite justified in stating that, with improved design and construction of aircraft, the perfection of navigational aids, the development of an increasingly efficient weather service, and above all complete and effective cooperation on the part of all agencies involved, we may look forward with confidence to a progressively continuing decrease in the number of accidents caused by adverse weather conditions.

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LANGLEY FIELD WEATHER BROADCAST SERVICE

A system is in the process of installation at Langley Field, Va., whereby weather broadcasts similar to that of Department of Commerce Stations will be made by the Post Operations Office at Langley Field. This service will be operated on the frequency of the Langley Field radio beacon at zero minutes past the hour, during poor daylight weather, when night flights are cleared to or from Langley Field, and upon request.

The Post Operations Radio Station will guard 3105 Kcs. (and other frequencies upon request) for requests for weather information. This service will be in operation 24 hours per day.

The following sequence will be observed in the weather broadcasts:

1. Station;
2. Ceiling;
3. Condition of Sky;
4. Visibility;
5. Temperature;
6. Dew Point;
7. Direction and speed of wind;
8. Barometer;
9. Any special hazards or conditions of interest to the pilot.

When a key in the Post Operations Office is depressed, a relay to the Radio Beacon is actuated, opening the plate circuit of the transmitter tubes and temporarily silencing the Beacon. Another relay actuates the switch on a

remotely controlled SCR-132 set tuned to Beacon frequency. The operations operator on duty at his desk in Post Operations Office broadcasts his weather sequence and /or requested information. Upon releasing the key, the remotely controlled radio set cuts off and the Beacon resumes its broadcast.

The operations personnel are being trained in broadcast procedure and voice so that the pilot flying blind can hear "Ceiling Zero, Visibility Zero," spoken by a pleasant, modulated "voice with a smile."

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AERIAL SURVEY TO DETERMINE THE EXACT BOUNDARY LINE OF THREE COUNTRIES

The 12th Photo Section, Air Corps, stationed at France Field, Panama Canal Zone, completed 5,000 multiple lens prints from 1200 T3-A camera negatives made by Major W.R. Taylor and Sgt. George W. Edwards on the border line of Guatemala, Honduras and El Salvador. These photographs were made at the request of the State Department for the Arbitration Commission of the three countries who are settling the exact boundary line.

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88th OBS. SQDN. RETURNS FROM WEST COAST

The 88th Observation Squadron (LR Amphibian) returned April 17th from March Field, Riverside, Calif., where four days were spent participating in maneuvers of the 1st Wing (to which this squadron is attached). The flights out and return were made as Squadron air navigation missions under the leadership of Major Calvin E. Giffin, Squadron Commander.

The seven planes making the trip, in two flights of four and three planes, respectively, took off from Brooks Field at 5:30 a.m., April 13th, and arrived at March Field, flying by way of El Paso, Texas, and Tucson, Arizona, about 4:30 p.m., Pacific Coast time the same day.

The following day was passed in critique, flying practice review, and the Wing Dinner, at which affair all pilots of the 1st Wing were addressed by Major-General Paul B. Malone, 9th Corps Area Commander, and by Brigadier-General Henry E. Arnold, Commander of the 1st Wing.

On April 15th, the entire Wing participated in Mass Maneuvers and in a review honoring General Malone. Some 150 planes, comprising one Bombardment Group, Hamilton Field; one Attack Group, March Field; one Observation Squadron, Rockwell Field; one Squadron from Crissy Field, and the 88th Squadron from Brooks Field took part in these maneuvers.

BARKSDALE FIELD BECOMES ONE OF LEADING CROSS-ROADS IN SERVICE AVIATION

Barksdale Field, Shreveport, La., long the proposed and now the actual home of the Third Wing, GHQ Air Force, is rapidly becoming one of the leading cross-roads in service aviation. The Navy, Coast Guard and Marine branches, as well as our own Air Corps, make frequent use of Barksdale Field's facilities in East-West crossings of the continent. The southern route for this crossing is becoming of increasing importance and, in many instances, shortens distances.

As evidence of the convenience and importance of this field, the following data as to distinguished visitors during April is submitted by the News Letter Correspondent:

Major-General George S. Simonds, Deputy Chief of Staff of the Army, accompanied by his Aide, 1st Lieut. C.K. Galley, made an informal inspection of the new Third Wing at this field on April 3rd. The two officers were flying in an Army Transport plane, piloted by Capt. Hoz McClellan. The extended inspection trip taken by General Simonds, utilizing air transportation, is evidence of increasing air-mindedness on the part of General Staff officers. General Simonds inspected many Army fields, as well as other Army posts and installations during the trip.

General Foulcois, accompanied by Captain F.A. Halverson, made an informal inspection of the field on April 4th. On April 24th, General Foulcois, this time accompanied by Major Carl Spatz, again stopped at Barksdale Field, remaining overnight.

Hon. Harry H. Woodring, Assistant Secretary of War, honored Barksdale Field with his first visit on April 17th. He expressed himself as well pleased with the field and the aerial review held in his honor.

Captain Albert C. Reed, who flew the NC-4 across the Atlantic Ocean in 1919; Lieut.-Col. Roy Geiger, Chief of Marine Corps Aviation, and Major Francis P. Mulcahy, veteran Marine Corps flier, made a brief stop at this station, en route to California. Colonel Geiger was ferrying a new Vought Corsair Observation plane

to San Diego.

Mr. George S. Wheat, Vice President of the United Aircraft Corporation, arrived on April 4th, shortly after General Foulcois departed. His pilot was Mr. B.K. Whelan, Manager of United Airports of Connecticut, Inc., and Mr. Philip Novin was co-pilot. Mr. Wheat recently returned from a trip around the world, during which he visited many air fields of various sizes and prominence, and he expressed himself as being greatly impressed by this Army air base. Several officers of this station were taken for a demonstration ride in the latest type Boeing 2-47, equipped with two double-row Wasp engines of 700 horsepower and new constant speed, variable pitch propellers, prior to Mr. Wheat's departure on April 5th.

Capt. John H. Hoover, Chief of Staff to the Commandant of the Aircraft base force of the U.S. Fleet, accompanied by Lieut.-Commander Alfred Stump, made an overnight stop here on April 13th, en route to San Diego. On the same date, Commander Alfred Montgomery, from Pensacola, Fla., also enroute to the West Coast, spent the night at Barksdale Field.

In addition to the largest landing field in the country, Barksdale Field comprises a large area of lakes, bayous and woods. This area is part of the reservation and provides machine gun and bombing ranges. The total area of the reservation is some 22,500 acres. Tentative plans of the Fourth Corps Area call for the assignment of two CCC companies for the care of the wooded areas. Each company will require 14 buildings for housing, administration and messing. Last summer, forest and brush fires threatened a large portion of the outlying areas, and at one time several thousand acres of woodland were burned. This area of woods and lakes provides an ideal fish and game sanctuary. A limited amount of fishing and hunting in season is now allowed, and by means of proper conservation methods, it is hoped to make this feature the cause for many visitors.

The present population of Barksdale Field, including families of officers and enlisted men, is about 2,500.

TIMELY WARNING BY ARMY PILOTS AVERTS CALAMITY

The 11th Bombardment Squadron, Hamilton Field, Calif., received credit for another errand of mercy on April 15th. A troop of sea scouts had put out from a San Francisco wharf in two boats, provisioned with food reported to be poisonous. Upon receiving word of the situation, Lieuts. Aubrey K. Dodson and O.M. Nelson immediately took off, located the two boats on San Francisco Bay with neatness and dispatch, and successfully dropped messages to the Scouts, saving them from possible death or serious illness.

LIBRARY ESTABLISHED AT HAMILTON FIELD

Chaplain Stanley J. Reilly transformed the old frame building, originally erected as an office of the Constructing Quartermaster, into a chapel of worship. Through his efforts, the people of the Bay districts have given of their books and magazines to the soldiers at Hamilton Field. With this as a nucleus, he has organized a post library with almost a thousand volumes. He is now the Post Library Officer as well as the Post Chaplain. Chaplain Reilly has also sponsored a movement for the initiating of a Hamilton Field Stump Club among the children of the post.

For heroism while participating in aerial flight.

Air Corps

Lieut. Russell L. Meredith

For hazardous flight, February 7, 1923, taking medical aid to injured man at point of death on Beaver Island, Lake Michigan, under extremely adverse and dangerous flying conditions.

2nd Lieut. Uzal G. Ent

During the National Elimination Balloon Race, starting from Bettis Field, Pittsburgh, Pa., May 30, 1928, the balloon was struck by lightning, instantly killing Lt. Paul Evert, pilot. Not certain that pilot was killed, Lt. Ent, aide, endeavored to revive him at the risk of his own life instead of jumping with his parachute.

Master Sgt. Ralph W. Bottriell

On May 19, 1919, at McCook Field, Dayton, O., he made the first jump to be performed by Army personnel with a manually operated free type parachute. Jumping of any kind was then considered extremely hazardous. Sgt. Bottriell repeatedly jeopardized his life while making parachute test jumps from airplanes flying at various speeds and altitudes to perfect this parachute. By his untiring efforts, fearlessness and disregard of personal danger, he aided materially in proving the practicability of the free type parachute for airplane use.

Captain Hawthorne C. Gray (posthumously)

On March 9, 1927, he attempted to establish a world's altitude record for the Air Corps, and reached 27,000 ft.; on May 4, 1927, he reached 42,470 ft. and on Nov. 4, 1927, 42,000 ft. After reaching the ceiling on his last attempt, the supply of oxygen became exhausted when the balloon reached about 37,000 ft. on the descent, and Capt. Gray lost his life.

Captain Ulysses G. Jones, pilot

1st Lt. Walter T. Meyer, Radio Operator,

2nd Lt. Edwin T. Rawlings, pilot

Staff Sgt. Robert F. Summers, mechanic

During a tactical training flight of 16 planes from Luke Field to Hilo, Hawaii, May 14, 1930, one of the bombers fell out of control and the crew were forced to take to their parachutes, landing in a rough sea. Capt. Jones and Lt. Rawlings, each piloting amphibian planes, landed on the water in an attempt to rescue these men. Owing to the high wind and waves, coupled with the non-functioning of motors of these planes, efforts made to maneuver them towards the men in the water proved unsuccessful. However, by landing in close proximity to them the crew of a Naval flying boat was able to see the men and effect their rescue.

2nd Lt. Irvin A. Woodring

2nd Lt. Wm. W. Caldwell, Res. (posthumously)

On October 15-16, 1930, Lieut. Woodring as flight leader, accompanied by Lt. Caldwell, both piloting Pursuit planes, proceeded from

Vancouver, Canada, under secret orders of the War Department, to Newark, N.J., carrying documents of international importance for delivery to a State Department agent at Newark, their receipt by the latter on scheduled time being of the utmost importance. Extremely hazardous flying conditions were encountered in Wyoming, snow and clouds completely destroying visibility from the ground to an altitude of 16,000 feet. Lieut. Woodring, carrying the original papers, delivered them in time.

Lieut. Caldwell, blinded by a snow storm, crashed to his death.

1st Lt. Robert D. Moor (posthumously)

On August 23, 1931, during a formation flight, a terrific air current encountered caused one of the planes to be thrown against the one piloted by Lt. Moor, damaging the tail group and rendering it uncontrollable. Instead of jumping with his parachute, Lt. Moor endeavored first to save his passenger and repeatedly ordered him to jump. The latter eventually jumped and landed safely with his parachute, but in leaving he unbalanced the airplane which immediately fell out of control, crashed and burst into flames, resulting in Lt. Moor's death.

Sergeant Frank D. Neff

On the night of Dec. 3-4, 1931, during a severe wind and rain storm, the Army airship TC-71 broke from its moorings. Sgt. Neff succeeded in starting one of the motors but was unable to start the other from within the car. Realizing that the airship was not under full control and in danger of being wrecked and the crew injured, he immediately discarded the parachute, climbed out of the car upon the unprotected outrigger of the wildly plunging dirigible, and working in the darkness in this perilous position succeeded in hand-cranking the left motor, thereby bringing the aircraft under full engine control.

1st Lt. Cornelius W. Cousland

While piloting an amphibian plane May 31, 1934, in the Panama Canal Zone, mechanical failure caused a portion of the right motor to penetrate the pilot's cockpit with such force that the co-pilot was fatally injured and fell across Lt. Cousland and the controls. The plane started into a spin. Disregarding his own serious injuries, Lt. Cousland ordered his passengers to retain their seats, and by his courage, presence of mind and complete mastery of the art of piloting, maneuvered the disabled aircraft to a safe landing on the surface of a stump-studded lake.

Awards for other outstanding accomplishments

Orville Wright

Wilbur Wright (posthumously)

Designed, constructed and operated the airplane which at Kitty Hawk, N.C., Dec. 17, 1903, made the first successful flight under its own power and carrying a human operator, thereby making possible the achievements which are now stirring the emotions and pride of the world.

Mrs. Amelia Earhart Putnam

For displaying heroic courage and skill as a

navigator, at the risk of her life, by her non-stop flight in her plane from Harbor Grace, Newfoundland, to Londonderry, Ireland, on May 20, 1932, by which she became the first and only woman and the second person to cross the Atlantic Ocean in a plane in solo flight, and also established new speed records and elapsed time between the two continents.

Air Marshall Italo Balbo, Italian Air Force
General Aldo Pellegrini, Italian Air Force

In recognition of the Italian mass flight to the United States in 1933.

AWARD OF OAK LEAF CLUSTER TO THE D.F.C.

Captain Eaker, Lts. Doolittle and Hegenberger were also awarded the Oak Leaf Cluster, D.F.C., the first-named for service as relief pilot in the Refueling Duration Flight, January 1 - 7, 1929; Lieut. Doolittle for performing a series of acceleration tests with a PW-7 Pursuit plane, which was put through the most extreme maneuvers possible in order that the flight loads imposed upon the wings of the plane might be ascertained, thereby securing scientific data of great and permanent importance to the Air Corps, and Lieut. Hegenberger for his valuable contribution to aviation in perfecting the instrument landing system.

AWARD OF D.F.C. TO U.S. MARINE CORPS PERSONNEL

Lieut.-Colonel Thomas C. Turner

Extraordinary achievement in aerial flight as Commanding Officer, April 22, 1921, in flight from Washington, D.C. to San Domingo and return.

Major Louis M. Bourne, Jr.

In aerial flight from Miami, Fla. to Managua, Nicaragua, on January 14, 1928.

Major Ross E. Rowell

On July 16, 1927, in Nicaragua, leading flight of five planes in the face of tropical storm, conducted the attack in which the greater part of the enemy were destroyed, and saved the little garrison at Ocotal from almost certain destruction.

Captain Alton N. Parker

Pilot on December 5, 1929, during a flight of exploration over the unexplored regions of the Antarctic.

1st Lieut. Frank D. Weir

1st Lieut. Frank H. Lamson-Scribner

Piloting plane in attack against strong force of bandits in Nicaragua, Jan. 14, 1928.

1st Lieut. Hayne D. Boyden

For extraordinary heroism, initiative and excellent judgment while in command of an air patrol in the attack against the enemy on July 16, 1927, at Ocotal, Nicaragua.

1st Lt. Basil G. Bradley, Executive Officer

1st Lt. L.H.M. Sanderson, Engineer Officer

Charles W. Rucker, Gunmery Sgt., Mechanic

Extraordinary achievement in aerial flight on April 22, 1921, from Washington, D.C., to San Domingo and return.

Chief Marine Gunner Michael Wodarczyk
For extraordinary achievement in aerial flight on Feb. 28, 1928, and March 19, 1928, in Nicaragua.

Master Tech. Sergeant Albert S. Munsch
For extraordinary achievement in aerial flight as pilot in Nicaragua, January 14, 1928.

Major Ralph J. Mitchell

While commander of the Aircraft Squadrons in Nicaragua, he led six-plane patrol in attack against bandits in Nicaragua, June 19, 1930.

Captain Byron F. Johnson

In command of a two-plane patrol in attack against bandits in Nicaragua in the morning and afternoon of June 19, 1930.

1st Lieut. Herbert P. Becker

In command of a 2-plane patrol in attack on a strong force of bandits in Nicaragua on July 22, 1931, and again on July 26, 1931.

1st Lieut. Charles L. Fike

1st Lieut. John M. Hart

Piloting a plane in attacks against bandits in Nicaragua on May 2, 1930 and June 19, 1930.

1st Lieut. John S.E. Young

Piloting a plane in attacks against bandits in Nicaragua on morning and afternoon of June 19, 1930.

2nd Lieut. Raymond P. Rutledge

Piloting a plane in attacks against bandits in Nicaragua on May 23, 1932. Located the crew of a plane lost in the dense jungles and for three days until he was killed in an accident over the jungles, made many flights under extremely dangerous conditions to drop supplies to the stranded crew and to direct a ground patrol that was proceeding to its rescue.

Gunnery Sergeant Neal G. Williams

Piloting a plane in attack against bandits in Nicaragua on July 6, 1932.

Staff Sergeant Gordon W. Heritage

Piloting a plane in attack against bandits in Nicaragua on July 22, 1931.

Sergeant Hilmer N. Torner

While a passenger in an airplane on March 22, 1932, at San Diego, Calif., the pilot became ill and fell forward on the controls in a fainting condition. Torner pulled the pilot from the controls and righted the plane which was falling in a spinning motion from an altitude of approximately 2,000 feet. Although he had never flown a plane, Torner landed it without damage and then administered first aid to the pilot.

AWARD OF D.F.C. TO OFFICERS OF U.S. NAVY

Commander Robert R. Paunack

Saving the dirigible C-8 from destruction on January 3, 1919, by fire, thereby saving the lives of its crew of six.

Rear Admiral Richard E. Byrd (Retired)
Lieut. George O. Noville, U.S.N.R.
New York to France Flight of 1927.

Lieut.-Commander Ben H. Wyatt
Alaskan Aerial Survey Expedition, 1926. Was
in command of expedition during entire time.

Lieut. Delbert S. Cornwell
Attempting to save the life of a passenger
while maneuvering at an altitude of 2,000
feet, the left wing of the plane collapsed.
The plane crashed to a complete wreck, result-
ing in death of passenger and injury to the
pilot (November 18, 1926).

Lieut. (JG) William V. Davis
Dole Air Race, August 16, 1927. Was navi-
gator of the winning plane "Woolaroc."

Lieut. Alford J. Williams
For experimental flights during March, 1928.
Obtaining data and developing methods of con-
trol for airplanes in inverted flight; also
putting planes in tail spins and observing
action, from which observations he developed
procedure to be followed to get planes out of
tail spins. Stayed with one plane in a spin
so long that plane crashed.

Lieut. Wallace N. Dillon, Executive Officer
Lieut. Eugene F. Burkett, Navigator (Dec.)
Lieut. Richard F. Whithead, Photo Officer
Aided materially in successfully performing
a hazardous and difficult aerial survey of
Southeastern Alaska during summer of 1926.

Claude G. Alexander, Chief Radio Electrician
Alaskan Flight as above.

Lieut. Apollo Soucek
Extraordinary achievement in the art of
high altitude flying, establishing on June 4,
1929, a world's altitude record for seaplanes,
and on June 4, 1930, a world's altitude record
for heavier-than-air craft.

Lieut. George T. Cuddihy (Deceased)
For his discovery of the principle of re-
gaining control of a plane in a tail spin and
for other daring ventures in the realm of ex-
perimentation which contributed toward ad-
vancement of the science of aeronautics.

Lieut. Emory B. Bronte, U.S.N.R.
In recognition of his heroic courage and
great skill as a navigator on the second suc-
cessful airplane flight from California to the
Hawaiian Islands under extreme adverse weather
conditions, July 14-15, 1927.

AWARD OF D.F.C. TO ENLISTED MEN, U.S. NAVY

Harold Irving June, Chief Aviation Pilot
Navy's representative and member of crew of
'Floyd Bennett' which flew over South Pole on
Nov. 29, 1929. Byrd Antarctic Expedition.

Patrick A. McDonough, Chief Photographer
William J. Murtha, Photographer, 1st Cl.
Alaskan Aerial Expedition during summer of
1926, materially aiding in successfully per-

forming a hazardous and difficult aerial survey
of Southeastern Alaska.

Thomas G. Reid, Chief Aviation Pilot
(Posthumously)
Alaskan Aerial Expedition, 1926, as above.

Doyle Joseph Cavin, Aviation Machinist's
Mate.

For extraordinary achievement while partici-
pating in aerial flight from Coco Solo, Canal
Zone, to David, Republic of Panama, on December
14, 1933.

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SOME USEFUL "DOPE" FOR THOSE GOING TO HAWAII

The Wheeler Field Correspondent submitted
some interesting information regarding condi-
tions in the Hawaiian Islands which should
prove very useful to officers now under orders
and those who expect orders for duty in the
Hawaiian Department. He states:

a. Do not buy any white or khaki uniforms
prior to your arrival. A reasonable time is al-
lowed for the procurement of the above, and
Japanese regimental tailors can outfit you com-
pletely in made-to-order style at a much more
reasonable price than mainland tailors. Your
minimum requirements here are as follows:

1 white service uniform complete
1 white mess jacket and vest with black high-
out tuxedo slacks.

Sufficient blouses, breeches, slacks and
shirts of regulation khaki to permit you to
present a good appearance on all occasions.
b. Bring a good tuxedo. Except when the mess
jacket is prescribed, the tuxedo is worn ex-
clusively during the evening at social functions
or at home.

c. Due to the large amount of over-water fly-
ing engaged in by the Air Corps at this sta-
tion, boots are seldom worn. However, for in-
spections, ceremonies, etc., spurs are pre-
scribed (Air Corps lace boots excepted).

d. Move everything to Wheeler Field that you
would care to take with you to any mainland
station. Bring your furniture, your piano,
radio and books. In fact, bring everything.
Veneered furniture is not affected here any
more so than at any mainland station close to
the sea. You will enjoy your music here as
much as ever. Up-to-date model radios are ca-
pable of excellent mainland reception and, in
addition, Honolulu possesses two modern broad-
casting stations whose programs are enjoyed
throughout the Islands. Our climate is not as
humid and damp as in most tropical locations
so, again - bring your home with you. The
quarters are large and you will not regret
your decision to do so.

e. Shoes are somewhat expensive in Hawaii. It
is recommended that you purchase a sufficient
supply on the mainland to suffice for a period
of two years or so.

f. The automobile question arises. Your
license (yearly) will cost you one cent per
pound, so don't bring a locomotive with you. A
Ford weighs 2,600 pounds - result is \$26.00.

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You sketch artists in the Air Corps - how
about sending in cover designs for News Letter?

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Langley Field, Va.: Captains Barney M. Giles and John E. Upston for duty with GHQ Air Force, upon completion of present course of instruction at Air Corps Tactical School, Maxwell Field, Ala. - 1st Lt. Stuart G. McLennan for duty with GHQ Air Force upon completion of tour of foreign service - Captain David R. Gibbs, from Philippines, relieved from temporary rank upon date of departure, - Captain Walter Bender, from Chanute Field, for duty with GHQ Air Force.

To March Field, Calif.: 1st Lt. Robert M. Losey, from California Institute of Technology, Pasadena, for duty with 1st Wing.

To Hamilton Field, Calif.: 1st Lt. Richard C. Lindsay and 2nd Lt. William Ball, from Crissy Field - Major Clinton W. Russell from duty on War Dept. General Staff to duty with Station Complement.

To Chapman Field, Miami, Fla.: Major Wm. V. Andrews, from Bolling Field. Relieved from temporary rank May 19, 1935.

To Office, Chief of the Air Corps: 1st Lt. Donald F. Stace, from Brooks Field.

To Washington, D.C.: Captain William L. Ritchie, from Scott Field, Ill., for duty in Office of Assistant Secretary of War. Relieved from temporary rank, June 5, 1935.

To Barksdale Field, La.: Colonel Robert Goolrick, from Wright Field, for duty as Station Complement Commander - 2nd Lieut. Arthur F. Morewether, from duty as student at Mass. Inst. of Technology, for duty with 3d Wing.

To Randolph Field, Texas: Captain Courtland M. Brown from Hawaiian Dept. for flying training with class commencing July 1, 1935.

To Bolling Field, D.C.: Major Leslie MacDill upon completion of present course of instruction at Naval War College, Newport, R.I. Previous orders in his case revoked.

To Philippines: 1st Lt. James F. Phillips from duty as student A.C. Engineering School, Wright Field.

To Hawaiian Department: Major Don L. Hutchins from Hamilton Field. Relieved from temporary rank May 14, 1935.

To Los Angeles, Calif.: Capt. Leon W. Johnson from duty with 2nd Observation Squadron in Philippines and from temporary rank and to pursue course of instruction at California Institute of Technology.

To Houston, Texas: Captain Harry Weddington for duty as instructor, Air Corps, Texas Nat'l Guard, upon completion of present course of instruction at Air Corps Tactical School.

To Chanute Field, Ill.: 1st Lieut. Samuel V. Stephenson, upon completion of present course of instruction, A.C. Tactical School.

To Fort Leavenworth, Kansas.: Lieut.-Col. Lewis H. Brereton from Panama for duty as Instructor, Command and General Staff School.

To Wright Field, Ohio: Captain Pearl H. Roboy from Barksdale Field to duty as student at A.C. Engineering School. Relieved from temporary rank, August 1, 1935.

RETIREMENT: Captain Frederick A. Johnson, April 30, 1935.

ORDERS REVOKED: Assignment of 1st Lieuts. Dudley D. Hale and Warren H. Higgins to Panama Canal Department - assignment of Major Eugene A. Lohman, March Field, as Instructor as Command and General Staff School, Ft. Leavenworth.

PROMOTIONS: to 1st Lieutenant: 2nd Lieuts. George F. Kehoe, rank April 4th; Roy H. Lynn, rank April 5th.

DETAILED TO AIR CORPS: 2nd Lieut. Stephen O. Fuqua, Jr., to Randolph Field, Texas, July 1, 1935, for primary flying training.

1st Lt. Maurice C. Bisson to Hawaiian Dept. upon completion of present course of instruction at Air Corps Technical School.

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TEMPORARY PROMOTIONS

To Lieut.-Col.

Major Shiras A. Blair, Station Complement Commander, Mitchel Field, N.Y., May 2, 1935.

Captain Claude E. Duncan, Executive and Operations Officer, 1st Wing, March Field, Calif., May 2, 1935.

To Captain

1st Lt. Roland O.S. Akro, Adjutant, Station Complement, Mitchel Field, May 2, 1935.

2nd Lt. Eugene H. Beebe, Adjutant, 1st Wing, March Field, Calif., May 2, 1935.

1st Lt. Alva L. Harvey, Flight Commander, 49th Bombardment Squadron, Langley Field, May 2, 1935.

1st Lt. Don W. Mayhue, Intelligence and Communications Officer, 3d Wing, Barksdale Field, La., May 7, 1935.

1st Lt. James S. Stowell, Director, clerical, A.C. Technical School, Chanute Field, May 7, '35.

To 1st Lieut.

2d Lt. David H. Baker, Armament Officer, 78th Pursuit Squadron, Panama.

2d Lt. Hubert P. Dellinger, Chief Inspector, Philippine Air Depot, May 3, 1935.

2d Lt. Aubrey K. Dodson, Supply Officer, 11th Bombardment Squadron, May 11, 1935.

2d Lt. Robert E.L. Eaton, Supply Officer, 1st Bombardment Squadron, Mitchel Field, May 2, 1935

2d Lt. Robin B. Epler, Communications Officer 7th Obs. Squadron, April 25, 1935.

2d Lt. Flint Garrison, Jr., Engineering Officer, 24th Pursuit Squadron.

2d Lt. Robert L. Scott, Jr., Communications Officer, 78th Pursuit Squadron, Panama.

2d Lt. Albert W. Shepherd, Engineering Officer, 74th Pursuit Squadron, Panama.

2d Lt. Norman D. Sillin, Armament Officer, 29th Pursuit Squadron, April 25, 1935.

2d Lt. James D. Underhill, Armament Officer, 7th Observation Squadron, April 25, 1935.

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Captain Ira R. Koenig, assigned as commander of the 1st Balloon Squadron, was advanced to rank of Major, effective May 7, 1935.

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Cants. Melie J. Coutlee, Bernard A. Bridget, 1st Lts. George F. Hartman, Millard C. Young and Daniel F. Callahan, Jr., are relieved from temporary rank on date of departure from Panama.

V-6787, A.C.

CATERPILLAR CLUB PASSES 700 MARK

The Caterpillar Club, mythical in character insofar as its status as a bona fide organization is concerned, is continually adding new members to its fold and, so far as it has been possible to ascertain, there are at this writing 705 names on its roster - 697 men and 8 women - who were saved by the parachute.

The number of emergency parachute jumps totals 739, since thus far 28 men made two emergency jumps each; one, Major Frank O'D. Hunter, Air Corps, three; and one, Colonel Charles A. Lindbergh, the High Potentate of the Order of Caterpillars, four jumps.

There are listed below the names of those who made emergency jumps since January 1, 1934. The accuracy of this roster is not vouched for, since it is well nigh impossible to keep an accurate check on emergency jumps made by civilian flyers. For example, only just recently, attention was invited to the case of Miss Babe Smith, who on July 17, 1932, almost three years ago, became eligible for initiation into the Caterpillar Club as the outcome of a practice parachute jump. The shrouds of the pilot chute hooked over her foot when she

"bailed" out at 2,000 feet, effectually preventing the opening of the main chute. Her strenuous efforts to shake the shroud lines free proved without avail, and finally, at 200 feet, she opened her emergency parachute and landed without injury.

Some may question the propriety of admitting to membership in the Caterpillar Club airmen or airwomen who made parachute jumps under such or similar circumstances, since there was no aircraft failure during flight.

Early in the history of the Caterpillar Club, when names were eagerly sought of those who were saved by the parachute to justify the existence of this mythical society, two men were admitted to membership who made practice jumps and found it necessary to use their emergency parachute in order to effect a safe landing. It was then contended that the main consideration involved in eligibility for membership was the fact that the parachute was instrumental in saving the life of the jumper in the extreme emergency, and this policy was since adhered to in similar cases which followed - and there were quite a number of them.

ROSTER OF CATERPILLAR CLUB, JANUARY 1, 1934 TO MAY 1, 1935

<u>No.</u>	<u>Date</u>	<u>Name</u>	<u>Rank</u>	<u>Place of Jump</u>
	1934			
617	January	George Yeschke	Civilian	Pittsburgh, Pa.
618	January	Edward W. Anderson	2nd Lieut. Air Corps	Imperial, Pa.
619	January	J. F. Gauterbine	Civilian	Vancouver, Washington.
620	January	Beirne S. Lay, Jr.	2nd Lieut. Air Reserve	Langley Field, Va.
621	January	Marlin Eddy	Staff Sgt. Air Corps	Langley Field, Va.
622	January	Levin T. Miller	Corporal, Air Corps	Langley Field, Va.
623	January	Stanton R. Amistead	Civilian	Montgomery, Ala.
624	February	Donald W. Eisenhart	Flying Cadet, Air Corps	Near Kelly Field, Texas.
625	February	Demas T. Crow	1st Lieut. Air Corps	Wheeler Field, Hawaii
626	February	Royden E. Beebe	2nd Lieut. Air Corps	Wheeler Field, Hawaii
627	February	Charles H. Anderson	2nd Lieut. Air Corps	Selfridge Field, Mich.
628	February	A. G. Gaden	Lieut. (JG) U.S. Navy	Near Pearl Harbor, T.H.
629	February	S. D. Kamrar	A.C.M.M., U.S. Navy	Near Pearl Harbor, T.H.
630	February	C. P. May	A.C.M.M., U.S. Navy	Near Pearl Harbor, T.H.
631	February	W. L. Gruber	Aerog. 1st Cl. U.S. Navy	Near Pearl Harbor, T.H.
632	February	L. A. Bowen	A.M.M., 3d Class, U.S.N.	Near Pearl Harbor, T.H.
633	February	T. P. Goley	A.M.M., 1st Cl., U.S.N.	Near Pearl Harbor, T.H.
634	February	Ray Martinez	Civilian	San Mateo, Calif.
635	February	John H. Gibson	2d Lieut. Air Reserve	Mansfield, Ohio.
561	February	Norman R. Burnett**	2d Lieut. Air Corps	Freemont, Ohio.
636	March	D. L. Noyes	Civilian	Near Fredericksburg, Va.
637	March	Paul D. Burkner	2nd Lieut. Air Corps	Near Edgard, La.
638	March	Victor L. Anderson	Flying Cadet, Air Corps	Near Kelly Field, Texas.
639	March	W. L. Corliss	Ensign, U.S. Navy	San Diego, Calif.
640	April	N. F. Crumley	2nd Lieut. Air Reserve	Winfield, Pa.
641	April	D. H. Baxter	2nd Lieut. Air Corps	Winfield, Pa.
642	April	W. G. LeFarte	Private, Air Corps	Winfield, Pa.
643	April	Carlos L. Reavis	Civilian	Denver, Colorado.
644	April	Francis R. Drake	Flying Cadet, Air Corps	Near Laredo, Texas.
645	April	J. C. Pennington	Flying Cadet, Air Corps	Bracken, Texas.
646	April	George A. Hatton	Ensign, U.S. Navy	Pensacola, Fla.
647	April	Hugh Herndon, Jr.	Civilian	Palmetto, Georgia
648	April	Ed. Sherman	Civilian	Palmetto, Georgia
649	April	Albert R. Jackson	Civilian	Little Falls, Minn.
650	May	James O. Foster	Civilian	Birmingham, Ala.
651	May	David P. Levy	Civilian	Wichita, Kansas.

<u>No.</u>	<u>Date</u> 1934	<u>Name</u>	<u>Rank</u>	<u>Place of Jump</u>
652	May	7 Gilmore V. Minnis	Flying Cadet, Air Corps	Near Kelly Field, Texas
653	May	9 Edwin A. Warren	2nd Lieut. Air Reserve	Selfridge Field, Mich.
654	May	9 Joe Gonzales	Staff Sgt. Air Corps	Davison, Mich.
655	May	15 J. Stanley Holtoner	Flying Cadet, Air Corps	Near Kelly Field, Texas
656	May	16 William M. Marks, Jr.	Flying Cadet, Air Corps	Castroville, Texas
443	May	28 Neal E. Ausman **	2nd Lieut. Air Corps	Chorrera, Panama
657	May	30 Nels O. Sondergard	Civilian	Lake Zurich, Ill.
658	May	31 Frederick W. Soule	Civilian	New Haven, Conn.
659	June	10 Jack A. Becke	Civilian	Dallas, Texas
660	June	12 Ely M. Kinney	Civilian	Schenectady, N.Y.
371	June	14 Paul Hovgard **	Civilian	Lancaster, N.Y.
661	June	24 Herbert H. Mills	Capt. Comd. Nat'l Guard	Rutland, Vermont
662	July	9 David R. Young	Lieut. U.S. Navy	Winter Harbor Shoals, Maine
663	July	9 J. W. Murray	P.M., 2d Class, U.S. Navy	Winter Harbor Shoals, Maine
664	July	13 Frank G. Irvin	1st Lieut. Air Corps	Wright Field, Ohio
56	July	24 Bernard A. Bridget **	1st Lieut. Air Corps	France Field, Panama
665	July	29 Orvil A. Anderson	Captain, Air Corps	Holdrege, Nebraska
666	July	29 William E. Kepner	Major, Air Corps	Holdrege, Nebraska
667	July	29 Albert W. Stevens	Captain, Air Corps	Holdrege, Nebraska
668	August	7 Henry G. Thorne	Private, Air Corps	Atlanta, Texas
669	August	7 Archie J. Old	2nd Lieut. Air Reserve	Atlanta, Texas
670	August	10 Lester R. Williams	2nd Lieut. Air Reserve	Logansport, La.
671	August	20 S. D. Grubbs, Jr.	2nd Lieut. Air Corps	Kelly Field, Texas
672	August	28 W. H. Morris	Flying Cadet, Air Corps	Randolph Field, Texas
673	September	22 James C. Simmons	Flying Cadet, Air Corps	Summerfield, La.
450	September	27 James M. Treweek **	Private, Air Corps	Cumberland, Ohio
674	October	2 Fay W. Olmstead	Flying Cadet, Air Corps	Deer Man's Gulch, Calif.
675	October	2 Edward J. Hale	2nd Lieut. Air Corps	Near Kelly Field, Texas
676	October	3 W. G. Mullins	Lieut. U.S. Navy	Near Guantanamo, Cuba
677	October	4 Warren R. Carter	Captain, Air Corps	Browns, Alabama
678	October	9 Thomas J. Gaughen, Jr.	2nd Lieut. Air Reserve	Waldenburg, Mich.
679	October	18 Arthur Prestridge	Private, Air Corps	Redwater, Texas
680	October	18 Leroy A. Rainey	2nd Lieut. Air Reserve	Redwater, Texas
681	October	31 William D. Eckert	2nd Lieut. Air Corps	Fox Hill, Va.
682	November	5 Rodney E. Jones	Flying Cadet, Air Corps	Fort Eustis, Va.
683	November	6 Earle G. Harper	Captain, Air Corps	Bismarck, Ill.
684	November	6 Frank F. Berfield	Private, Air Corps	Bismarck, Ill.
685	November	6 Joseph E. Daley, P	Private, Air Corps	Bismarck, Ill.
686	November	6 William E. Browning	Civilian Observer, A.C.	Bismarck, Ill.
687	November	8 Julius T. Flock	1st Lieut. Air Corps	Fowlerton, Texas
232	November	8 Stevens G. Bancroft **	Ensign, U.S. Naval Reserve	Everglades, near Miami, Fla.
688	November	24 C. L. Smith	1st Lt. Minn. Nat'l Guard	Diamond Bluff, Wis.
260	November	28 Robert G. Chew **	Air Mail Pilot	Scottsboro, Alabama.
689	December	12 Anthony G. Eubanks	Flying Cadet, Air Corps	Near Boerne, Texas
690	December	12 G. S. Buchanan	Flying Cadet, Air Corps	Brooks Field, Texas
691	December	14 F. L. Anderson	2nd Lieut. Air Corps	Pacific Ocean (San Francisco)
692	December	14 D. R. MacVean	Sergeant, Air Corps	Pacific Ocean (San Francisco)
1935				
693	January	11 Charles W. Wellman	Corporal, Air Corps	Brooksville, Indiana
694	January	19 F. R. Cook	Flying Cadet	Cortoro, Arizona
695	March	5 Clarence D. Fields	Staff Sgt. Air Corps	Pescado River, Panama
696	March	6 John H. Price	Sergeant, Air Corps	Near Centerville, Texas
697	March	16 A. R. Radford	Lt.-Comdr. U.S. Navy	Near Woodville, Texas
698	April	4 John F. Guilmartin	Flying Cadet, Air Corps	Colton, Calif.
699	April	5 Daniel S. Campbell	2nd Lieut. Air Corps	Pearl City, Hawaii
700	April	8 A. B. Thompson	Lieut. (JG) U.S. Navy	Ramona, Calif.
701	April	8 J. Hulme	Lieut. (JG) U.S. Navy	Ramona, Calif.
702	April	8 H. G. Holden	Seaman, 1st Cl. U.S. Navy	Ramona, Calif.
703	April	15 William C. McDonald	Sergeant, Air Corps	Ashland, Ky.
704	April	17 John W. Green	Civilian	Boston, Mass.
705	April	17 John B. Ackerman	2nd Lieut. Air Corps	Kelly Field, Texas.

Addenda

491a	July	17 Babe Smith	Civilian	Akron, Ohio.
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NOTE: ** Second emergency parachute jump.

It is interesting to note that among the emergency parachute jumps recently made, the one by Sergeant John H. Price, on duty at the San Antonio Air Depot, not only constituted his first jump but also his first accident. A skilled pilot of several years' experience with practically all types of Army planes as well as with commercial craft, he had a total of 6864 pilot hours to his credit, including 436 hours on transport planes.

Sgt. Price was returning to San Antonio Air Depot from Burksdale Field, La., in a Bellanca transport plane with two engines as cargo. There were no passengers. While flying over the heavily wooded country of East Texas, and after passing under a small line squall near Grapeland, Texas, and crossing the Trinity River at about 100 feet, he was regaining the necessary flying altitude for that region and had reached some 500 feet, when the motor cut out. He attempted to bring the plane down but, finding this impossible, with its rapid loss of altitude, was forced to jump, after some exceedingly strenuous and hair-raising efforts in getting clear of the craft, at a height estimated by him, and also said to have been estimated by witnesses, of about 100 feet. He landed somewhat on his left side, sustaining sundry bruises, lacerations and a sprained ankle. The fact that he landed in soft, loose sand - soil no doubt saved him from more serious injuries.

The pilot had the unusual experience of landing first with his parachute before the plane itself came down. He said everything happened so fast that he didn't have time to experience any particular emotion or sensation except that of terrific speed, but immediately on landing looked toward the falling plane and thought what a pity it was that such a splendid ship was going to crash.

Forced to "bail out" of a Pursuit plane while flying over unfavorable terrain when the engine failed to take on switching over to the main tank, Flying Cadet F.R. Cook stated that he was impressed by the authority of the chute as it opened, he being only 300 feet above the ground. He was knocked unconscious on landing, had no recollection of the manner in which he hit, and after he came to "suffered from a bad case of jitters for a while." Immediately on coming to he could not remember having jumped at all.

During the course of acrobatic flying in Hawaii, the plane piloted by 2nd Lieut. Donald S. Campbell went into an outside spin from the top of a loop. His efforts to regain normal flight proved in vain, as the plane would not answer to the controls either with the throttle open or closed. Unbuckling his safety belt, he was immediately thrown clear of the plane. He stated he had no doubt that the parachute would function, but nevertheless had a feeling of satisfaction when he felt the jerk of the opened parachute. The chances are good that all the 705 Caterpillars felt the same way when they went through

their initiation into the Club.

Second Lieut. John B. Ackerman, student at the Advanced Flying School, Kelly Field, returning from a night flight, was forced to make a parachute jump, 12 miles southwest of San Antonio, when motor trouble developed. He released a flare as he made preparations to jump, whereupon the motor cut back in. Several moments later the engine cut out again, and when he released another flare the engine immediately cut in once more. After climbing from 2500 feet to 3,000 feet, the engine cut out for the third time - in earnest. The gasoline gauge indicated that he had almost 30 gallons of fuel, but switching from auxiliary to main tank several times brought no results. By that time he was at an altitude of 1500 feet and he could see that he would be unable to make the field. After he jumped he stated he experienced no sense of falling. The jerk caused by the opening of the parachute caused him to lose both the ripcord and the flashlight he was holding. He landed in a small bush which checked the force of his fall.

Sergeant William C. McDonald, a member of the famous acrobatic team, termed "The Men on the Flying Trapeze," was initiated into the Caterpillar Club near Ashland, Ky., while flying in an airplane which the U.S. Marine Corps had assigned to the Air Corps Tactical School at Maxwell Field. Fate decreed that the engine should cut out while Sgt. McDonald was flying over terrain where a forced landing would be decidedly unwholesome. He had no recourse other than to resort to his parachute, and dived headfirst from the left side of the cockpit at an altitude of about 500 feet. Clear of the plane, he jerked the rip cord. "The fact that the chute had opened," Sgt. McDonald stated, "was a very pleasant realization." Upon touching terra firma, he was immediately whisked off his feet and the chute proceeded to drag him along the ground until he was able successfully to tackle a cement mail box post.

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CHANGES IN ASSIGNMENT OF OFFICERS CARRYING TEMPORARY INCREASED RANK.

Captain Edward H. Underhill from Engineer Officer, 81st Service Squadron, to duty as Intelligence and Operations Officer, 40th Attack Sq.

Capt. Otto P. Weyland, from Secretary, A.C. Advanced Flying School, to duty as Intelligence and Operations Officer, 9th Observation Sqdn.

Capt. James B. Burwell from duty as Intelligence and Operations Officer, 39th Obs. Sqdn., to duty as Secretary, A.C. Advanced Flying School.

Capt. John T. Sprague from 40th Bombardment Sqdn. to Flight Commander, 20th Bomb. Sqdn., Langley Field, Va.

Capt. Robert H. Kelly from 12th Obs. Sqdn., Brooks Field, to duty as Intelligence and Operations Officer, 88th Obs. Squadron.

Capt. Harold M. McClelland assigned as C.O., 19th Bomb. Group, effective April 20, 1935.

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FLYING BLIND IN A DUST STORM

Flying blind over mountains at 20,000 feet in a dust storm, in complete darkness, with static playing pranks with radio beacon signals and his fuel supply running low. Private V.V. Poupitch, Air Corps enlisted pilot, stationed at Brooks Field, Texas, refused to desert his ship and succeeded in landing without injury to himself and passenger in the mountains in Chihuahua, Mexico, by spiralling around the line of sparks of two flares, one of which he released at about 17,000 feet and the other at about 9,000 feet, the dust preventing the flares burning at their usual intensity.

Private Poupitch, accompanied by Corp. M.L. Smith, left Brooks Field on an approved airways cross-country flight to Fort Worth, Tex.; Oklahoma City, Okla.; Amarillo, Texas; Albuquerque, N.M.; Winslow, Kingman, Aztec and Tucson, Arizona; El Paso and Midland, Texas, and return to Brooks Field. He reached Tucson the same day and left the following afternoon at 4:20 p.m., for El Paso, setting the compass course to 90 degrees to allow for a very strong north wind. The next check point before darkness was about 20 miles east of Rodeo, Ariz., at about 5:20 p.m. Flying then at 10,000 feet, darkness and a dust storm enveloped him.

"When I left Tucson," Private Poupitch stated, "I had four hours' fuel. As the journey from Tucson to El Paso was only a two-hour flight with an O-43, I had two hours' fuel as a safe margin. In view of former weather training and receiving suitable weather reports by radio at El Paso, having sufficient fuel and receiving the oncourse signal, and fully equipped for night flying, I saw no need to turn back to Tucson or to try and land at the first available place. As I approached El Paso, the weather reports by radio changed from four miles' visibility to two miles' visibility, and extreme static which at times completely cut out the El Paso radio beacon. This I later found out to be caused by local atmospheric conditions and charged dust.

After nearly two hours had elapsed from the time of take-off at Tucson, I estimated that my position was near El Paso, and began to concentrate on the cone of silence. I began to receive a slightly off-course signal, and turned to correct for it, climbing at the same time to avoid hitting any mountains, and also to have a better working area with the cone of silence, in view of the flying conditions.

At 20,000 feet I was also blind and began to fly by instruments at 6:00 p.m. The off-course signal began to predominate; and it took some time before I hit the oncourse signal again. But then the signal began to weaken, and after a reasonable length of time, I was sure that I was going away from the station; so I turned 180° and started back. I received the oncourse signal again; the volume increased, even though I turned it down on the receiver, indicating that I was going toward my station. When I began to turn down the volume, the static increased. I had been receiving static on the

receiver and upon turning down the volume, this static increased to the extent that it prevented my hearing the radio beacon. Even though I maintained my course in both directions, I could not find the cone of silence. Then I began to fly the other legs to ascertain if I could hit the cone of silence at an estimated intersection. Judging by time, the same thing began to take place as on the east and west legs: extreme static, interference with radio receipt, all of which prevented me from finding the silence cone. I then began to circle around to where I thought the cone might be, and gradually tightened the circle, but failed to find it. I began to check my beacon map again to orient myself in the quadrants when I could receive the signal; and when I locked up, I had unconsciously stalled the ship and was in a spin. I recovered at 17,000 feet and saw my fuel gauge read slightly above zero, and that the artificial horizon was out of sight.

I conveyed to the mechanic, Corp. M.L. Smith, that I had no idea as to where we were, but that we had 17,000 feet which was sufficient to safely avoid possible mountains in the event that a parachute jump became necessary. When I looked back at Corp. Smith, he already had the rear cockpit open, and one foot over the side of the ship. He inquired as to whether I was going to jump, and upon my reply that I was not, but was going to make an effort to save the ship, he climbed back into the ship and, despite my advice to jump, he stated he would stay with me regardless of consequences.

I dropped a flare and it showed very little on account of the dust, but exhibited merely a blaze of light in the immediate vicinity of the flare. I was hoping that it would reveal any possible mountain range or peak below us. The Sperry horizon failed to function after the spin, and when I saw the flare burning, it emitted a stream of sparks which formed a vertical line and I could then establish a horizon. It indicated to me that so long as the sparks were descending vertically I had that much altitude and that no intervening obstructions existed below.

I spiralled tightly around this stream of sparks to avoid any other obstacles, mountains, etc., which I would be unable to detect on account of the visibility, and quickly lost my altitude. When the flare burned out, I released a second flare at about 9,000 feet, when I again succeeded in establishing a horizon by the line of sparks, and again descended rapidly.

I had both of the landing lights on when I suddenly approached the ground and estimated that I was about 100 feet above it, in a dive and a speed bank. The motor began to sputter when I leveled off and prepared to land in that exact spot. I struck the ground once, wheels first. The flare which had been above us, went out and I bounced. I tried to 'jockey' the ship and ease it down in the darkness, since I was wholly unaware, of course, of what I might strike. I landed and rolled for some distance, when I could feel the ship being stopped rapidly. Suddenly, it nosed over. The tail came right down and Corporal Smith and I climbed out."

NOTES FROM AIR CORPS FIELDS

Hamilton Field, Calif., April 30th.

In a beautification drive which will make Hamilton Field the garden spot of Marin County, the post nurseries are issuing to the military personnel 15,000 chrysanthemums, 7500 assorted Iris, 5,000 Canna, 10,000 Gazinia, 2,500 Geranium and 7,500 Messenlerganthemum. Lieut. Robert E. Cron, Asst. Constr. Quartermaster, has charge of the issue of these flowers.

Hamilton Field personnel have an opportunity to study in technical research work. A technical library has been fitted up in a room on the ground floor of post headquarters.

Major-General Paul B. Malone, 9th Corps Area Commander, inspected the personnel and buildings of the field on April 6th and expressed himself as being well satisfied with the station. Thirteen Martin Bombers passed his reviewing station in an aerial review.

On the afternoon of Army Day, Lieut.-Colonel Clarence L. Tinker led the 7th Bombardment Group in bombing maneuvers over Crissy Field. An attack by Pursuit planes was beaten off as delighted spectators gasped.

Seven out of nine Reserve officers whose term of active duty expired secured a continuation of their tours for two months, effective April 15th, viz: 2nd Lieuts. Noble O. Sprunger, Benton R. Baldwin, Joseph P. Bohl, Orvis M. Nelson, Duncan J. Powers, James E. Roberts and Nathan F. Searles. Lieuts. Henry L. Celik and Marvin J. Griggs became private citizens on April 16th.

Lieut. Frederick L. Anderson, transferred here from Crissy Field, took up his duties as Police and Prison Officer and Provost and Fire Marshal.

Lieut.-Col. Glenn I. Jones, Medical Corps, who is touring overland by automobile from Washington, D.C., to Hamilton Field, will take up his duties as Post Surgeon upon his arrival here.

Sixty-six motor vehicles total the land mobility of the 7th Bombardment Group at this field. Of the latest type, these vehicles could speed over 70 miles an hour if they were not throttled down. The classification shows three Columbia tankers of 1,500 gallons each, a Coleman tanker of 1200 gallons; 13 motorcycles; 12 Chevrolet reconnaissance trucks; 9 Federal; 18 Dodge, 1½-ton; 7 Dodge, 5-ton; and 3 Dodge Panel Delivery trucks. The guards who use motorcycles on their beats no longer have to pound the pavements in the night.

Flying Cadet Verne A. McDermont, stationed at this field, recently received his commission as 2nd Lieut., Air Reserve.

Three enlisted men at this station received

the Yangtze Medal for participation in the Shanghai Expedition, February-July, 1932, viz: Pvts. Harold H. Harris and Wm. S. Bradley, 70th Service Squadron, and Orville E. Vandemark, Quartermaster Detachment.

A danger zone was marked out on the waters of San Pablo Bay, east of Hamilton Field, because of machine gun firing from planes at targets along the seawall.

Lieut. W.R. Agee was ordered to Rockwell Field on April 5th to pursue a three months' course in Instrument Flying and Aerial Navigation. Flying Cadet R.C. Streater was transferred to Selfridge Field, Mich. March 31st.

Brooks Field, San Antonio, Texas, April 30.

Lieut.-Col. E. L. Hoffman, Commanding Officer, is scheduled to leave about May 15th for Rapid City, South Dakota, to make parachute installations on the Stratosphere Balloon which is to make its ascent from that point. Colonel Hoffman is considered one of the foremost authorities on parachutes today. He received the Collier Trophy for his invention of a triangular type parachute which gives a slower rate of descent and, when not in use, occupies a smaller space than the circular type parachute.

An inspection was made of Brooks Field buildings, personnel and equipment by Assistant Secretary of War Woodring on April 15th, this constituting one of the series of inspections made by him covering most of the military flying fields in the country. On landing at Brooks Field, Mr. Woodring was met by Lieut.-Col. Hoffman and his staff and, accompanied by them, made a complete inspection of enlisted personnel and pilots who were with their planes in field inspection order. Following the inspection, all planes participated in an aerial review, after which all motor transport vehicles passed in review.

Philippine Air Depot, Nichols Field, P.I.

During March, the engineering section overhauled one B-3A airplane, one R1340C, one SRI340D, four R1690B engines and sent five engines to storage awaiting block test.

Major John G. Colgan left March 23rd for two months' leave in China and Japan. Captain Albert B. Pitts is now in command.

Upon returning from detached service in Baguio, Captain Alfred L. Jewett assumed the duties of Assistant Depot Supply Officer.

Capt. Charles W. O'Connor left April 1st on 20 days' detached service at Baguio.

Lieut. Heubern P. Dellinger, who reported for duty, was detailed as Chief Inspector.

Advanced Flying School, Kelly Field, Texas.

Hon. Harry H. Woodring, Assistant Secretary of War, made an inspection of Kelly Field on April 15th. The airplanes were lined up in their customary position for student training by sections. Instructors and students were first inspected on the ground in front of the airplanes to which they were assigned. Following this, the Assistant Secretary witnessed the take-off and routine training of students. He expressed satisfaction with the Advanced Flying School before leaving us for Burksdale Field.

Such visits always awaken in the minds of those stationed at Kelly Field a new hope that some day this post will be rebuilt as have most other Air Corps stations in the United States.

According to a press dispatch, 2nd Lieut. Jephtha Wesley Fator, Air Reserve, age 29, was killed in an airplane accident near Bogota, Colombia, on April 15th. No details of the accident are available at this time. Lt. Fator had two brothers, also associated with the Air Corps. Lieut. Lilburn D. Fator is now on duty in the Philippine Islands, and his brother, Charles D., was retired from the Air Corps and now lives in San Antonio, Texas.

Clark Field, Pampanga, P.I., April 6th.

Major G.E. Brower, Commanding Officer, was a member of a flight that made an aerial survey of the northernmost islands of the Philippine Archipelago, piloting Colonel Dossier, Governor of the Mountain Provinces. This necessitated more than four hours over-water flying in the rough Balintang Channel, and the Amphibian escort was most welcome. This completes Major Brower's coverage of the Archipelago, as he has flown over Y'ami Island (in sight of Fornosa), over Sitar'kai (the southernmost point in sight of Borneo), and from the eastern coast of Mindanao to Puerto Princesa in Palawan. The most noteworthy feature of the wind-swept northern islands was the universal stone construction of the dwellings, very similar to the Korean type. Two sites for development into landing fields were located.

The Squadron (3rd Pursuit) as a whole is well up on the Training Directive. However, the shortage of equipment necessary for Instrument Flying (having only one plane so equipped) will probably cause a little difficulty in completing that phase.

The post baseball league is coming along fine, the Air Corps now holding down second place. We expect to bring home the cup when the season ends.

Mitchel Field, L.I., New York, May 4th.

As of March 1st, under the organization of the HQ Air Force, the 61st Service Squadron, Air Corps, experienced considerable changes in personnel. Staff Sergeants Goulla, Highley, Kramberg, Marley, Pollack and Yonconish, Sgts.

Courtney, Leonard, Mannion and Roberts, Corp. Florack, six Privates, 1st Class, and 39 Privates were transferred from this organization. The old-timer among these men is Staff Sgt. Goulla, who served eight years with this organization.

We received by transfer Master Sgt. Starling, Staff Sgt. Hunt, Sgt. Moore, 19 Privates, 1st Class, and 50 Privates.

The officers and men of the 61st extend good luck to our former members and a welcome to our new ones.

Capt. Miller returned from leave recently and assumed command of the organization.

Mitchel Field's basketball team completed a most successful season recently by winning for the third consecutive year the Harbor Service League championship. This League is composed of seven teams, one Navy, one Marine and five Army. These teams played two games with each other during the season. At the close of the season games were played with other service teams, the only loss being to Bolling Field by one point. The personnel of the team consisted of Lieuts. D.W. Smith, C.E. Flaherty, F.H. Miller, Sgt. Wilson, Corporals. Seberle, Rees, Head, and Pvts. Unger, Hartwig, Lappin, Aertgerts and Harmon.

Fort Sill, Okla., May 3rd.

The 1st Balloon Squadron expects to receive in the near future a 50,000 cubic ft. supply of Helium gas which will be used to inflate a Type C-3 Observation Balloon for experimental purposes.

On Army Day, April 6th, the personnel of Post Field entertained approximately 2500 visitors who passed through the Air Corps hangars and viewed the various types of equipment exhibited for their benefit. The hangars were open for public inspection from 12:00 noon to 5:00 p.m.

Most of April was spent in policing the entire Post Field area, and now that this is over the old place doesn't look the same.

The Air Corps basketball team made a creditable showing in the Post League during the past season. The baseball team recently defeated the Medical Detachment, 13 to 2.

Master Sgt. Mansfield, who has been with the 1st Balloon Squadron since its arrival at Fort Sill in June, 1929, sailed for Panama to replace Master Sgt. Ralph J. Rumpel, who is now with the Squadron. We all join in wishing Sgt. Mansfield and family a pleasant voyage and in welcoming Sgt. Rumpel to this outfit.

Staff Sgt. Sossen was detailed as Squadron Supply Sergeant, and Tech. Sgt. Stimmel, after two years S.D. with Finance and Q.M.C., has taken over the Sgt. Major's duties for Air Corps troops.

On April 2nd, Major-General Simonds, Deputy Chief of Staff, and party, with Captain Hez McClellan, pilot, visited Fort Sill.

On April 12th, Hon. Harry H. Woodring, Asst. Secretary of War, with Lieut. Townsend Griffis as pilot, arrived from Amarillo, Texas. The 1st Field Artillery Band and Color Escort from

the 3rd Battalion, 29th Infantry, were in formation on the concrete apron in front of the hangar to render the customary honors. One battery of 75 mm. guns, in position just west of the landing field, fired the salute of 17 guns upon arrival and departure of the Assistant Secretary.

A series of communications tests between an airplane, equipped with a GM 202 Transmitter and BCAA 179 Receiver, and the new SCR 179 Ground Set, have been carried out with excellent results. Voice reception was exceptionally good.

Air Corps troops entered a baseball team in the Staff Troops Baseball League. After two weeks's practice, the team appears to be a likely contender for the championship.

Both O-19E planes of Flight 'E' are now equipped with hoods for instrument flying.

Wheeler Field, T.H., April 18th.

The 26th Attack Squadron completed phase three of the Chemical Warfare Training. The Squadron has drilled and carried on routine hangar duty while wearing gas masks. The Squadron is equipped with 8 A-3 airplanes, which are used for flying training of the 18 pilots assigned and attached; one airplane observer; one flight surgeon; instrument flying for 56 pilots of the 18th Pursuit Group; and flying time for enlisted men from all squadrons in this Group.

The 18th Pursuit Group began its annual gunnery work at the Wing Gunnery camp at Waimanalo on April 15th. The Squadrons of the Group go to camp this year and operate as detached squadrons on the following schedule: April 15th, 19th Pursuit; April 29th, 6th Pursuit; May 13th, 26th Attack.

While at Waimanalo, squadrons will fire for record and conduct a few field exercises.

The inter-squadron baseball tournament at Wheeler Field was recently terminated for the 1935 season, and for the second consecutive year the 6th Pursuiters captured the laurels, emerging from the inter-organization competition with an undefeated slate. The 19th Pursuit, runners-up, dropped two games to the 6th Pursuit.

The airmen have a big job facing them defending the championship Army laurels for the entire Division and Department they fought for and held during 1934.

Luke Field, T.H., April 18th.

During the past month, approximately 6 officers and 18 enlisted men, with three to five Observation airplanes of the 4th and 50th Observation Squadrons, under the command of Maj. Lucas V. Beau, Jr., were stationed at Bellows Field, Waimanalo, T.H. Towing targets for the 64th Coast Artillery (A.A.) was the principal line of endeavor.

Continuous formation of clouds over the Koolau Range prevented high altitude bombing by the 72nd Bombardment Squadron the past week. Strong northeast trade winds and the

Koolau Range seem to form a perfect combination for the production of cloud masses.

Having nosed out the 23d Bomb. Sqdn. for the post track championship in February, the 72nd Bomb. Sqdn. again took the measure of the 23rd in the post finals for baseball on April 10th.

On April 4th, Luke Field and the 5th Composite Group were inspected by Major-General Hugh A. Drum, new Department Commander. An impressive aerial review, followed by a demonstration of Bombardment tactics (23d and 72d Bomb. Squadrons) were given in his honor.

Hawaiian Air Depot, Luke Field, T.H.

The Hawaiian Air Depot just completed the assembly of ten B-4A airplanes shipped to the Hawaiian Department following overhaul by the Rockwell Air Depot. Production is meeting requirements, and it is anticipated that not later than July 15th there will be no airplanes in this Department past due for overhaul. This will be the first time in more than three years that the Engineering Section of the Depot has been in such a favorable position insofar as aircraft overhaul is concerned. Another indication of improvement in production in the Engineering Section is that prior to April 30th all airplanes received by the Depot before Jan. 1st were completely overhauled and returned to their organizations for use.

Due to difficulty in securing satisfactory results through the use of enlisted men in aircraft fabric work, authority was requested and obtained for the hiring of civilian aircraft fabric seamstresses. After a short trial it is apparent that this plan, copied from the San Antonio Depot, will be productive in results and will materially speed up the production in the fabric unit of this Depot.

41st Division Aviation, Felts Field, Spokane.

The Washington Department of the American Legion will stage this month its 'First Airplane Round-Up' of memberships as a result of a co-operative program worked out with Adjutant General Maurice Thompson, 41st Division Aviation, and Homer R. Jones, State Legion Commander.

For officers of the Division Aviation, the Round-Up will furnish an opportunity for training in beam and night flying as the two preliminary flights on May 15th to Walla Walla and Pasco, and two similar flights on May 23rd to Yakima and Wenatchee will be over the beam network at night connecting the four points. At each field scores of Legionnaires are scheduled to be present with memberships rounded up in their respective districts.

Details for the flight were worked out by Lieuts. Hillford R. Wallace and Ellsworth C. French. The former is commander of the 116th Photo Section and Chairman of the Legion's State Aviation Committee, while the latter is Commander of the Eighth Legion District. On May 31st, the two officers will make a flight into Western Washington, visiting Vancouver, Kelso, Chehalis, Tacoma, Bellingham, Arlington V-6787, A.C.

and Seattle for the purpose of gathering up final memberships. At Boeing Field, Seattle, State Legion officials will meet the plane and take over all memberships secured.

It is the hope of the Division Aviation that new radio equipment, scheduled to have arrived April 1st, will be available for the annual encampment at Fort Lewis, Wash., beginning June 11th. Major Robin A. Day, Instructor, received word from the New York Army Depot that four SCR AA-185 receiving and transmitting sets are to be shipped soon. They will replace the present SCR-124 type.

Lieut. E.J. Corigan, 116th Obs. Sqdn., just returned from an extended flight which took him to St. Paul, Chicago, Nashville, Los Angeles and Spokane. Other recent flights included Capt. Claude Owen to San Diego and return; Capt. L.C. Sherman to St. Paul; Capt. Wm. Foster and Robert Owen to Boise, Idaho, and Capt. Owen and John Walters to Portland and Seattle.

Major Robin A. Day flew to the Rockwell Air Depot, ferrying an O-38B for overhaul.

Spirits are high with the 41st Division Aviation as a result of the recent inspection made by Major-General Paul B. Malone, 9th Corps Area Commander. The Adjutant General of the Corps Area in an official communication to Adjutant General Maurice Thompson, gave the rating of "Superior" to Police and appearance; "Excellent" to Unit and Individual appearance, readiness for field service, storage and warehousing, "Very Good" to appearance, officers, and "Good" to garage and motor transportation. General Thompson, in his endorsement of this communication to Major Day, wrote: "The ratings accorded your organization by the Corps Commander on the occasion of his recent inspection, indicates a highly commendable degree of efficiency in training and administration."

Barksdale Field, La., May 9th.

A demonstration was given on April 27th for the students of the Command and General Staff School at Fort Leavenworth, Kans., by the 3rd Attack Group. This demonstration included the dropping of live bombs and firing of machine guns at ground targets, as well as a showing of the new type parachute bomb.

All P-12 airplanes now assigned to the 20th Pursuit Group are being held in readiness for immediate delivery on anticipated transfer. They are to be replaced by P-26 type planes. When all units are uniformly equipped, field exercises and maneuvers will be greatly simplified. At present, those squadrons equipped with the P-12's are unable to keep up with the P-26's. All A-8's have been ordered transferred to Langley Field. It is understood that they are to be used as initial equipment for the new Attack Squadron at that station, and undoubtedly represent "stop-gap" equipment.

The P-26 airplanes now on hand are being equipped with flaps by the Boeing factory at

Seattle, Wash. Ten are now at the factory, and three more are being ferried to replace those now ready for delivery.

As soon as an O-19 airplane, equipped with the necessary instruments, is delivered to this station, daily high altitude missions are to be flown for the purpose of obtaining meteorological data for the Weather Bureau.

LIBRARY NOTES

Some of the More Interesting Books and Documents

Recently added to the Air Corps Library

A 10.01, U.S. 2. Statistics of civil aeronautics, 1926-1933, by Great Britain, Air Ministry, 1935, 7p. Extracted from Aeronautics Bulletin No. 1, published by U.S. Department of Commerce.

A 40/70. A Climatological review of the Alaska-Yukon Plateau, by Major Grow, 1935, 13p.

B 63/25. The influence of acceleration upon the human organism, June 1934. Tr. B-8601. 6p. Maneuverability of contemporary Pursuit planes is no longer limited to technical conditions of stability of the airplane but by the accelerations which can be borne by human organism.

D 11.323/3. The Story of Helium, by Gilbert Grosvenor, 1935. 4p.

D 13.49/5. Army Air Corps Radio Blind Landing System adopted as standard by Bureau of Air Commerce, Department of Commerce, 1934. 5p.

D 72.2/2. Airplane Cannon, by Colonel Blumer, April 13, 1935, 14p. Tr. B-8524. Brief history of the use of the cannon on the airplane.

383.1/D28. The Economics of Air Mail Transportation, by P.T. David, 1934, 235p. Underlying causes of the air mail controversy are disclosed in this volume, which gives the history of air mail transportation and the net deficit incurred by the government in connection with the air mail.

629.18/H 32. Aircraft performance testing, by S. Scott Hall and T.H. England, 1933, 206p. Written primarily for the constructor who wishes to put his aircraft through an adequate program of tests on modern lines.

919.9/H 32. The Conquest of the South Pole Antarctic Exploration 1906-1931, by J. Gordon Hayes, 1933, 318p. Record of noble endeavor or hardships bravely borne and of almost incredible adventure.

940.414/G 58. The Russian Army in the World War, by Nikolai Nikolaevich, 1931, 287p. Complete and exhaustive account of the terrible losses suffered by Russia during the war.

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Master Sergeant James A. Lee, Airplane Pilot, on duty with the Air Corps Detachment, Aberdeen Proving Ground, Maryland, accepted appointment as a Warrant Officer, United States Army, on May 10, 1935, and the resulting vacancy in the grade of Master Sergeant, Air Corps, was filled by the promotion of 1st Sgt. George Sproesser, Langley Field, Va., May 10, 1935.



TECHNICAL INFORMATION

ENGINEERING AND NEWS



AIR CORPS MATERIEL DIVISION

Altitude Computation.

An extremely important factor in carrying out instrument flying missions and instrument landings is the standardized use of altimeter equipment. The Air Corps Type C-5 sensitive altimeter is practically in universal use in the Air Corps and, within the last year, has been supplemented by the Type H-1 station altimeter for obtaining the necessary data at the ground for transmittal to airplanes in flight. The data obtained from the station altimeter and the method of using these data has been standardized in two systems, either of which may be used with the same equipment at the will of the pilot. System I is for use in instrument landing and provides an indication of zero altitude when the airplane arrives on the runway. System II is for use on long flights where it is necessary to cross mountain ranges, etc., and permits the altimeter indication to be compared with the elevation recorded on strip maps. For most accurate results, the Type C-1 altitude computer is required. Further detail on the equipment of standardized procedure may be found in Technical Order 05-30-1.

Air Corps Tests of Protective Coatings.

The development and testing of protective coatings for airplanes is one of the functions of Wright Field. The manufacturers of these products have been intensively developing the field of synthetic lacquers and enamels manufactured from resins unknown up to a few years ago. These products are definitely superior with regard to water resistance, durability and working properties, but, as in the case of other materials, many of them are marketed without adequate tests and the consuming public is used as the laboratory. In order to be certain that the Air Corps will not be holding the bag, complete laboratory tests are made at Wright Field laboratories and these are supplemented by exposure tests on racks installed at Chapman Field, Miami, Florida. The installation at Chapman Field consists of a land rack at 45° facing south, and a tidewater rack so located that the test panels are immersed during high tides. The results of the Chapman Field exposure tests indicate that the conditions are more severe than those encountered at any Air Corps station, with the possible exception of France Field. Enamel finishes with a durability of from six to nine months

at Dayton, Ohio, fail within one month on the tidewater rack. Any finish used by an Air Corps Contractor must meet a six-months' test at Chapman Field before it is approved for use.

Automatic Pilot

A representative of the Sperry Gyroscope Co., Brooklyn, N.Y., arrived at the Materiel Division recently to assist with the first automatic pilot installation being made in a Type YB-12 Martin Bomber. He will remain at the Division until the installation is completed and assist with the necessary adjustments during flight tests.

External Energizer.

A self-adjusting external energizer has been submitted for test by the Eclipse Aviation Corporation, East Orange, N.J. The object of this unit is to eliminate the shock loading of the starter gears, and it is designed with a low torque setting, approximately 20 ft./lbs., at the time of engagement with the starter hand crank. This torque is increased in proportion to the speed at which the hand crank is turned, until the clutch reaches a normal setting of approximately 80 ft./lbs. It requires 25 seconds to bring the standard Air Corps starter flywheel from 0 to 12,000 r.p.m. 500 starts have been made with this energizer without the clutch setting being materially changed.

Portable Liquid-Oxygen Generator

The portable liquid-oxygen generator was delivered to Chanute Field, Rantoul, Ill., on March 30th, by Materiel Division personnel, and instructions in its operation and maintenance were given at that station from April 1 to 5. The unit is to remain at Chanute Field indefinitely for instruction purposes.

45-inch Wheels for New B-10 airplanes.

The Martin B-10B airplanes will be equipped with 45-inch streamline wheels which will give considerably better service than the 40-inch wheels on the YB-10 and YB-12 type airplanes. The 45-inch wheel will have larger brakes with scoring resistant drums which should materially decrease the maintenance on this equipment. The larger rolling radius and footprint of the 45-inch wheel and tire should enable the B-10B airplanes to operate on much softer ground than is possible with the YB-10 type.

INSPECTION DIVISION, OFFICE OF CHIEF OF AIR CORPS

The following difficulty was reported in recent Unsatisfactory Report:

Vest, Life Preserver, Type B-2, (yellow).

1. The actuating valve and manifold assembly of Vest, Life Preserver, type B-2 (yellow) failed to inflate vest properly by inflating one cell only. There has been two such failures during tests and one during emergency jump at this station. It is believed the failure of the type B-2 vest used by Lieut. Anderson, December 14, 1934, in San Francisco Bay when only one cell was inflated was caused by the equalizing valve sticking.

2. During test, the failure of the vests to inflate properly was caused by the rubber part of the equalizing valve becoming stuck to the valve seat. Then one valve would open and all the gas enter one cell only.

3. The Type B-2 vest has been in use at this station since September 10, 1934.

4. A monthly check has been made for the past three months of the type B-2 vest by using adaptor (A) attached to the air line (B) which has 120 pounds pressure, by pushing push button (C) momentarily, then note the even distribution of air in gas cells. When valves show failure by this test, CO₂ bottle Specification No. 40227 is used to test as directed in Technical Order 13-1-3, Paragraph 5, which so far has shown same as previous test. Valves that failed have been pried loose, reinstalled and tested satisfactorily afterwards.

5. It is recommended that a more positive distribution valves be used or separate cylinder be installed for each cell.

6. The vests have been repaired as prescribed in Paragraph 4 and put back in service.

7. Photograph of adaptor attached.

8. No previous Unsatisfactory Reports have been submitted by this station on this condition.

Reply to UR:

"In this connection, it is realized that the present standard pneumatic life preserver vests have not proven entirely satisfactory. A constant study has been made of this type of equipment from the time the first experimental design was employed. As a result of this study, there has been developed a new design, Type B-3. It is believed the undesirable features experienced with the old type vest have been corrected in the new type vest. The Type B-3 vest has an individual inflation system for each chamber. Small commercial CO₂ cylinders, now available, will be used instead of the present cylinder. This cylinder is believed to be more fool-proof and less complicated from a standpoint of maintenance and inspection.

There is now a quantity of the new designed equipment on procurement for service test. Several vests will be furnished Crissy Field as soon as they become available. Upon receipt of satisfactory service test reports, the article will be standardized for procure-

ment and issue to the service activities.

It is impracticable to rework the Type B-2 vest. The only solution for the present difficulties is more frequent inspection and tests as prescribed in existing technical orders."

The following difficulty has been reported in recent Unsatisfactory Report:

Airplane Type B-26A:

Strut Assemblies, Cleo, Left and Right, Parts No. 8-538-5 and 8-538-6.

1. Strut Assemblies, Cleo, Left and Right, stuck in the retracted position thereby losing all shock absorbing qualities.

2. The airplane has just returned from an extended cross-country trip on which the Cleo struts were not cleaned. It is believed the defect was caused by dust and dirt accumulating in the cylinder and around the packing nut.

3. Recommend these struts be disassembled and given a thorough inspection.

Note by Station Engineer Officer: Strut assemblies were disassembled and inspected and found to be in good condition. The airplane mechanic who removed these struts from the airplane reported that they were very difficult to remove as they were practically frozen at the top fitting due to the bolts being excessively tight. It is believed that this is accounted for the shocks malfunctioning.

Reply to UR:

Drawings show the bolt and hole tolerances to be satisfactory and since no previous trouble of this nature has been encountered, it is the opinion that the difficulty is either due to an excessively tight fit of the bolt by the manufacturer or to faulty lubrication. It is requested that the bolts in question be relieved a slight amount by dressing the attaching holes in the oleo upper terminal fitting if examination shows this action to be necessary in order to provide for proper functioning.

Airplane Keystone B-3A.

EXTINGUISHER FFM-TYPE (ONE QUART CAPACITY).

This fire extinguisher, mounted on the control column, failed to perform satisfactorily when required for use on smoldering electric wiring back of the instrument board. Pump action failed to provide a stream of sufficient force.

The inspection tag was lost at this time, but it is reasonable to believe that the extinguisher was properly tested as required by Technical Order Cl-1-82 since the tag was installed when past inspections were made.

In order to assure proper functioning of these extinguishers, while in service, it is suggested that several strokes of the handle be made when liquid must be added. It is believed that a test once a year is insufficient.

Airplanes, Type F-26A:

FAULTY DESIGN.

Fairing Installation, Landing Gear, LH

V-6787, A.C.

Fairing Installation, Landing Gear, FH
Parts No. 15-2785 and 15-2785-1.

Numerous cases of cracked and bent cowl formers of the landing gear fairing assembly are noted, especially on airplanes returning from cross-country trips.

Caused by pilots and mechanics using this fairing as a step while starting the airplane, servicing and performing maintenance work.

Recommend the construction of this fairing be redesigned to allow personnel to use same as a step to facilitate maintenance and starting or a step be incorporated with the fairing installation to accomplish the same purpose.

Carburetor Assembly, Type MA-Y8C, A.C. No. 5462816

When the airplane was started the motor loaded up. With motor stopped, working of the wobble pump allowed excessive flow of gasoline through the drain pipe. Upon removal of the carburetor visual inspection showed that the needle valve seat was sheared off, allowing the float to become stuck in a down position.

Parachute Flare, Type M-8.

M-8 parachute flare, part No. AC drawing SK-18158, ignited upon contact with ground when F-12D airplane No. 31-212 ground looped at Spartanburg, S.C., on March 9, 1935.

Flare burned inside container, setting fire to the wing and burning both wings and fabric on fuselage.

These racks were located below the wing at distance of 84" from the center of the fuselage.

Burned flare and rack and flare from opposite wing being forwarded as exhibits under separate cover.

Recommend that flares suspended below the wings on P-12 airplanes be suspended closer to the fuselage.

Reply to UR:

"The recommendation contained in this report to the effect that flares suspended below the wings of Model I-12 airplanes be installed closer to the fuselage cannot be concurred in. The present installation drawing locates the flares on Model P-12 airplanes 84 inches from the center line of the airplane. The locating of the racks closer than this is not feasible, due to the resulting possibility of interference between the flare and tail surfaces of the airplane at time of release."

Slipping Clutch SR-134C-E Engine No. 32-159.

Approximately 40 minutes out of Jacksonville, Fla., this engine began missing and back-firing. The pilot, believing there was water in the gasoline, returned to Daytona Beach, landed, and drained about four gallons of gasoline from the Auxiliary tank. The engine then functioned satisfactorily for approximately 20 minutes out of Daytona Beach, and began missing and back-firing again. He returned to Daytona Beach and remained until a mechanic's services were obtained. The mechanic made a complete inspection and changed the spark plugs. The airplane then proceeded to Municipal Airport at Miami, Fla., where an in-

spection was made by the Engineering Officer from Langley Field, resulting in the belief the blower clutch was slipping, therefore necessitating an engine change. The airplane was then flown from the Municipal Airport to Chapman Field, and the engine was reported to have run satisfactorily except for being slightly rough.

Reply to UR:

The Fairfield Depot reports that during inspection of the subject engine they found that the clutch showed evidence of slipping. Piston No. 2509 installed in No. 1 cylinder was cracked. This permitted some "blowby" which scored the cylinder. The scored cylinder will require regrinding for oversize piston. They also found that the rear propeller hub cone was loose, working on the crankshaft, and had galled the rear cone seat.

The Fairfield Depot is of the opinion that the foregoing conditions would cause a rough engine. The clutch slipping would give the impression of a clogged or dirty gasoline line or strainer. The piston failure is similar to others reported to the Division on the cast type of piston. All pistons procured in the future will be of the forged type. The trouble experienced with galling of the crankshaft may have been due to the improper tightening of the propeller hub retaining nut.

Martin B-10. Romac fuel pump, #10316MA, developed an excessive amount of corrosion around the base, necessitating its removal. The base around the drive shaft was badly corroded and the drain from the packing gland almost closed by corrosion.

Reply to UR:

"The excessive corrosion of the type F-6 fuel pump assembly No. R-1561-D in B-10 airplane was believed due to the greater corrosion tendencies of the magnesium base alloys when in contact with salt charged atmospheres such as prevail along the sea coasts.

Twenty-five type F-6 Romac fuel pump assemblies were fabricated from magnesium alloy to determine whether this light metal might be used for fuel system parts. The castings were treated for resistance against corrosion by a chromate acid process. Pump assemblies with the letters M.A. following the manufacturer's serial number have the bodies and mounting plates of magnesium alloy. The pump assembly referred to in this report is of the light magnesium base alloy. The excessive corrosion appears to have developed due to the lack of adequate corrosion resistant treatment. If reports of similar difficulties are reported, steps will be taken to remove these pump assemblies from service. It is requested that the pump assembly in question be forwarded to this Division marked for the attention of the Field Service Section for examination and further disposition."

Re 34B2948 Glass, photographic lamp diffusing (type 3-2).

Transmits an excessive amount of light thru

the center of the glass where there is a spot, which causes an over exposed spot on each print.

Six each of these glasses were received from the Materiel Division on March 15, 1935.

A thorough test has been made by this organization of the above glass with the B-2 lamp used at various distances and angles from the printer. Also with two of the glasses used simultaneously as suggested in radio-gram, Wright Field, April 2, 1935. Attempts were also made to improve diffusing qualities by the application of ground glass substitute and colored inks. All efforts to date with the above glass proved unsatisfactory.

By boiling Opal glass, and allowing it to cool slowly its heat resisting qualities have been improved to a satisfactory point. A sheet of Opal glass has been giving good results for the past three days.

It is recommended that a more suitable glass, with at least the qualities of Opal glass as regards diffusion, be furnished.

Reply to U.R.:

"It may be necessary to reduce the intensity of the illumination of the type B-2 photographic lamp by cutting out some of the current, which is accomplished by throwing the switches provided for this purpose and which are located on the back of the lamp assembly.

It is also believed that the difficulty referred to can be overcome by using ordinary chalk for spotting the diffusing glass in the center to prevent an excessive amount of light coming thru and reaching the negative.

It will also be necessary to apply this chalk on both sides of the glass circle, that is, on the one side that has the sand blasted surface and on the other side that is sand blasted over the entire surface.

Further comments are requested on the results obtained by complying with the above recommendations."

Tube - Conduit P-26A, Part No. 15-2810-51, 52, 53.

The time necessary to change engines of P-26A airplanes is increased through the failure of conduit tubing, part No. 15-2810-51 (L.H. Solenoid box to R.H. Solenoid box); 15-2810-52 (L.H. Solenoid box to R.H. Magneto); and 15-2810-53 (L.H. Solenoid box to L.H. Magneto). In addition, these tubes are frequently badly bent or broken when it is necessary to work on the gun synchronizer solenoids.

In order that maintenance time may be decreased and the frequent replacing of these parts be obviated, it is recommended that the aluminum tubes be replaced by flexible tubing or by copper braid. Recommend that copper braid soldered to nipples of the same O.D. as the tubing now used be adopted. The copper nipples to be used so that the present box tube clamps may be utilized.

The subject conduit tubes must be moved or removed entirely when changing engines, working on the solenoids and when changing starters.

Reply to U.R.:

"To correct these conditions flexible conduit is being procured to replace certain sections of the rigid conduit. When the flexible conduit becomes available, instructions will be issued to have same installed at overhaul of the airplanes.

As a temporary remedy, request the present tubing, if practicable, at points where failures are occurring be wrapped with thin sheet metal and taped. It is believed that certain of the tubes will give better service if supported so as to eliminate some of the strain on the conduit fitting.

Regarding your recommendation that copper braid soldered to the nipples be used, this is not recommended as it would be practically worthless as a radio shielding."

Support Assembly, Blast Tube, Part No. 21-4328.

Blast tube support assembly removed from P-26A airplane, Air Corps No. 33-120. Blast tube had been installed for about 10:00 at the time of failure. The gun to which the blast tube was assembled did not fire over 20 rounds at the last quarterly test.

Reply to U.R.:

"Other failures of this part have occurred and Drawing 21-4328 has been changed requiring that the threaded portion of the fitting be made from nickel steel. In addition, Technical Order 01-207-8 requires the blast tube to be rigidly attached to the gun barrel in a manner practically the same as recommended in your reports. This Technical Order requires that the blast tube change be made at overhaul of the airplanes. If this change is considered necessary prior to overhaul, request it be made."

Junction Box, Type TW-AD-167.

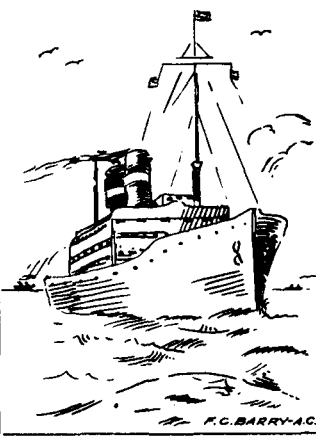
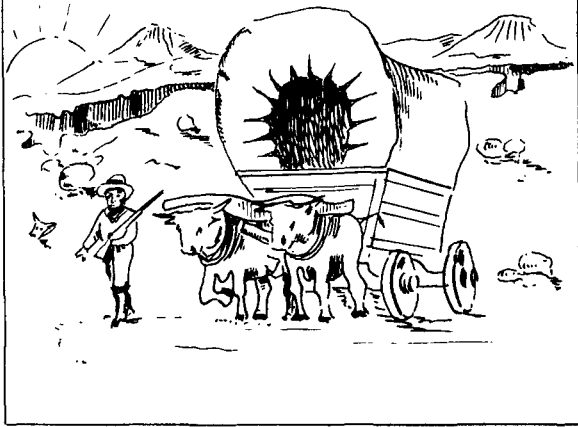
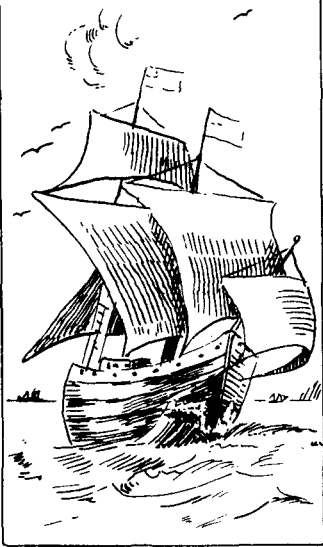
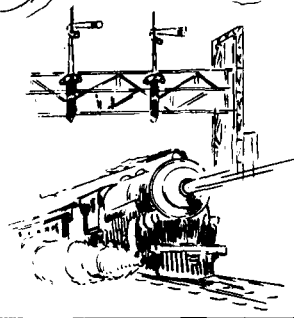
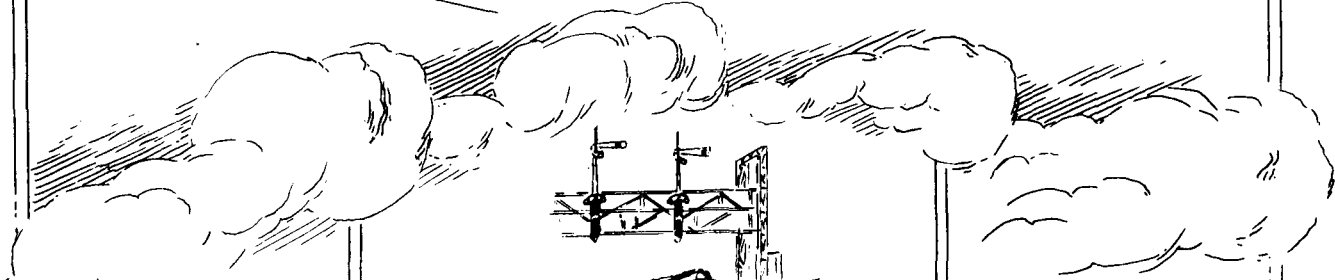
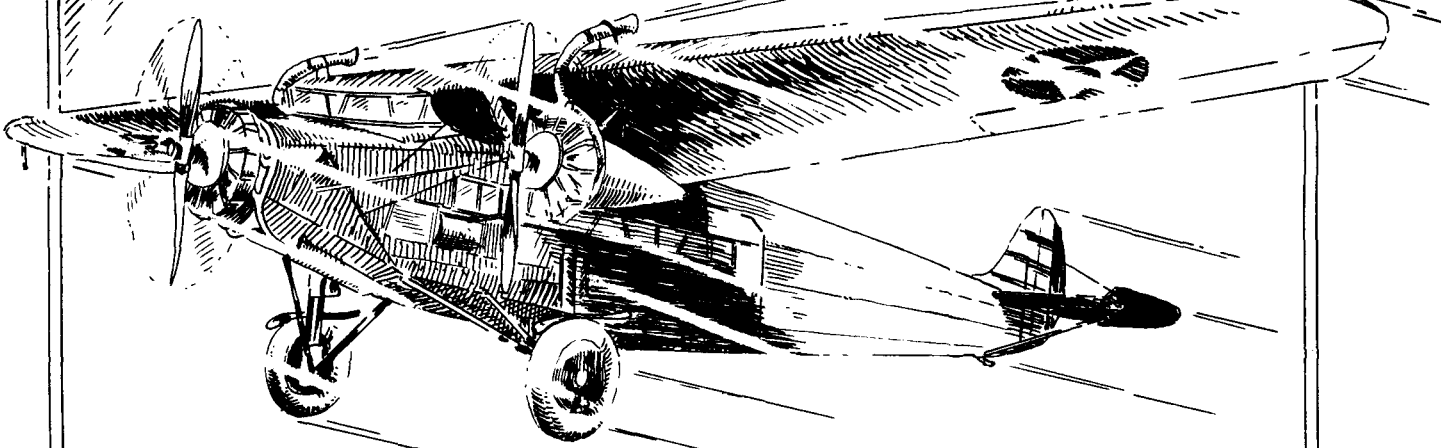
1. Relay, Part No. 225-N, in Junction Box, Type TW-AD-167, for use with type SCR-183 radio sets.

2. The bearing cups on the relay cone, into which the bearing pins of the relay armature fit, have worn to such an extent that the armature sticks in both open and closed positions. The excessive play in the armature has also caused it to come in contact with high voltage connector nearest the armature. This short circuit caused both the relay armature and the high voltage connector to be burned considerably. This specific failure has occurred on two separate junction boxes.

3. This equipment was received new from the Signal Corps and has not been overhauled. This equipment has had approximately 150 hours of service.

4. The cause of the unsatisfactory condition is undetermined.

AIR CORPS



F.C. BARRY A.C.

NEWS LETTER

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Information Division
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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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MY VISIT TO THE AIR CORPS

By Major-General Geo. S. Simonds
Deputy Chief of Staff

Upon assuming my present duties as Deputy Chief of Staff, I determined that my first official visit from General Headquarters to units and establishments of the Army should include elements of the newly organized G.H.Q. Air Force and some of the Air Corps Schools.

In my preliminary talks with General Andrews, he made clear his conviction that immediately upon setting up his Headquarters he should enter upon a determination of and solution of his organizational problems, a stock taking of what he had to do and what he had to do it with, leading up and into the preparation and execution of plans for the administration, equipment and training of this new and vitally important major unit of our field forces of which he had been placed in command.

It appeared to me that his grasp of the fundamentals of the problem was eminently sound. It was realized, of course, that it would take time to make of it a completely going concern, but it was considered extremely important and desirable that the higher command should obtain a first-hand knowledge in the early stages of the steps being initiated for the solution of the problem. This, therefore, was one of the important reasons for the instructions given me in the latter part of March by the Chief of Staff for a tour of inspection - by plane - lasting about two weeks and covering the South Atlantic States and the Gulf States as far west as El Paso.

I was also extremely desirous of learning something more than my very sketchy knowledge of the Air Corps part of our Army school system. In the years of my service, I have had much to do in the development of our Army educational system, but had no first-hand knowledge of the Special Service Schools of the Air Corps. It was therefore with much enthusiasm and anticipation that I welcomed this opportunity.

Although I visited other military establishments and troops, including elements of the 2nd Infantry Division at San Houston, of the First Cavalry Division at Fort Bliss, and various Civilian Conservation Corps installations, it is with my visit to the Air Corps that this contribution to your publication is concerned.

At Langley Field, I was honored with a review of the air units stationed there, inspected the more important installations at the station and, above all, had presented to me most clearly and comprehensively by the officers of the Air Force, Station, and Wing Headquarters, their problems and how they were going about the solution thereof.

My stay at Barksdale Field was short, but in a few hours' time my old friend, Gerald Brant, showed me his post and gave me much information on the Third Wing.

In a half day at Randolph Field, Colonel Harms (whose entry into the service was closely and energetically supervised by me in March, 1908), with his Staff and Faculty, showed me the post and gave me a most interesting and enlightening exposition of the organization and operation of the school. I do not believe it would be possible to give a more understandable and comprehensive presentation of a set-up than was given to me on that day. It was with much regret that other duties prevented me from making more of a visit with Colonel Fickel at Kelly Field, and it is my purpose to do so at the first opportunity.

It was at the Air Corps Tactical School at Maxwell Field that I made a more extended visit than at any place on my trip. To anyone who stops to think, the development of tactics with the machines and weapons which have been progressing and changing so rapidly since the War, as have those pertaining to the Air Corps, must present a difficult and even a baffling problem. Again, I found in command another friend of long standing - another whom I helped to raise - Colonel Curry. This time, however, he was telling me. With much patience, clarity and conviction, he and his assistants set forth their mission, how they were organized for it, and what they were doing to carry it out. He also with evident pride took me on a tour of inspection of this fine new post, which has been largely brought into being during his tour of duty there.

Now for a few brief and general impressions. The General Headquarters Air Force has entered into what frankly must be recognized as an experimental period. The problems are many, new

and complex. I am convinced that General Andrews and his staff are going about this by common sense methods. They are taking up first the things that ought to come first. I know that they are putting out with the very best that is in them to make our Air Force an effective fighting unit, just as our Four Army Commanders are striving to do with their units.

I want to say to you in this rather intimate discourse that those of us in positions of high command and responsibility in the National Defense are firm in our conviction that whatever may be the future developments in machines, weapons, organization and tactics, this step is bound to be one in the right direction. I personally feel that in the stage of development in which we find ourselves at the present moment, a step in any other direction may be compared to stepping off a precipice in order to take the shortest line, whereas by developing a road as we go along, we are more sure of reaching the proper destination.

As to the schools - and now I am on familiar ground - the organization and methods of instruction are in accord with the principles which have made the United States Army educational system the envy of military authorities the world over. The school plants and the new Air Corps posts, as well as the new posts of other arms, are splendid. They represent years of devoted effort on the part of those who have been and are in responsible positions in the War Department, and of those leaders in the other Executive and in the Legislative Departments of the Government who have given heed to the deplorable conditions that existed prior to the new building program. I have no patience with those who may say that such living conditions will make our Army soft. They are, for the officers and soldiers, simply in accord with what are or ought to be American standards of peace time living, and it is to be hoped that proper housing conditions will be extended to the whole Army; also that those in high command are going to be able to give sufficient field training to keep us hard - and I know that if the test of war comes the American soldier will meet it with the same hardihood as always.

One of the happy features of my services in the Army is that now after many years, particularly in various campaigns and in the schools, I have a wide knowledge of and acquaintance with officers - my seniors, my contemporaries and my juniors. Officers of the Air Corps who are now coming to positions of high command and responsibility were trained by me at West Point and elsewhere. I know they would think I am slipping if I did not have a few "skins."

Here they are. In the Air Corps, as well as in other arms, there are some whose enthusiasms run ahead of accomplishments possible for them or anyone else. (As far as I am concerned, I would rather be trying to control and direct enthusiasm than struggling to overcome hidebound inertia.) But let's temper our enthusiasms with realism.

In the Air Corps, as well as in other arms, there are some who magnify difficulties and have a wrong perspective. There are undoubtedly deficiencies in training. My own opinion is that the Air Corps is within itself endeavoring to overcome them with all the means at its disposal. There are undoubtedly some deficiencies in personnel but, even in that, superior quality will go a long way to overcome lack in quantity.

At the present moment, lack of equipment is, in my opinion, the most serious deficiency confronting the Air Corps. That is something that the highest authority must solve along with the other great problems of financing all the pressing problems of government. In the meantime, higher authority has a right to expect of us complete loyalty and honest effort to make the most efficient use of the facilities we have.

I can't wind this up without referring to the great trip I had by plane - pilot, Captain Hez McClellan - mechanics, Technical Sergeant Roy Hooe and Corporal Lewis Krauss. It was probably all in the day's work with them - as it should be - but I just want to say that it's up to all of us to do our day's work as they do.

In case any of the real heads of families who extended me so many delightful hospitalities should read this, I would like them to know that I have made the record in my book of happy memories.

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GENERAL CHANEY ASSUMES NEW DUTIES ✓

Brigadier-General James E. Chaney, Assistant Chief of the Air Corps, reported at Randolph Field on May 17th and assumed command of the Air Corps Training Center. Other than a reception at the Officers' Club and a few private receptions, the arrival of the new Commanding General was heralded only by his appearance at his desk. He requested no ceremony or display of planes to celebrate his taking over command. With Mrs. Chaney he arrived after a motor tour from Washington, where he had been serving in the Office of the Chief of the Air Corps. Enroute, he visited Langley Field, Miami, Fla., Pensacola, Fla., and New Orleans.

General Chaney relieves Colonel Jacob E. Fickel, Commandant of the Advanced Flying School, Kelly Field, who has been in temporary command of the Training Center since the departure for duty in Washington of Lieut.-Colonel Henry B. Claggett, Air Corps.

Close liaison and cooperation with the Sixth Brigade, encamped near Monterey, Calif., with highly successful results, marked the two weeks' field exercises recently conducted by the 91st Observation Squadron, Grissy Field, with the 15th Photo Section attached. The base of operations was at Watsonville Airport, Watsonville, Calif.

During this period, Observation, Attack and Bombardment and towing missions were flown by the Observation pilots and observers. The annual tactical inspection by Major-General Paul B. Malone, Commanding General, 3th Corps Area, was particularly interesting, in that it was conducted in connection with the performance of actual missions with ground troops.

Major Floyd E. Galloway, Commander of the 91st Observation Squadron and Brigade Air Officer, made the summation of "One hundred percent" and was joined by very favorable comment from General Malone and Brigadier-General P. Whitworth, Commanding General of the Sixth Brigade.

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PURSUITERS PARTICIPATE IN SILVER JUBILEE

The First Pursuit Group, Selfridge Field, Mich., under the command of Lt.-Colonel Ralph Royce, departed at 1:30 p.m., May 4th for Brantford, Ontario, where the 19 P-26A airplanes and one C-24 Transport remained until 3:00 p.m., May 6th, for the purpose of participating in the demonstrations held at that place in honor of King Edward of England.

This Good-Will flight was ordered by the War Department at the request of the State Department.

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PURSUIT PLANES FERRIED TO WEST COAST

Twenty officers from Langley Field, Va., ferried P-12C airplanes to March Field, Calif. On the return flight, these pilots ferried P-26 planes to Barksdale and Selfridge Fields and P-12F planes to Langley Field. Those who participated in this round trip transcontinental flight in Pursuit airplanes were Majors Newton Longfellow, C.V. Haynes, Captains E.R. Todd, W.R. Wolfenbarger, R.A. Wilson, R.E. Travis, A.R. Springer, B.J. Peaslee, W.C. Bentley, H.W. Dorr, C.G. Goodrich, A.L. Harvey, T.S. Power, 1st Lieuts. R.A. Grussendorf, B.E. Nelson, S.O. Ross, O.S. Picher, T.C. Darcy, 2nd Lieuts. R.L. Wassell and B.S. Harrell.

On his way to the West Coast, Captain Goodrich was forced down near Mesal, Arizona, by engine failure. His airplane was totally wrecked, but he escaped injury. A March Field airplane ferried him to that station, and he subsequently continued his ferry mission to Barksdale Field.

There is now being conducted at the Air Corps Tactical School at Maxwell Field, Montgomery, Ala., a special two weeks' course on various Air Corps subjects for Corps Area ground officers. The course is under the direction of Lt.-Colonel Harold L. George, Air Corps, and consists of a series of lectures and illustrative problems by the various instructors of the Tactical School. Officers were ordered to Maxwell Field from the various Army posts in the 4th Corps Area for the period of the course.

In addition to the theoretical courses taught, these officers will be given familiarization flights in Bombers and in bi-place planes, and will be permitted to make short night flights and cross-country training flights as passengers.

The following officers at Maxwell Field are serving as instructors for this course:

Lt.-Colonel Harold L. George and Capt. Robert M. Webster - Air Force Course.

Major Odas Moon - Bombardment Course.

Majors Claire L. Chennault and Warren R. Carter - Pursuit Course.

Major Frederick W. Evans, Observation Course.

Major Austin W. Martenstein - Air Logistics Course.

Colonel William N. Porter, C.W.S. - Chemical Warfare Course.

Captain Gordon P. Saville - Air Intelligence Course.

Major Melvin B. Asp - Engineering and Inspection.

1st Lieut. Milton T. Hankins - Meteorological Course.

Officers ordered to attend the course, which started on May 23rd, include:

Lt.-Colonel Cary I. Crockett and 2nd Lieut. George T. Duncan, 22nd Infantry; Major Charles M. Busbee, 36th Field Artillery; 1st Lieut. John M. Works, 1st Observation Battalion; Captains Charles S. Johnson, Levie W. Foy, William M. Hutson and William D. Schas, 8th Infantry; Captains William R. Hamby and George R. McElroy, 6th Cavalry.

The opening exercise for the class was held at 9:00 a.m., May 23rd, with the Commandant of the School, Colonel John F. Curry, as instructor. Each day of the two weeks' course will be filled with lectures and problems from 9:00 a.m. until 3:00 p.m., and students will be afforded the opportunity of securing flying in addition to the regular schedule.

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Captain George W. Goddard, Air Corps, who conducts the Aerial Photographic School at the Air Corps Technical School at Chanute Field, Ill., recently flew to the United States Military Academy, where he spent two days, during the course of which he delivered lectures to the West Point Cadets on the subject of Aerial Photography.

BOMBING TESTS CONDUCTED IN HAWAII

The 18th Composite Wing conducted a test of live demolition bombs at Bellows Field, Waimanalo, on May 3rd last. For some time periodic tests of live bombs from the current Reserve in the Hawaiian Department have been pending. Shortly after the arrival of the new Department Commander, Major-General Hugh A. Drum, Colonel Emmons, Commander of the 18th Composite Wing, conceived a plan of combining this test with the demonstration of Air Corps bombing and attack tactics. This plan proved to be opportune, since General Drum is in the process of completing his tactical inspection of various military organizations in the Hawaiian Department.

A number of difficult situations presented themselves, not the least of which was the location and laying out of targets, both from point of view of the military personnel participating in the demonstration and the spectators. It was finally decided to hold these tests on the Waimanalo Military Reservation. This reservation afforded enough area for dropping bombs and provided also an unusual observation point for spectators, a ridge of hills along the north edge. Since the slopes of these hills are very steep, it was necessary to break trails and in some instances construct steps and hand rails to the observation point which was cleared to accommodate between 300 and 400 persons. Being at an altitude of several hundred feet, this point afforded the spectators a splendid view of the bombing and attack demonstrations.

A Provisional Bombardment Squadron was organized at Luke Field and placed under the command of Major John V. Hart, Air Corps. Other personnel of this Squadron were Captains Reginald Heber, Ford J. Lauer, Lieuts. Emery S. Wetzel, William L. Kennedy, Jack W. Wood, Louis A. Guenther, William L. Travis, Harry G. Montgomery, Jr., Joseph J. Ladd, James W. Gurr, Clifford H. Rees, Charles H. Pottenger, Travis M. Hetherington and John J. Hutchison.

It being the desire of the Wing Commander to conduct bombing from as high an altitude as practicable, a number of Mark XV synchronous bomb sights were procured for this particular project, and for a period of ten days the Provisional Bombardment Squadron carried out extensive bombardment practice between 5,000 and 12,000 feet altitude.

Bombardment targets were arranged to fulfill the requirements of the ordnance test and to provide a series of aiming points, whereby the craters caused by the bombs dropped would be sufficiently separated to enable identification. Three aiming points were established, each consisting of three old bomber wings staked to the ground. The target area was outlined by flags for the benefit of the observers and spectators. An

aiming point for each mission was identified by means of a red flag.

Attack targets were of two types; silhouettes, representing troops and a line of square cloth-covered frames representing a truck train.

Operations were directed from a CP set-up overlocking the entire range. Telephone communication was provided between the CP and Luke Field; CP and Radio Station at Bellows Field and CP and Observation Point. Radio communication was had between the Radio Station at Bellows Field, Luke Field and airplanes in flight.

When airplanes reached their bombing altitude, radio communication was established with Bellows Field on short wave and instructions for bombing were given. Shortly before each phase of demonstration, an announcement was phoned to the Observation Point for the information of the spectators.

Perfect weather favored the entire demonstration. The first mission consisted of dropping four 600-lb. demolition bombs and took place promptly on schedule. All bombs went off with a high order of detonation and made a very impressive display for the beginning of the program. The second mission consisted of dropping six 300-lb. demolition bombs and a high order of accuracy resulted. Next followed a demonstration of attack aviation by the 26th Attack Squadron, Wheeler Field, commanded by Major S.D. Frierson. Aerial machine gunnery against silhouette targets was demonstrated. Just as the last of the 300-lb. bombs was dropped, the Attack took off from Bellows Field, where they had been stationed for the day, and formed very rapidly, disappearing momentarily behind the volcanic peaks to the West. Suddenly they reappeared and dove to the attack on the targets. These attacks were made by flights of three airplanes each, and were repeated by single airplanes, 80% hits being recorded.

The Bombardment again took the air, and one 300-lb. and seven 100-lb. bombs were dropped. This was immediately followed by a demonstration by the 6th Pursuit Squadron, Wheeler Field, commanded by Major Early E.W. Duncan. Aerial machine gunnery and bombing were demonstrated against the silhouette and truck train targets. The remaining missions followed in rapid succession. Two 1100-lb. demolition bombs were dropped and were followed by a salvo bombing demonstration, 12 Bombardment airplanes dropping sixty 100-lb. practice bombs as a unit and repeated by flights of six bombers each.

Attack aviation again took off and laid a five-plane smoke screen, immediately followed by all airplanes of the Provisional Bombardment Squadron passing in review past the observation point.

The highly commendable manner in which the test and demonstration were conducted

may be evidenced by the following radiogram received from the Wing Commander:

"The Department Commander desires me to extend to you and members of your command his extreme appreciation and pleasure at the highly efficient manner in which the bombing tests were conducted at Waimanalo May third. It clearly demonstrates to him the high degree of tactical and technical efficiency of the Eighteenth Wing. To the General's commendatory remarks I desire to add that I experienced the greatest gratification and satisfaction from the manner in which the tests were conducted and the results obtained. They conclusively prove that the Eighteenth Wing is a highly efficient and thorough organization capable of performing any mission which it might be called upon. Emmons."

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FRANCE FIELD AIRMEN COOPERATE WITH THE INFANTRY IN MANEUVERS

From March 31st to April 4th, the Howitzer Platoon, Headquarters Company, 14th Infantry, Fort Davis, Canal Zone, made a march across the Isthmus of Panama at the conclusion of the maneuvers. This march was made without, for the most part, of the benefit of trails or roads through the jungles. The Air Corps assisted in contacting the platoon. There is quoted below an extract from the report of the march:

"2. The assistance of the Air Corps was most valuable. Lieut. Callahan, on April 2, under very difficult conditions located us and established contact with us. This was at the identical spot last year that the 2nd Field Artillery report that the Air Corps could not locate their smoke columns. Whereas Lieut. Callahan picked up our smoke columns and through a small opening in the trees was able to read our panel message. On the following day he gave us our location and thereby facilitated plans for movement.

"3. The Air-Ground Liaison on this march demonstrated its value in this country where conditions are far from ideal and shows that its uses are manifold."

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PORTION OF CADET LAMPL'S AIRPLANE FOUND

While fishing on Lake St. Clair on May 5th, Mr. P.H. Owen, of Tecumseh, Ontario, discovered a badly battered portion of airplane metal. The wreckage, approximately 2½ feet square, was found about 100 yards offshore on a sand bar, in about four inches of water. A particularly strong northeast wind had been blowing for several days, and it is believed the wreckage was blown inshore during this period. The metal was positively identified as the upper skin cov-

ering of the right wing of the P-35 flown by Cadet Lampl at the time of his disappearance.

Flying Cadet Milton A. Lampl mysteriously disappeared during the night of March 10th, while enroute to Selfridge Field from Cleveland, Ohio. Curiously enough, Mr. Owen had reported hearing the airplane flying in his vicinity between 8:15 and 8:40 p.m., on the evening of March 10th and, after a thorough search of the area during the period from March 11th to 23rd, his report was filed with the remainder of the 300 odd reports received as to Cadet Lampl's whereabouts.

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AERIAL GUNNERY PRACTICE IN HAWAII

The 19th Pursuit Squadron, stationed at Wheeler Field, T.H., moved to Bellows Field, Oahu, for its annual field and aerial gunnery exercises on April 15th, with 12 assigned and 3 attached officers and 65 enlisted men. The move from Wheeler Field was greatly expedited this year, due to the replacement of all wartime Liberty (Class B) trucks. The 45-mile trip to Bellows Field was made with 18 trucks, 5 station wagons, 1 ambulance, 1 trailer and 1 motorcycle in about an hour and 45 minutes.

Bellows Field is located in a flat pocket on southeastern Oahu, approximately 3 miles in length, and bounded on the east by the Pacific Ocean. The western length is bounded by a hard surfaced road. The pocket varies in width from approximately 400 yards on its southern extremity to almost a mile on the north.

Two ranges are located on this land, with the landing field separating them. The field is east of the town of Waimanalo, population 1,500. A mile further inland the Koolau Range of mountains sharply rear their pointed peaks some 2,400 feet. With the field as a center, the range forms a semi-circle.

The field itself is rough and slightly rolling. Two runways have been completed at this writing. The rest of the field is unsuited for landing. The new runway, completed a little over a year ago, runs perpendicular to the shore line. Inland to this older macadam runway, a dirt and gravel extension has been built. In adding this extension it was necessary to cut into a knoll that rises on the west of the field. This cut has added materially to the field, since it has extended the hard surfaced runway in excess of 100 yards. The second runway is a diagonal cinder surface running southeast towards the ocean and crossing the macadam runway. Both runways are approximately 1,500 feet in length.

The buildings on the field are all of frame construction, and consist of officers' quarters, mess hall, a new dispensary, V-6796, A.C.

sary, a Post Exchange, Engineering and Operations building, a bath house for enlisted personnel, and a field maintenance shed. The frames for 30 pyramidal tents are also permanent. All buildings are grouped together south of the landing field. Former occupants will be surprised to learn that the screening is so excellent that the mosquito nuisance of the past is practically non-existent.

For recreation there is an excellent beach 300 yards from the building, which extends the entire length of the reservation. The beach has been so popular that many backs have become overly red. After the evening mess there is always a softball game between the officers and enlisted personnel.

The ground targets are located on the south range. Since last year, three new pits have been built, and targets are now placed on pulleys so that as soon as one order has fired the next can start their runs.

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DURABLE FABRIC FOR WING COVERING ✓

A German research worker, who has concentrated on airplane lacquers, has developed a coating on pyroxylin base which is enjoying great popularity among sport and professional constructors of gliders in Germany.

The new coating, called "Special-Flugzeuglack F," is claimed to impart greater strength and adhesion to the fabric with which gliders are covered and prevent all wrinkling, loosening or tearing away of such fabric coverings.

The inventor rejects varnished silk, cotton fabric saturated with oil, rubberized coatings, and starched cloth which have all been used for airplanes and gliders with poor results. All such treatments lower the strength of the fabric, he observes. Cotton cloth, properly painted with the special lacquer, has been found to offer the greatest durability and resistance.

The lacquer "F" is painted with a brush. It comes in two kinds: the primer called "Trankungsmittel F" and the surface coating called "Spannlack F."

These lacquers incorporate admixtures which retard combustion. They are inflammable, but do not burn any faster than untreated cotton fabric.

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A Board of Air Corps officers, consisting of Majors Ralph P. Cousins, William S. Gravely, Frederick W. Evans, Edward M. Powers, Captains R.C.W. Blessley, Franklin O. Carroll, Howard Z. Bogert and 1st Lieut. Patrick W. Timberlake, was appointed by Special Orders of the War Department to meet at Wright Field, Dayton, Ohio, for the purpose of appraising the designs submitted for 3-place Observation airplanes, in response to Circular Proposal 35-405.

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Captain Randolph P. Williams, who will participate in the forthcoming National Geographic Society-Army Air Corps Stratosphere Flight, is one of a limited number of officers in the Air Corps holding four flying ratings - those of Airplane Pilot, Airship Pilot, Airplane Observer and Balloon Observer. He is an officer of high technical attainments, and is particularly well versed in the subject of meteorology.

Captain Williams was born in Baltimore, Md., October 31, 1898. After passing through the elementary schools and attending the Engineer School, Johns Hopkins University, 1915-1916, he received an appointment as cadet at the United States Military Academy, from which institution he graduated in November, 1918, and was commissioned a second lieutenant in the Corps of Engineers.

After attending the Engineer School at Camp Humphreys, Va., from December, 1918, to June, 1920, he was assigned to the 1st U.S. Engineers, and served with the American Forces in Germany until March, 1922. During the course of his service overseas, he commanded Company "B" of that regiment. Following several months' service with the Air Corps, he was assigned to duty with the 2nd U.S. Engineers and served therewith until August, 1924.

From September, 1924, to June, 1925, he was a student at the Engineer School. He then effected a transfer to the Signal Corps, and for several months was on duty in the Meteorological Section, Office of the Chief Signal Officer, Washington.

On September 13, 1935, Captain Williams was detailed to the Air Corps and assigned as student at the Balloon and Airship School at Scott Field, Belleville, Ill. Completing the course at this school in June of the following year, he was rated Balloon Observer and Airship Pilot. He remained at this school in the capacity of instructor until September 1, 1926, when he was assigned to duty with the 12th Airship Company. He was transferred to the Air Corps on October 25, 1927.

After completing a two-year course in Aerology, the first year at the Post Graduate School of the U.S. Naval Academy and the second year at the Massachusetts Institute of Technology, Cambridge, Mass., Captain Williams was assigned as student at the Air Corps Engineering School at Wright Field, Dayton, Ohio, graduating in June, 1932. Immediately thereafter he was assigned as student at the Air Corps Training Center and, after graduating from the Primary Flying School, Randolph Field, and the Advanced Flying School, Kelly Field, he was rated Airplane Pilot and Airplane Observer, June 29, 1933.

From Kelly Field Captain Williams proceeded to Langley Field, Va., where he was on duty as Instructor in advanced aerial navigation. For the past several months he was on temporary duty at Wright Field in connection with the Stratosphere Flight.

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SPECIAL G.H.Q. AIR FORCE ISSUE OF NEWS LETTER

The mid-June News Letter, which it is hoped to have "out on the stands" by June 15th, will be a special issue designated the "General Headquarters Air Force Number."

This new fighting unit in the air branch of our military establishment has now passed the initial quarter of its first year's existence, and while three months constitute all too brief a period in which to form definite conclusions with respect to the general adaptability of this new organization in our scheme of National Defense, nevertheless some ideas have no doubt been formed by this time on the subject. On this assumption, the Commander of the G.H.Q. Air Force and several members of his staff have been invited to contribute articles for this special issue, with the G.H.Q. Air Force as the theme of discussion.

Other Air Corps personnel who may have anything of interest to contribute along the above line are invited to forward same over their signatures to the Information Division, Office of the Chief of the Air Corps, not later than June 10th, next.

DISTINGUISHED FLYING CROSS TO LIEUT. FREDERICK L. ANDERSON

Announcement was recently made by the War Department of the award of the Distinguished Flying Cross to 1st Lieut. Frederick L. Anderson, Jr., Air Corps, the citation accompanying same being as follows:

"FREDERICK L. ANDERSON, Jr., first lieutenant, Air Corps, United States Army. For heroism displayed while participating in an aerial flight on December 14, 1934. An airplane piloted by Lieutenant Anderson while maneuvering over San Francisco, California, caught fire. Directing his mechanic to jump and preparing himself to do likewise, Lieutenant Anderson, observing that he was directly over the city, returned to the cockpit, despite the fact that it was almost completely enveloped in flames, piloted the burning plane away

the city and then jumped from the plane in his parachute into San Francisco Bay. The parachute submerged and he was in grave danger of drowning until rescued by one of the crew of the U. S. S. OKLAHOMA. Had Lieutenant Anderson not displayed an extraordinary amount of courage, coolness and disregard for his own self, the airplane would probably have crashed in a congested part of the city, thus possibly causing considerable loss of life and destruction to private property."

Birthplace: Kingston, New York.
Appointed to U.S. Military Academy from New York.
Present station: Crissy Field, Presidio of San Francisco, California.

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Twenty-five years ago - on April 23, 1910 - two pioneer aviators, Claude Grahame-White, the Englishman, and Louis Paulhan, the Frenchman, both piloting a Henry Farman airplane, struggled valiantly for the prize of £ 10,000, offered by the London DAILY MAIL for a London to Manchester flight. The winner, Paulhan, took roughly 12 hours for the flight.

Today the regular commercial schedule between these two cities calls for a 1½ hour trip, including one stop.

For 15 hours a balloon which ascended near Moscow was borne by strong winds over the Russian countryside and eventually came to earth in the midst of a pack of wolves, which proceeded to attack its two occupants. Luckily they managed to reach the safety of a peasant's home.

Colonel William C. McChord, and Lt.-Colonel Robert LeG. Walsh, Air Corps, the former commanding the 19th Composite Group and the latter the 16th Pursuit Group in the Panama Canal Zone, are under orders to proceed to Washington, D.C. and report to the Chief of the Air Corps for duty. They are relieved from temporary increased rank effective upon the date of their departure from Panama.

Captains Hugh A. Bivins and Bernard J. Tocher, Air Corps, the former Technical Supervisor of the Fairfield Air Depot Control Area, and the latter Technical Supervisor of the Middletown Air Depot Control Area, are under orders to proceed to Maxwell Field, Montgomery, Alabama, for duty as students at the Air Corps Tactical School.

PRACTICAL DEMONSTRATION OF NAVAL TACTICS

Lieut.-Colonel Herbert A. Dargue, Air Corps, Assistant Commandant at the Air Corps Tactical School, Maxwell Field, Ala., has invented a new means of bringing forcibly to the attention of his students in the Naval Operations Course a practical demonstration of Naval tactics, both in the air and on the ground. In the past this course has consisted mainly of lectures alone, but under the personal supervision of Col. Dargue one of the rooms on the second floor of Austin Hall has been secured and converted into a game room, marked off in squares representing approximately one nautical mile in size.

Small models of the principal classes of surface vessels have been manufactured, so that fleet dispositions of all types may be laid out and moves made on the game board actually to simulate a naval battle.

Airplanes have been introduced by means of a small colored cardoacard cut-outs mounted on pins, which may be stuck in the linoleum floor at any desired point to represent a given situation.

Except for the airplanes the entire set-up is to scale and the student viewing the game board from a standing position has a generally correct impression of what he might see from an altitude of from five to ten thousand feet were he flying over the fleet area. About the only condition which it has been impossible to reproduce is the visibility condition, because, in order to make the ship patterns stand out for the normal game that is played on them, they have been painted a brilliant red and a brilliant blue.

It is obvious in the reactions of the students that this visual method of instruction is far more impressive than a series of lectures and diagrams on a blackboard, and it is believed that in the short time available the students obtain a fair idea of the basic principles of Naval Operations.

Lieut.-Colonel Dargue departed for the West Coast recently to serve as Air Corps Observer aboard the U.S.S. SARATOGA in the war games to be held on the Pacific until about June 10th, at which time he will return to Maxwell Field.

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HAWAIIAN AIRMEN WELCOME "CLIPPER SHIP"

The Pan-American "Clipper," huge trans-oceanic air liner, flying from Alameda Airport to Pearl Harbor, Hawaii, arrived on the morning of April 17th, and landed at Pearl Harbor, the large Naval Base, at 9:00 a.m. Swift Army and Navy fighting airplanes formed the official escort into the harbor at the completion of the record-breaking seaplane accomplishment of flying the Pacific from California to

Hawaii in 17 hours and 45 minutes. The 6th Pursuit Squadron of Wheeler Field formed the Army part of the escort. A large gathering was on hand to welcome the air liner, and even a wet morning could not dampen their enthusiasm. Not desirous of disappointing the crowds that were informed the ship would land at 9:00 a.m., the huge liner flew about the island for an hour before making her initial landing. Despite the fact that the harbor was choppy, the landing was perfect. As the liner nosed in toward the seaplane ramp at the Fleet Air Base, the escorting planes from Wheeler Field and the Navy seaplanes from Squadron V-10 dipped in salute and headed for their stations.

Before the return flight was made by the "Clipper," all Army fliers from Luke and Wheeler Fields paid their respects to the gallant Captain Musick and his fine crew and were given an opportunity to inspect the big airplane. Major Early E.W. Duncan, at a formal gathering in honor of the "Clipper" personnel, extended the greetings of the 18th Pursuit Group in an address over one of the local broadcasting stations. The flight was a fine accomplishment by the Pan-American "Clipper" and her worthy personnel.

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SOARING CONTEST AT ELMIRA, N.Y.

The Sixth National Soaring Contest, conducted by the Soaring Society of America, will be held at Elmira, New York, June 29th to July 14th, inclusive.

An elaborate program is being planned, which will include, for the first time, a four-passenger glider and several two-place gliders. It is announced that the sailplane division will be augmented this year by several new craft that have never heretofore participated in a national contest. America's present soaring champion, Richard C. duPont, is expected to fly the "Albatross I." Former soaring champion, Jack O'Meara, has stated that he will enter his "Chanute," and another former champion, Stanley Smith, is expected to demonstrate a new "Bowlus-duPont" utility glider.

Air Corps personnel, conveniently located, and who can do so without interference with their duties, will undoubtedly derive considerable information of value by attendance at the contest.

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To further training in the 7th Bombardment Group, Hamilton Field, Calif., all pilots must fly at least 500 miles in one direction on a radio beam with only three stops enroute. These flights are being undertaken in the B-12 Martin Bombers both during day and night. The average of cross-country flights under this schedule has increased to almost four daily.

GOVERNMENT OFFICIALS VISIT LANGLEY FIELD

Langley Field, on May 11th, was honored by a visit from the Assistant Secretary of War and the House Military Affairs Committee. The party traveled by air from Bolling Field in two airplanes.

In a Condor Transport, piloted by 1st Lieut. Townsend Griffis, Air Corps, Aide to the Assistant Secretary of War, were the Assistant Secretary of War, Hon. Harry H. Woodring; Mr. John J. McSwain, Chairman of the House Military Affairs Committee; Messrs. Samuel L. Collins; Donald H. McLean; Leslie C. Arends; William N. Rogers; Matthew J. Merritt; John M. Costello; Major Richards and Captain Persons.

In a Ford Transport, piloted by Major Phillips, were Messrs. Andrew J. May, Dow W. Harter, Paul J. Kvale, Fraiser, Anderson and Col. Chaffee.

These gentlemen were greeted upon landing at Langley Field by General Andrews and his staff and the Post Commander and his staff. They immediately made an inspection of the post by automobile. The inspecting party were entertained at luncheon by General Andrews at his quarters. At 1:30 p.m., an aerial review was given by the 2nd Wing, G.H.Q. Air Force.

An interesting sidelight was a comparison between the B-6 airplanes with which the Bombardment Group is equipped and a Martin B-10. As the Bombardment Group passed in review, the B-10 flew by just above it. The great difference in speed was noted and commented upon by the inspecting party.

An 13-plane Pursuit squadron, led by Major Rex Stoner, demonstrated the latest Pursuit tactics in a spectacular drill in string and "V" formation.

Following the review, Col. Hugh J. Knerr, Air Corps, Chief of Staff, GHQ Air Force, gave an interesting talk to the members of the inspecting party on the purposes, accomplishments and plans of the GHQ Air Force.

The inspecting party departed for Bolling Field at 3:00 p.m.

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EXTENDED AVIGATION FLIGHT BY BOMBERS

Nine B-6 airplanes of the 96th Bombardment Squadron took off on May 15th from Langley Field, Va., on a squadron extended avigation flight which will include the following Air Corps stations: Pope, Maxwell, Barksdale, Randolph Fields, Fort Sill, and Patterson Field. Participating in this flight are nine officers, nine flying cadets and twenty-three enlisted men, led by Major J. K. McDuffie, the Squadron Commander.

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GERMAN NAVAL OFFICER VISITS KELLY FIELD

The German light cruiser KARLSRUHE, which is on a good will tour and training cruise, recently arrived at the port of Houston, Texas. This vessel came by the way of the Azores and South America to the United States, its first stop in this country being at San Pedro on the Pacific Coast, where it engaged in target practice by permission of the U.S. Navy.

The cruiser, which carries 28 officers, 21 chief petty officers, 120 petty officers, and 321 sailors and cadets, will continue its journey, making several ports of call prior to its return to Kiel in June.

Captain Gunther Sur See Lutjens, Commander of the cruiser, his Adjutant, Lt.-Commander Alfred Schemmel, Lt. William B. Bernreider, and Colonel Vincent Childe, a member of Governor Allred's personal staff, left Houston, Texas, by air on the morning of April 29th. They first flew to Austin, Texas, where they called upon the Governor, and then continued to Kelly Field, where they were met by Colonel Jacob E. Fickel, Commandant of the Advanced Flying School, and Lieut.-Col. Harrison H.C. Richards, Assistant Commandant. The party proceeded to the Aviation Club, where they were later joined by the Mayor of San Antonio, city commissioners, and representatives of civic organizations. After attending a luncheon in their honor in San Antonio, Captain Lutjens and his party returned to Kelly Field to continue their journey by air to Houston to rejoin the cruiser.

Captain Lutjens reports that this is the fourth training cruise for the KARLSRUHE, and it is the third German naval vessel to bear that name. The first of these was sunk off Trinidad during the World War, and the second was sunk after the War as a part of the Allies' peace terms.

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NEW YORK RENDEZVOUS FOR ARMY AIRMEN

Old-timers of the Air Corps who recently visited the St. Moritz, in New York, found an old friend there in the person of Ex-Captain Eduardo Laborde, National Cuban Army. Captain Laborde will be remembered as a student at practically every flying course given by the Air Corps in the old days. He also graduated from the Technical School at Chanute Field.

The recent political upheaval in Cuba resulted in Captain Laborde, who at the time was senior flying officer in the Cuban Air Force, being left out in the reorganization of the Army. He is now connected with the St. Moritz, where he says all old Air Corps friends will find a welcome from him.

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OBITUARIES

During aerial gunnery practice by the 33rd Pursuit Squadron, Langley Field, Va., Flying Cadet G.F. Breck, Jr., while engaged in firing on ground targets, was the victim of a fatal crash. He was given a military funeral at Hampton, Va., being escorted by the enlisted personnel of the Squadron and the officers of the entire 8th Pursuit Group. A blank file formation was also flown over Hampton as his remains left the station, being forwarded to his father, Mr. G.F. Breck, Sr., at Los Angeles, Calif.

Flying Cadet Breck was born at Hot Springs, Ark., November 28, 1910. He attended the University of Southern California for three years and, following his appointment as a Flying Cadet and his graduation from the Primary and Advanced Flying Schools, was assigned to duty at Langley Field, Va., under his Flying Cadet status.

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Flying Cadet Lawrence Thomas Allen, a student in the Observation Section at the Air Corps Advanced Flying School, was killed in an airplane accident on the evening of April 23, 1935, near Orange Grove, Jim Wells County, Texas.

Cadet Allen was on an authorized student navigation flight to Kingsville and Corpus Christi, Texas, at the time of the accident. He left Kelly Field at 7:00 p.m., but failed to check in at either Kingsville or Corpus Christi. His instructors waited long after his gasoline supply must have been exhausted, hoping that he had landed successfully and would be able to report his whereabouts, but no such word was received. It being impracticable to send out a searching party of airplanes during the night, plans were made for the search to begin early the following morning.

A flight of about 35 airplanes, participating in a radio-controlled search, left Kelly Field early in the morning and flew over the areas in which it was considered most likely Cadet Allen might be located. While the search was in progress, word was received from the citizens of Orange Grove that the crash had been located approximately eight miles northeast of that city, and that the pilot had evidently been killed in the accident. The searching planes were recalled, and an ambulance airplane was dispatched to return the body to Kelly Field.

On the following day the remains of Cadet Allen were shipped to his home at McAllen, Texas, in charge of Cadet William Ragsdale, who acted as the escort. The deceased Flying Cadet is survived by his mother, five brothers and four sisters, all of whom live in the Rio Grande Valley.

Cadet Allen made an enviable record through his high school and college, having excelled academically as well as athletically. He was born in Utica, Mo., August 28, 1908. Following his graduation from the Texas College of Arts and Industries, he applied for and received an appointment as a Flying Cadet. Upon completing the course at the Primary Flying School at Randolph Field, he was transferred to Kelly Field on March 1, 1935, to pursue the advanced course.

The loss of such a promising young man is keenly felt, and our deepest sympathy is extended to his family.

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The second week of the maneuvers participated in by the 91st Observation Squadron, Crissy Field, in cooperation with the Sixth Brigade, near Monterey, Calif., was saddened by the loss of two of the most popular and efficient members of the 91st. Second Lieutenant Russell E. Laird, Air Reserve, and Private Bernard F. Rygwalski were drowned when their O-26C airplane was forced down in Monterey Bay by motor failure at 1:50 p.m., April 23rd. Lieut. Laird was flying in a formation of five planes. The formation made a wide turn over the Bay, and at the point farthest from shore his engine apparently threw a connecting rod. He failed to reach the beach by about 150 yards. The plane sank immediately, and both men were drowned in the exceptionally heavy surf while trying to reach the beach, despite all efforts made to rescue them.

Private Rygwalski came from Cleveland, Ohio. He enlisted with the 91st in September, 1933, having three years' previous service. He was a credit to his organization, and his place will be hard to fill.

Lieut. Laird's home was Bakersfield, Calif.; his school - the University of Nevada. He completed the course at the Training Center with the Class of October, 1932, and was assigned to Crissy Field for active duty. This status he retained until last February, when he enlisted in the 91st with a commission in the Regular Army in view. Every member of our organization feels a distinct personal loss in his passing.

Lieut. Harold Gunn, Air Reserve, composed the following verse in Lieut. Laird's memory, which is an expression of the sentiments of Crissy Field:

IN MEMORY OF RUSSELL E. LAIRD

We miss you, Russ, we're sorry you went away,
But we know that the flight to the rest
of the great C.O.,
Is one we all must make some day.
We do not weep, but reverently
For one brief moment, we "snap to" and
V-6796, A.C.

salute your memory.
And as in the haze of that far distance
we can see
Your cheerful, dauntless courage, we
find the strength to say,
"Happier landings, Russ,"
And then with saddened hearts we once
more carry on.

----oCo----

FIRST PURSUITERS VISIT BENTON HARBOR

A composite squadron of 15 P-26A's, 2 BT-23's and one O-19, of the First Pursuit Group, Selfridge Field, Mich., visited Benton Harbor, Mich., on May 10th, during the course of a tactical problem. Major McCormick, Group Operations Officer, led the P-26 Squadron, and Lieut.-Colonel Royce led the Observation element. The Group landed at the Kalamazoo Airport, and then flew over the Cherry Blossom Festival at Benton Harbor. The pilots and men remained at Kalamazoo until 1:00 p.m., May 12th, when the entire Group returned to Selfridge Field, working a tactical problem enroute.

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PLENTY OF TROUT AT RAPID CITY, S.D.

Captain John H. McCormick, Air Corps, returned to Langley Field, Va., from a personnel ferry mission to Rapid City, South Dakota. He reports that at Rapid City the stratosphere personnel have a stream with a plentiful supply of trout. In fact, according to his report, the stream is so full of fish that if they do not bite on your fly you can reach in and pull them out with your hands. The trout are kept in a certain portion of the stream by wire netting.

There is a rumor that Captain R.P. Williams was seen fishing, accompanied by three helpers; a man to remove the fish from his line and put them in his basket, a photographer, and a mathematician for weights, measurements and tabulations, all four being extremely busy.

----oCo----

CANAL ZONE PILOTS VISIT COSTA RICA

The first of what is expected to be a series of cross-country training flights into Central American countries from the Canal Zone, was completed on May 2nd by the return of the Headquarters Flight of the 19th Composite Wing to Albrook Field from San Jose, Costa Rica.

The flight consisted of three P-12E's, piloted by Colonel W.C. McChord, Wing Commander; Lieut.-Colonel Charles T. Phillips, Wing Operations and Captain James H. Wallace, Assistant Operations Officer; and two O-19's, piloted by Captains Guy B. Henderson and Hansford W. Pennington. Lieut.-Colonel Fred T. Cruse, General Staff, a former attache of the American Legation at San Jose, and

Corporal John W. Jaeschke were the passengers in the O-19's.

The flight departed from Albrook Field on the morning of April 30th, and after a stop for gas at David, Republic de Panama, arrived at the Costa Rican Capital early in the afternoon of the same day. At the Sabannas landing field the flight was welcomed by Major A.H. Harris, the American Attache; Sr. Mario Jimenez, the Director of Aviation for the Costa Rican Government, and Colonel Francisco Bonilla, the Chief of Police, San Jose, who furnished guards for the airplanes and was careful to see that the personnel of the flight were afforded every possible courtesy during their stay.

No difficulties were experienced in servicing the airplanes, as two local aviation companies, in addition to the Pan-American Airways, are doing a flourishing business at San Jose. The Pan-American Airways operates from its own field some 12 kilometers from the City, while the two local companies operate from the municipally owned Sabannas field. Due to a lack of surface transportation facilities to a number of important plantations and mines in the Republic, the local companies have carried some varied and interesting freight loads. At the time of the arrival of the flight, a local pilot was taking off, carrying an ox-cart for delivery to one of the coffee plantations.

The officers of the flight were the guests at a series of entertainments and were afforded every opportunity to take in the various interesting sights in the Costa Rican Capital.

The cool nights of San Jose, which is approximately 4,000 feet above sea level, afforded a very welcome relief for all the personnel of the flight from the Canal Zone weather.

When the flight departed from San Jose, Colonel McChord decided to lead the P-12E's over the famous Irazu Volcano. The crater of this mountain is over 11,500 feet, and it proved to be a most interesting and awe-inspiring sight. The members of the flight enjoyed a rare privilege when they looked directly into the crater, for usually at all seasons of the year the top of the mountain is covered by heavy clouds.

From Irazu the flight proceeded down the valley of the Rio Grande to Puenta Arenas and inspected the landing field there before heading for David. Despite the fact that the "dry season" has theoretically ended, the weather was not difficult at any stage of the flight.

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MEMORY OF COLONEL HICKAM PERPETUATED

Under General Orders of the War Department, the flying field comprising Tracts "A" and "B," Hawaiian Department, is designated as "Hickam Field" in honor of Lt.-Col. Horace W. Hickam, killed in an airplane accident on November 5, 1934.

IMPROVEMENT OF CIVILIAN AIRPORTS

THERE has been recent discussion in Washington as to the allocation of funds of the last "Relief Appropriation" for the purpose of improving existing airports throughout the Continental United States, or constructing new ones where needed. It has been proposed that such funds as are allocated will be given to the various State authorities to carry out the projects within the respective States. The War Department is naturally very much interested in this proposal from the standpoint of National Defense. The better the airport accommodations throughout the Continental United States, the greater will be the facility with which GHQ Air Force units can be concentrated in any part thereof, and the more effective will be the operations in such construction areas.

Since October of 1934, there has been a War Department Board of Officers engaged in the study of airdrome requirements of the GHQ Air Force in the continental United States. It is understood that these studies indicate a lack of airports in certain strategic areas and also the desirability of improving some of the airports along the usually traveled airways.

There have been furnished to all Air Corps stations and commands where airplanes are available questionnaire forms to be filled in for certain of the airports in the vicinity of each station with a request that the information needed to complete same be obtained by reconnaissances made as a part of the regular training schedule.

In the event that the above proposal to furnish Federal Relief funds to the various States for the improvement of airports goes through, it will be highly desirable to have the completed questionnaires available in the Office of the Chief of the Air Corps. These questionnaires can then be used as the basis for recommendations by the War Department to the various State authorities covering the improvement of airports of special importance in the scheme of national defense.

Fortunately, the requirements of national defense coincide with the present development of airports, due to the fact that the centers of population and industrial activity to be protected are naturally the locations of the principal existing airports. In a few areas, other strategic requirements indicate the need for securing more airports than have been developed to date. These needs have been indicated to the various Air Corps station commanders by the list of airports for which questionnaires were furnished in March of this year. These commanding officers can do much to influence the improvement of present airport facilities in those areas where they are now lacking.

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Lieut.-Col. Ernest Clark, commanding the 18th Pursuit Group, and Major James V. Hart, the 72nd Bomb. Squadron in the Hawaiian Department, are ordered to duty at Selfridge and Kelly Fields, respectively, and relieved from advanced rank upon departure from Hawaii.

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UNFAVORABLE WEATHER HANDICAPS FLYING TRAINING

The present class of students at the Air Corps Advanced Flying School, Kelly Field, Texas, has completed 11 out of 17 weeks' training allotted to this phase of their work. As California sons would say, we have had so much unusual weather lately that students are slightly behind in flying time but well ahead in the ground training which, of course, balances up. The unusual weather had included fog, rain, hail, wind storms, etc. It has rained as much as six inches in one hour, and at this writing a number of cultivated fields are flooded and all rivers in this general area are at flood level. It is not believed that graduation will be delayed on this account, because, as mentioned above, the time lost for flying has been gained by ground instruction, hence the remaining weeks of the course will be spent almost entirely on flying training.

The Attack Section has just completed the student maintenance aerial navigation flight. On the first day the students went from Kelly Field to Abilene

and Fort Sill, and on the second day from Fort Sill to Midland, Carlsbad and Fort Bliss. The third day was spent in maintenance work on the airplanes at Fort Bliss, from which place they returned to Kelly Field by way of Marfa and Dryden on the fourth day. Colonel Jacob E. Fickel, Major Ballantyne and Captains Sweeley, Bradley and Whatley accompanied the students.

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INSTRUMENT FLYING AT KELLY FIELD

The instrument flying check required by the Chief of the Air Corps has been completed by most of the officers at Kelly Field, and their training in instrument flying, added to that given students, has increased instrument flying at this station considerably. For example, the 39th Observation Squadron reports that during the past month over 320 hours of instrument flying was done in airplanes of the squadron alone. It is equipped with the BT-2B airplane in which the SCR-183 radio set is installed.

HAMILTON FIELD DEDICATED

Nearly 20,000 people in about 3,700 automobiles swept into Hamilton Field to witness its official dedication on May 12th. Marvelous Marin, Inc., which had been instrumental in securing the site of Hamilton Field for a flying field, took charge of the dedication program.

One of the imposing ceremonies of the day occurred as the Chairman of the Marin County Board of Supervisors tendered the deed for the 928 acres of Hamilton Field to Governor Frank F. Merriam, of California, who in turn proffered it to Brig. General Henry H. Arnold, the latter accepting it as the official representative of the War Department.

In a very impressive talk, General Arnold touched on the military history of the district and the mission of the 1st Wing of the G.H.Q. Air Force in pro-

tecting the Bay districts. Parachute jumps with an aerial review by the 30 planes of the 7th Bombardment Group, in which Lieut.-Colonel Clarence L. Tinker directed the maneuvers from his Bird O'Prey, with commands over the radio which were heard by all of the assembled thousands through the medium of an amplifier on the ground, contributed to the enjoyment of the event.

Mr. Al Bagshaw, District Attorney of Marin County, presided as Chairman at the dedicatory exercises. Other officials present were Brigadier-Generals James A. Woodruff; W.E. Gillmore; Major F.B. Calloway, Air Officer of the 9th Corps Area, and Warden J.B. Helohan of San Quentin Prison.

This event stamped itself as the biggest one which Hamilton Field has yet experienced.

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FLIGHT TESTS FOR AIR CORPS OFFICERS

Of special interest to Air Corps officers is the publication by the War Department of Circular No. 27, May 25, 1935, on the above subject. Under the provisions of paragraph 6, Circular No. 6, War Department, 1935, the following flight test requirements and methods of conducting tests are prescribed:

1. Flight test requirements. -- a. With check pilot.

- (1) Take-offs and landings.
- (2) Simulated forced landings.
- (3) Figure 8's on pylons.
- (4) Spins, chandelles, spirals, stalls.
- (5) Accuracy (to include 90°, 130°, 360° approach landings).
- (6) Tests as prescribed in Air Corps Circular 50-1.

b. Solo.

- (1) Formation (wing man of 3-plane element; formation standard of basic stage graduate).
- (2) Strange field landings.
- (3) Cross-country of at least 500 miles radius from starting point, to include one landing away from home airdrome.
- (4) Night flying, to include take-off and landing after dark.
- (5) Night cross-country of at least 100 miles radius from starting point, with one landing away from home airdrome.

2. Method of conducting tests within the continental limits of the United States. -- a. A board to be known as

the Flight Test Board will be appointed by the Commanding General of the Air Corps Training Center. The personnel of this board will consist of not less than five officers of the Air Corps Training Center, qualified to administer the flight tests prescribed in paragraph 1, and will include the following:

Director of Training, Air Corps Training Center.

Director of Flying Training, Air Corps Advanced Flying School.

Stage Commander, Basic Stage, Air Corps Primary Flying School.

Report of the Flight Test Board will be made in accordance with paragraph 5, Circular No. 6, War Department, 1935, as amended, and will include findings and recommendations as to piloting proficiency in accordance with flight tests prescribed in paragraph 1.

b. BT type training planes will be used for flight tests with check pilots. Basic training or tactical type airplanes, to be designated in each individual case by the Flight Test Board, will be used in solo tests. Those tests requiring check pilot will be made by at least three members of the Board. Solo tests will be closely supervised by at least two members of the Board.

c. Personnel taking flight tests will be ferried by air to the Air Corps Training Center 14 days before the date of commencement of tests, in order to familiarize themselves with requirements thereof and for the purpose of familiarization flights with equipment to be used.

3. Method of conducting tests in overseas departments. -- a. Commanding Generals of the Panama, Hawaiian, and Philippine Departments will appoint boards to be known as Flight Test Boards, consisting of five Air Corps officers qualified to administer the flights prescribed in paragraph 1, which will be conducted in accordance with paragraph 2, except that types of airplanes will be designated by the department commander. When available, check pilots will be appointed from personnel who have had flying instructor experience at the Air Corps Training

Center.

b. Commanding generals of oversea departments are authorized to eliminate navigational tests as prescribed in paragraph 1, and to substitute therefor such navigational requirements as are in keeping with the physical and geographical limitations of their departments. Tests prescribed in Air Corps Circular 50-1 will be carried out insofar as equipment and radio facilities permit. The type or types of airplanes to be used for the tests will be designated by department commanders concerned. Report of flight tests will be made in accordance with paragraph 5d, Circular No. 6, War Department, 1935.

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AIR WAR OVER CALIFORNIA'S CAPITAL

Roaring to their first extended war problem, the fleet Bombers of the 7th Bombardment Group was scheduled to leave Hamilton Field at 7:00 a.m., May 20th, for their maneuvers over the State Capital for ten days of simulated conflict.

Tactical problems and instrument flying will be stressed in flying training. Should the Wing Commander order a flight over the San Diego Exposition, the night of May 29th has been tentatively reserved for that mission.

Ground training during this period will emphasize pistol firing and ground machine guns. Old Mather Field will be occupied. An advance echelon of 90 men from the 70th Service Squadron, under command of Captain Alvord V.P. Anderson, will pitch a tent city that will remind one of the Gold Rush days of '49 in this area. In this reoccupation of Mather Field, Col. Tinker will remember vividly his first experience there as commander of the 20th Pursuit Group.

Captain Anderson rapidly mobilized his advance force at Mather Field with the aid of the 53 trucks and the 10 motorcycles of the 7th Bombardment Group's tactical transportation. Upon the arrival of the flying units, the camp was prepared for them. The 70th Service Squadron will furnish supply, repairs and maintenance service to all units of the Group while at Mather Field. A comfortable uniform of blouse, slacks and overseas cap was prescribed for wear in the field. Sacramento will see 30 planes maneuver over it during this aerial mock war.

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CALIFORNIA'S YOUTH AIR-MINDED

Evidence of the keen interest in aviation on the part of the youthful population of California is shown in the frequent visits made to Hamilton Field, Calif., by various groups of school children.

Forty automobiles filled with 169 4-H

boys and girls of Sonoma County lined up at the entrance to the field recently. The visitors, who are doing agricultural extension work with the University of California, parked their cars on the circle around Post Headquarters and then on foot inspected the shops, operations office, the Bombers in Hangar 5, the fire department, one mess hall and day room in the barracks of the combat units.

Several days later, two groups of Catholic young people, comprising 50 boys from the Sanctuary Society of St. Mary's Cathedral of San Francisco, and twelve members of the Catholic Daughters of America, visited the field. The boys inspected the Martin Bombers, while the young ladies, under the guidance of Chaplain Stanley J. Reilly, made a tour of the post.

Among other school children who have visited Hamilton Field were 37 students of the aeronautical class in the Modesto high school with their teacher, Mr. J.P. Nystrom. The theory of the controllable pitch propellers, and many other salient features of the Martin Bombers were taught these students. The El Verano and the Tule Vista grade children also inspected the hangars and the planes.

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AIRMEN PATROL FLOODED AREAS

After a week of heavy rains, the rivers of western Oklahoma reached the flood stage. On May 19th, Flight "E," 16th Observation Squadron, Fort Sill, Oklahoma, was called on to patrol the flooded area and notify rescue groups, by drop message, the location and condition of any marooned people sighted. By noon of that day the water in this area had subsided, making further aerial patrol unnecessary.

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PHOTOGRAPHS AVAILABLE OF FLORIDA AIRPORTS

Funds to the amount of over a million and a half dollars from appropriation for emergency relief were expended in the State of Florida on the improvement of airports and runways. The Information Division, Office of the Chief of the Air Corps, has a complete set of oblique photographs, taken in December, 1934, and January, 1935, showing the present status of these airports.

Any activity planning field exercises in this area, or any individual planning a cross-country flight, can secure the loan of these photographs to assist in furthering their undertaking.

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Major Donald B. Phillips, Bolling Field; Captains Don W. Mayhew and Albert F. Glenn, Barksdale Field, are under to proceed to Maxwell Field, Ala., for duty as students at the Air Corps Tactical School. They are relieved from temporary increased rank effective August 28, 1935.

OFFICERS RELIEVED FROM INCREASED RANK

The following Air Corps officers, who are under orders to attend General or Special Service Schools, are relieved from temporary increased rank on the dates set forth:

Barksdale Field, Ala.: Major Charles C. Chauncey, August 25; Majors John M. Clark, Joseph E. Davidson, Captain Nathan F. Twining, August 28.

Brooks Field, Texas: Major William S. Gravely, August 27; Captain William T. Hefley, Aug. 30.

Langley Field, Va.: Major Caleb V. Haynes, August 26; Majors Newton Longfellow and Harold A. McGinnis, August 28; Captains William L. Scott, July 31; Elwood R. Quesada, August 28; Louis P. Turner, September 30; 1st Lieuts. Oliver S. Picher, August 31; Thomas C. Darcy, September 30.

March Field, Calif.: Captains Edwin S. Perrin, June 4; John H. Dulligan, July 26.

Mitchel Field, N.Y.: Major Leland W. Miller, August 27.

Randolph Field, Texas: Captains Homer W. Ferguson, August 28; Carl B. McDaniel, August 30.

Selfridge Field, Mich.: Major James E. Parker, August 27; Captains Clark N. Piper, George F. Schlatter, August 31; Minthorne W. Reed, September 30; 1st Lieut. Joe W. Kelly, September 30.

CHANGES OF STATION

To Langley Field, Va.: 1st Lieuts. Dudley D. Hale and Arren E. Higgins, from Signal School, Fort Monmouth, N.J. - Major Melvin B. Asp, from A.C. Technical School, Maxwell Field, Ala. Relieved from temporary rank June 29, 1935. - Captains Joseph A. Bulger, 80th Service Squadron, Panama; Glen C. Barcus, 19th Pursuit Squadron and John E. Bodle, 18th Pursuit Group, Hawaii, relieved from temporary rank effective upon date of departure - 1st Lt. Earle W. Hockenberry, from 18th Pursuit Group, Panama, relieved from temporary rank upon date of departure - 1st Lieut. Douglas M. Kilpatrick, 72nd Bomb. Sqdn., Hawaii, relieved from temporary rank on date of departure

To Barksdale Field, La.: Captain George L. Murray, from Kelly Field, for duty with GHQ Air Force, June 29. - Captain Morris R. Nelson, 6th Pursuit Squadron. Relieved from temporary rank upon departure from Hawaii. - Captain James L. Daniel, 18th Pursuit Group, relieved from temporary rank upon departure from Hawaii.

To Bolling Field, D.C.: Captain Ralph E. Koon to 23rd Bomb. Sqdn. Relieved from temporary rank upon departure from Hawaii.

To Chanute Field, Ill.: Captain Richard D. Reeve from 66th Service Squadron, Philippine Dept. Relieved from temporary rank upon date of departure. - Major James E. Duke, Jr., to 19th Pursuit Squadron, relieved from temporary rank upon departure from Hawaii. - 1st Lieut. Albert Boyd, upon completion present course of instruction at A.C. Technical School, that station. - Major

to

Early E.W. Duncan, 6th Pursuit Squadron. Relieved from temporary rank upon departure from Hawaii.

To Dayton, Ohio: Captain Oakley G. Kelly, from Randolph Field, for duty as Technical Supervisor, Fairfield Air Depot Control Area.

To Harrisburg, Pa.: Captain Henry H. Reilly from Langley Field, for duty as Technical Supervisor, Middletown Air Depot Control Area.

To Hawaii: Captain Idwal H. Edwards from duty as student, Command and General Staff School, Fort Leavenworth, Kansas.

To Hot Springs, Ark.: reporting to Army and Navy General Hospital for observation and treatment: Colonel Charles H. Danforth, from Langley Field; Lieut.-Colonel Henry B. Claggett, from Office of the Chief of the Air Corps; Captain Lynwood B. Jacobs from Aberdeen Proving Ground, Md.

To Kelly Field, Texas: 1st Lieut. R.F.C. Vance, upon completion present course of instruction, A.C. Tactical School, Maxwell Field. - 1st Lieut. Russell E. Randall, upon completion present course of instruction at Air Corps Engineering School, Wright Field. Previous orders in his case revoked. - Major Wolcott P. Hayes, 65th Service Squadron, relieved from temporary rank upon departure from Hawaii. - 1st Lieut. William L. Kennedy to 23rd Bombardment Squadron, relieved from temporary rank upon departure from Hawaii.

To Fort Leavenworth, Kansas, for duty as Instructor: Captain Sam L. Ellis, upon completion present course of instruction at Command and General Staff School.

To Little Rock, Ark.: 1st Lieut. Claire Stroh, for duty as Instructor, Air Corps, Arkansas National Guard, upon completion of present course of instruction at A.C. Tactical School, Maxwell Field, Ala.

To March Field, Calif.: Major Hubert R. Harmon, from duty as student, Command and General Staff School, Fort Leavenworth, to duty with 1st Wing, GHQ Air Force. - 1st Lt. Earl C. Robbins and 2nd Lt. Donald H. Baxter from duty as students at Signal School, Fort Monmouth, N.J.

To Maxwell Field, Ala.: Captain Harrison G. Crocker. Previous orders in his case revoked.

To Middletown, Pa.: Captain Russell C. McDonald, from Kelly Field, Texas.

To Mitchel Field, N.Y.: Captain Charles P. Prime to duty with GHQ Air Force from duty with Organized Reserves, 2nd Corps Area. - Captain David P. Laubach, 19th Pursuit Squadron. Relieved from temporary rank upon departure from Hawaii. - Major Burton F. Lewis from Fairfield Air Depot, for duty with GHQ Air Force. Relieved from temporary rank, June 29.

To Panama: Lieut.-Colonel John N. Reynolds from duty as Instructor, Field Artillery School, Fort Sill, about September 5, 1935.

To Randolph Field, Texas: Captain Stanton T. Smith, from duty with Organized Reserves, 5th Corps Area, Schoen Field, Ind. - Major Phillips Melville to the 5th Composite Group, (Continued on page 17)

Two student officers of the Basic Stage of the Air Corps Primary Flying School, Randolph Field, Texas, had narrow escapes recently on one of their extended night flights, one of them missing death in his burning airplane by a close margin.

Second Lieutenant John M. Hutchison is recovering from scratches and bruises suffered when he was thrown out of his plane as it crashed on the Kuykendall Ranch, near Buda, Texas. He was returning from Austin on a night navigation flight when he ran into low lying clouds near Buda. In the midst of one of them his plane crashed, cutting a swath for 100 yards in the mesquite and brush. When his plane struck the ground, he was thrown out of the cockpit, an incident which probably saved his life. A moment later the plane burst into flames and burned to a skeleton. When Lieut. Hutchison was thrown clear, he lost one of his shoes. A friendly bush broke the force of his fall. He experienced considerable difficulty making his way through the underbrush, cactus and rocks to the nearest ranch house, from which place he was taken to Buda for medical treatment. He returned to Randolph Field the next day by automobile.

The other student, 2nd Lieut. William B. Stone, lost his bearings near Llano on the same night, and when his gasoline supply ran low, he dropped a flare. Fortunately, it happened to be noticed by the chief of the fire department who, suspecting the pilot was seeking to make a landing, used a great deal of thoughtfulness, ingenuity and promptness, and notified the Llano telephone operator to rouse everyone in town who had an automobile and urge them to go to the emergency landing field at the edge of the city. About twenty minutes later, cars from all parts of the town had gathered along one side of the field shining their headlights across the level space.

Lieut. Stone had unbuckled his safety belt and was getting ready to "bail out" when the automobile headlights were turned on. He made a safe landing without difficulty, stayed at Llano overnight and flew the plane back the next day, after additional gasoline had been sent him from Randolph Field.

In his report of the accident, Lieut. Stone stated that he had left Randolph Field and had gone to Austin, his destination, and had started the return trip. He stated that the ceiling was closing to some extent but the beacons were still visible at a thousand feet; that after he passed San Marcos, the beacon at New Braunfels became invisible, so he turned back and endeavored to get back to the emergency landing field at San Marcos, but by that time the beacon there was no longer visible. After fly-

ing for a few minutes at an altitude of 200 feet, he decided to get above the clouds to see if he could find some breaks. He finally came out of the clouds at 10,000 feet, but could not find any edge to them, so stayed at that altitude. About a quarter to twelve, the clouds began to break and, finding a hole in them, he came down to an altitude of about 2,000 feet, at which time he could see the city of Llano. He circled the town two or three times, endeavoring to find a landing field, but being unsuccessful he dropped his first flare. He located a field he thought was suitable for landing and was endeavoring to drag that field when his flare went out. The townspeople apparently were attracted by the flare and had started out in the vicinity in which he was circling.

Climbing back to an altitude of 2,000 feet with a view to dropping the second flare, he decided at that point to jump when the flare would not release itself from the plane. By that time the people had gathered in the field, which at one time had been used as emergency landing field, and a spot light was directed on Lieut. Stone's plane from there, which attracted his attention. He thereupon returned to that field and found that the people had parked their cars along the edge of the field, so that the headlights lighted up the landing area. After discovering there was an area large enough to land in, he had no difficulty in landing in the field with the aid of his wing tip lights.

On the following day the Commanding Officer of Randolph Field wrote a letter to the citizens of Llano, thanking them for their timely courtesy to Lieut. Stone, and commending them on their thoughtfulness, ingenuity and promptness in lighting up the landing field, stating that they were instrumental in averting what might have been a fatal accident, or at least the loss of valuable government property, and extending to the citizens of Llano an invitation to visit Randolph Field as guests of the officers of the post.

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PROMOTIONS OF AIR CORPS OFFICERS

Captain Harrison W. Flickinger was promoted to Major, with rank from May 1, 1935.

Promoted to First Lieutenant were 2nd Lieuts. William Ball, rank April 25, 1935; Carl R. Sterrie and Merrill D. Burnside, rank April 30th; Hollingsworth F. Gregory, Eugene H. Beebe, Harold W. Grant, Kenneth A. Rogers, Reuben C. Wood, Jr., Leslie O. Peterson, Irving R. Selby, Floyd E. Wood, Theodore M. Bolen, Norman R. Sillin, Flint Garrison, Jr., James L. Jackson, Chester P. Gilger, Hugh A. Parker and Thomas D. Ferguson, with rank from May 1, 1935; Robert E. Davenport, rank from April 30th; Donald L. Futt, rank from April 22, 1935.

Relieved from temporary rank upon date of departure from Hawaii. - Captain Charles T. Skow, from Maxwell Field, Ala.

To Rockwell Air Depot, Coronado, Calif.:

1st Lieut. Charles A. Bassett, upon completion of present course of instruction at University of Michigan, Ann Arbor.

To Rockwell Field, Calif.: Major Howard C. Davidson, for duty with GHQ Air Force, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas.

To Washington, D.C.: Captain Thomas W. Blackburn, from duty as Instructor, 36th Division, Texas National Guard, Houston, to duty in National Guard Bureau, July 5, 1935. - Major Leslie MacDill, from Bolling Field, to duty as a member of War Department, General Staff, August 18, 1935 - Major Edward V. Harbeck, from Barksdale Field, to Office of the Chief of the Air Corps, relieved from temporary rank, June 30, 1935. - Captain William B. Souza, from Langley Field, to Office of the Chief of the Air Corps.

To Wright Field, Ohio.: 1st Lieut. Russell J. Minty, upon completion of present course of instruction, University of Michigan.

DETAILED TO THE AIR CORPS: 2nd Lieuts. Donald F. Buchwald, Infantry, and Richard T. Coiner, Cavalry, and to Randolph Field, Tex. for primary flying training July 1, 1935.

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TEMPORARY PROMOTION OF AIR CORPS OFFICERS

To Lieutenant-Colonel

Captain Younger A. Pitts assigned May 16, 1935, as Air Officer, 7th Corps Area.

Major Ira A. Rader assigned as Air Officer of 4th Corps Area, May 11, 1935.

To Major

Captain Lionel H. Dunlap, May 15, to duty as Commander, 66th Service Squadron, Nichols Field, P.I.

Captain Delmar H. Dunton, May 25, 1935, to duty as Supply Officer, Station Complement, Hamilton Field, Calif.

Captain Don L. Hutchins, May 24, 1935, to duty as Supply Officer, 18th Composite Wing, Fort Shafter, T.H.

Captain Carlyle H. Eidenour, May 29, 1935, to duty as Intelligence and Operations Officer, 7th Bombardment Group, Hamilton Field.

To Captain

1st Lieut. Frederick L. Anderson, Jr., May 25, 1935, to duty as Operations Officer, Station Complement, Hamilton Field, Calif.

1st Lieut. Arthur L. Bump, Jr., May 18, to duty as Flight Commander, 21st Observation Squadron, Bolling Field, D.C.

1st Lieut. Paul T. Cullen, May 18, to duty as Flight Commander, 97th Observation Squadron, Mitchel Field, N.Y.

1st Lieut. John F. Egan, May 21, to duty as Flight Commander, "A" Flight, 17th Pursuit Squadron, Selfridge Field, Mich.

To Captain (Continued)

1st Lieut. John W. Kirby, May 14, assigned as Flight Commander, 2nd Obs. Squadron, Nichols Field, P.I.

1st Lieut. John W. Persons, May 18, assigned Flight Commander, 14th Bombardment Squadron, Bolling Field, D.C.

1st Lieut. James G. Pratt, May 11, assigned as Intelligence and Operations Officer, 87th Pursuit Squadron, Maxwell Field, Ala.

1st Lieut. Lloyd H. Watnee, May 18, assigned as Intelligence and Communications Officer, 1st Wing, March Field, Calif.

To 1st Lieutenant

2nd Lieut. Royden E. Beebe, Jr., May 18, assigned as Engineer Officer, 97th Observation Squadron, Mitchel Field, N.Y.

2nd Lieut. William D. Eckert assigned as Engineer Officer, 29th Pursuit Squadron, Albroom Field, Canal Zone. (May 8, 1935)

2nd Lieut. Charles B. Dougher, May 18, assigned as Transport Officer, 61st Service Squadron, Mitchel Field, N.Y.

2nd Lieut. John C. Gordon, May 11, assigned as Meteorological Officer, Station Complement, Brooks Field, Texas.

2nd Lieut. Paul G. Miller, May 18, to Supply Officer, 96th Bombardment Squadron, Langley Field, Va.

2nd Lieut. Gerald E. Williams, May 18, assigned as Communications Officer, 20th Bombardment Squadron, Langley Field, Va.

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CHANGES IN ASSIGNMENTS OF AIR CORPS OFFICERS

1st Lieut. John C. Gordon from Meteorological Officer, Station Complement, Brooks Field, to Supply Officer, 12th Observation Group, at that station.

1st Lieut. Tróup Miller from Supply Officer to Engineer Officer, 20th Bombardment Squadron.

Captain James P. Newberry, from Supply Officer, 12th Obs. Group, to Supply Officer, Station Complement, Brooks Field, Texas.

1st Lieut. Richard J. O'Keefe, from Supply Officer, 25th Bomb. Sqdn., France Field, to Chief Inspector, Panama Air Depot.

Major Lewis R.P. Reese from Intelligence and Operations Officer, 7th Bomb. Group, to Squadron Commander, 69th Service, Hamilton Field.

1st Lt. Wm. C. Senter, from Engineering Officer, 20th Bomb. Sqdn. to Supply Officer, 6th Squadron.

Above officers continue to retain temporary advanced rank.

The following-named officers were relieved from temporary advanced rank:

Major John D. Corkille, Aug. 26th; Lieut.- Col. Laurence F. Stone and 1st Lieut. Joseph F. Carroll, upon departure from Hawaii; Major Harvey Prosser, 66th Service Sqdn. Nichols Field, P.I., May 14th; 1st Lieut. Richard H. Wise, upon departure from Hawaii

Master Sgt. Vernon L. Roberts, A.C., Kelly Field, was appointed Warrant Officer, May 1, '35.

V-6796, A.C.

NOTES FROM AIR CORPS FIELDS

Crissy Field, Calif., May 10, 1935.

Major Floyd E. Galloway succeeded Major Donald P. Muse as Commanding Officer of Crissy Field, Calif., the latter having departed for the Panama Canal Department.

All the officers of the 91st Observation Squadron completed the firing of the preliminary and record pistol courses, under the direction of 1st Lieut. John L. Nedwed, Armament Officer, with highly satisfactory results. The enlisted men have completed the preliminary course.

First Lieuts. F.L. Anderson, Richard C. Lindsay and 2nd Lieut. William Ball were recently transferred to Hamilton Field.

Many of us saw 1st Lieut. George E. Henry slip away from our encampment at Watsonville, Calif., on the morning of April 27th, but no hint had been given that before the setting of the San Francisco sun he would be the groom of the former Miss Barbara Jones, daughter of Major A.M. Jones, Assistant Chief of Staff, 9th Corps Area. They honeymooned at Yosemite National Park and returned in time for Lieut. Henry to commence his monthly contact course with the Coast Artillery on May 1st. The post welcomes the attractive bride.

Wheeler Field, T.H., May 10th.

April 30th was more than just another of Uncle Sam's pay days to his boys. That date saw the 6th Pursuit Squadron gathered to pay homage to one of their fine soldiers, Private Lloyd H. Hess, Specialist, 2nd Class. This veteran, with a round red face and ready smile, was called "Front and Center" while Major Early E.W. Duncan, Commanding the 6th Pursuit, read the certificate from the War Department awarding Hess a Silver Star for bravery in action while a member of Company "A," 28th Infantry, 1st Division, A.E.F. Major Duncan commended Private Hess on behalf of the officers and enlisted men of the 6th.

A small but worthy group of airmen answered "First Call" for the Group Baseball Team. Lieut. Nicholas E. Powell, 6th Pursuit Squadron, appointed coach, faces the difficult job of ruling the destinies of a team which captured the Army laurels of the Hawaiian Division and Department during the past season. Prospects loom brighter than ever before. The Division League officially opened on May 4th, and the Wheeler Field Airmen's first game was with the 3rd Engineers of Schofield Barracks.

Luke Field, T.H., May 10, 1935.

50th Observation Squadron: Weights, loads, etc., are evenly distributed throughout most Observation airplanes, but the 50th encountered a problem which stumps the local aeronautical engineers of the Squadron. The subject matter of lift and correct distribution of physical load at the proper moment to offset the crushing of back rest and fake flooring is presented in the person of Corporal "Jim" Pendleton, weighing 210 pounds and standing over six feet; alas, just too big for a wee O-19B. It was suggested that we place him in his proper element, but as farming is an overcrowded occupation in Hawaii, we must resort to Bombardment Aviation. Upon a recent tow flight, it became necessary for the pilot to ask the Corporal kindly to find a smaller man for the rear cockpit, as it was essential to get off the ground with the maximum run of a mile.

Eight potential mechanics reported for duty with this organization from the Recruit Training Center at Wheeler Field. These additional men were welcomed with open arms by the line chief.

First Lieut. J.M. Chappell reported in from leave on April 15th. Incidentally, he deserted the ranks of the bachelors. Congratulations!

4th Observation Squadron: During the first part of April, this Squadron engaged in various tactical missions, which consisted of aerial gunnery on towed targets, both pilots and observers, many missions with the flexible guns being fired; instrument flying, which under the able direction of Capt. Rogers, has proceeded with rapid strides; aerial photography; day and night reconnaissance; and combat exercises using camera guns. The Squadron participated in a demonstration flight for Army Day, an aerial review for the Department Commander and a personnel and ship inspection by General Drum, out of which it emerged with a very favorable report. One cooperative mission with the Field Artillery was accomplished. Great stress has been laid on radio communications, both inter-plane and plane-ground, the results showing the value of the ground course being held daily in the Radio Department.

The detachment which has been engaged in tow target work with the anti-aircraft regiment at Waimanalo has returned. The results obtained were entirely satisfactory to both the Air Corps and the Coast Artillery.

The 4th Squadron now having nine O-19's in service has reached the peak of its strength. Having been used almost continuously for the past four years, these ships are nearing the

end of their meritorious career. Their durability under difficult flying conditions stamp them as one of the best of the service ships, but the rapid development of Army aircraft necessitates their retirement from active duty in the near future.

The recent inauguration of temporary promotions brought about many inter-squadron transfers, also a new Operations Officer from the mainland, Captain R.H. Warren, from Randolph Field, Texas, where for several years he was an instructor at the Flying School.

Three non-coms. who arrived on the last transport and joined our squadron were 1st Sgt. Steve Stanowich, from the 19th Airship Squadron, Langley Field; Staff Sgt. Frank Bobulski from the 15th Observation Squadron, Scott Field, and Staff Sgt. Chauncey L. Anderson from the 48th School Squadron, Chanute Field (Crew Chief). Staff Sergeant Arther E. Soball (Crew Chief) was transferred to the 4th from the 65th Service Sqd.

This week saw the end of a very disastrous baseball season. After winning the title last year, we lost all games this year and finished a dismal last. This can be attributed to scarcity of seasoned players, only three veterans remaining from the previous year. Some promising players were unearthed and we feel confident of doing better next year.

Hawaiian Air Depot, May 10, 1935.

Second Lieut. Marshall Bonner joined the staff of Depot officers on April 25th and was assigned as Officer in Charge of Plans and Estimates Branch and Assistant Adjutant.

The Engineering Section equalled its March record by completing 7 major overhauls of aircraft and one major assembly. Eight engines of various types were also overhauled.

The Depot is just beginning to feel the effects of the big scale maneuvers which are going to occur in and around Hawaii during May and is looking forward with much interest to the visit of the Fleet.

France Field, Panama Canal Zone, May 1, 1935.

The 7th Observation Squadron now has 8 O-19C's in operation. Two planes were surveyed and one was received from overhaul the past month. All planes were painted with the new Air Corps colors, blue and yellow.

First Lieut. William H. McArthur was transferred to the Panama Air Depot, taking over the duties of Assistant Engineering Officer.

The 25th Bombardment Squadron, under the leadership of Lieut. Bernard A. Bridget, entered the new year with a total of five B-3A airplanes and ten pilots. However, by the time the Air Corps Maneuvers ended in February, the Panama Air Depot had recommended three of these for survey. With this skeleton squadron, the cooperative maneuvers were launched. The old Keystones were subjected to rather exciting exigencies throughout the period, but survived the heavy duty requirements placed upon them and are still in

commission, though it is a matter of conjecture as to future endurance.

A gunnery camp was established at Rio Hato, and the 25th is busily endeavoring to complete the firing schedule in time to prepare for the proposed Group extended cross-country flight in May. The Squadron is also engaged in flying nightly for the record searchlight practice of the Coast Artillery on the Pacific side.

Major Willis R. Taylor is temporarily laid up with a broken hand, sustained, according to his story, while cranking his motorboat. Several investigations are now under way to check the truth of this story.

Major Homer B. Chandler, who has been ill for the past few weeks, is now convalescing at the Gorgas Hospital.

During the recent inspection by the Inspector General, the Panama Air Depot Detachment Mess and Engineering Shops were highly commended for their appearance and efficient operation.

Air Corps Tactical School, Maxwell Field.

The 54th Bombardment Squadron, captained by the veteran Sergeant "Pat" Casey, third sacker of the team, captured the Inter-Squadron Baseball Championship again this year, winning every game played. The Tactical School Detachment team, coached and supervised by First Baseman "Joc" Childs, finished second, followed by the 34th Service Squadron and the 51st Attack.

Captain Frank F. Everest, Jr., Post Athletic Officer, is busy selecting his Post Team and stated that he believed the Tactical School would place its best baseball team in years in the field against the many teams desiring games in this section of the country.

The Spring Horse Show for the Tactical School was held in the "riding ring," immediately in front of Austin Hall at Maxwell Field on Saturday morning, May 18th, and was one of the most colorful events staged this year. Many visitors from Montgomery and surrounding communities, and all officers and ladies were present in the stands when the show started. The Children's Hack Class opened the show. There were 18 entrants in this event, and the winner was Barbara Slauson, daughter of Capt. and Mrs. Kinsley W. Slauson. In the next event, the Officers' Charger Class, there were 15 entrants, first place going to Lieut. Haywood Hansell, Jr. Jane Eglin won first prize in the Children's Jumping Class, in which there were five entries. In the Ladies Novice Class, five entrants, the prize winner was Mrs. Gates. "Fairs of Road Hacks", the next event on the program, with nine teams competing, was won by Captain Schramm and Mrs. Evans. This event was followed by the "Open Jumping" contest, with ten competitors, Captain Everest being the winner.

The last Class of the Show featured the Ladies Advanced Equitation Class, with 12 entrants, Mrs. McGregor winning first honors.

Hamilton Field, Calif., May 20th.

Captain Don L. Hutchins, former post commander and executive officer at the field, sailed for Honolulu on May 17th. It is believed he will take up duties intimately connected with the construction of the new \$11,000,000 flying field to be located between Watertown and John Rodgers Airport.

Captain Walter B. Hough, who was sick at Walter Reed General Hospital for many months, reported for duty on May 1st and was appointed Executive Officer to fill the vacancy caused by Captain Hutchins' transfer.

Lieut.-Col. Glenn I. Jones, until recently Chief Flight Surgeon in the Office of the Chief of the Air Corps, arrived at the post to take over the duties of Post Surgeon which Major Fabian L. Pratt formerly administered.

Major Guy Kirksey was appointed Station Inspector, relieving Capt. Charles B. Stone, III.

First Lieut. Richard C. Lindsay and 2nd Lt. William Ball were transferred here from Grissy Field, the latter being placed on special duty with the Group Operations Officer.

Majors L.R.F. Reese, Fabian L. Pratt and Capt. James W. Spry were designated as the Aircraft Accident Classification Committee for the 7th Bombardment Group.

Sgt. Erik W. Lindhe, on duty in the Office of the Station Inspector, was promoted to Staff Sergeant on April 26th.

Second Lieuts. Cady R. Bullock and William C. Capp, Air Reserve, sailed for duty in Hawaii on May 17th.

Departures of enlisted men for other stations were as follows: Staff Sgt. Bruno Wetzorke to the Philippines, Oct. 9th; Tech. Sgt. William B. Moorhead, 69th Service Squadron, to the Philippines, Sept. 14th; Staff Sgt. Oliver E. Lindsey, now at Letterman General Hospital, to the Philippines, October 9th; Tech. Sgt. Walter A. Waddell, 9th Bomb. Sqdn., to Panama, July 30th; Master Sgt. George W. Kraft, on detached service here, to the 40th Attack Squadron, Kelly Field; Private John A. Troesser, 11th Bomb. Sqdn., to Mitchell Field, May 20th; Staff Sgt. Dominic Dennis, Station Complement, to Hawaii, June 11th.

A Board of Officers, consisting of Major Arthur G. Hamilton, Captain A.V.P. Anderson and 1st Lt. Roy H. Lynn, will meet on June 2d to conduct an examination for air mechanics.

Staff Sgt. Axel Bishop, who has over 20 years of service with the colors, became Mr. Axel Bishop recently. His background as a 2d Lieut. in the Sanitary Corps during the World War qualified him for the position which assiduous attention to duty gained him. It is believed Mr. Bishop will serve in his capacity as Warrant Officer in the Air Corps Supply at this station if present recommendations are approved.

Col. Clarence L. Tinker took off in his Bird O'Prey at 8:00 a.m., May 20th, for the 7th Bombardment Group Maneuvers at Sacramento, with Captain C.B. Stone, III, as co-pilot; Tech. Sgt. Feder Berg as Crew Chief and Sgt. Allan P. Cross as radio operator. After the original take-offs of the Bombers of the combat units at 7:00 a.m., the planes flew to Mather Field, deposited their load of men and baggage and then returned to Hamilton Field for additional impedimenta and passengers.

Stuart B. Dunbar, publicity director for the Redwood Empire Association, accompanied by Fred Mae, still and movie photographer, secured excellent shots of the take-offs of the Bombers for the Sacramento Maneuvers and close-up shots of Lt.-Col. Tinker and Capt. Stone as they boarded the Bird O'Prey. These news reels are to be used for publicity purposes at the San Diego Exposition by the Redwood Empire Assn. Movie panoramas of the Marin air field were also taken from the top of the water tower.

While the Bombers are at Mather Field, 2nd Lt. Duncan J. Powers, Air Reserve, Group Athletic Officer, has drawn up an intensive program of athletics for the left-behinds of the combat units of the 7th Bombardment Group and the 70th Service Squadron.

Stock in the Hamilton Field baseball club is going up. Under the leadership of Tech. Sgt. John Suggs, the post nine defeated the San Rafael Town nine, 5 to 2; the Harmony Grove Druids of Petaluma, 3 to 0; the crack Taxalpais High Swatsmen, 4 to 3, and the San Rafael town team for the second time, 7 to 2. During the maneuvers, all games were cancelled, and it is possible that the tactical activities may prevent the resumption of scheduled games. The Inter-Squadron league games were washed out, because it is impractical for a combat unit of 49 men to care for its Bombers under an intensive training schedule and at the same time play baseball.

During the recent quarterly test of airplanes, the Bombers, with full military loads, were inspected for fitness for three days of field operations. Major L.R.F. Reese examined armament; Capt. James W. Spry, mechanical efficiency and for correct amounts of engineering supplies; and Capt. E.T. Noyes, flying equipment and clothing. Afterwards the planes sped off with their full military loads, not to exceed 2,200 pounds, with the gunners firing 25 rounds from each machine gun to test its response.

With a score of swift war birds, Lt.-Colonel Tinker flew to the third rendezvous of the 1st Wing, GHQ Air Force, at March Field on May 4th. In his Bird O'Prey, the Flight Commander of the 7th Bombardment Group led the largest force of Martin Bombers that the striking arm of Hamilton Field has yet mustered for a Wing concentration.

Second Lt. Lloyd H. Watnee, former post signal and meteorological officer at Hamilton Field, was transferred to March Field.

Major Robert C. Murphy spoke on "Mothers" before the American Legion Auxiliary of San Anselmo on May 10th, Mothers' Day.

Capt. Delmar H. Dunton has taken up the duties of Major Devereux M. Myers as Air Corps Supply Officer, Engineer Officer and Purchasing and Contracting Officer. He was also detailed as Ordnance and Chemical Warfare Officer. Major Myers retains command of the 70th Service Sqdn.

Officially named the 11th Aero Squadron June 26, 1917, while at Kelly Field as a "war baby," the 11th Bombardment Squadron on March 20th became a combat unit of 49 men. Major Arthur G. Hamilton, who assumed command of the Squadron on October 9th, is still in command. Other regular officers assigned to the 11th are Capt. D.R. Lyon, Walter Agee and Lt. A.K. Dodson. Reserve officers of this organization are Lts. C.M. Nelson, N.O. Sprunger, A.R. Luedecke, and the Flying Cadets are R.H. Volin and H.E. Knieriem.

Lieut. Glen C. Moser was transferred from this station to March Field on April 26th.

Philippine Air Depot, Nichols Field, P.I.

Capt. Charles W. O'Connor returned from detached service at Baguio and is again in charge of the Engineering Section.

Mr. C.L. Lambert, Shop Superintendent of the Engineering Section of the Depot, is now on his first long leave since he joined the Section in 1927. Mr. P.T. Spicer is acting as Shop Superintendent during Mr. Lambert's absence.

Fort Sill, Oklahoma, May 20th.

Col. Jacob E. Fickel, commanding a flight of 13 airplanes from the Attack Section of the A.C. Advanced Flying School, Kelly Field, arrived here May 11th and departed the following day for El Paso via Midland.

Major McDuffie, leading a flight of 9 B-6A planes from Langley Field, Va., arrived here May 18th and departed on the 19th for Fairfield via Scott Field, Ill.

The Air Corps baseball team kept a clean record to date by defeating Ordnance 10 to 0 behind the 2-hit pitching of Igmundson.

Langley Field, Va., May 16, 1935.

The 33rd Pursuit Squadron had a run of misfortune in its early season gunnery practice. While firing on ground targets on the Plum Tree Island Range on April 29th, 1st Lt. A.J. Hanna was seriously injured when his plane crashed. He suffered severe cuts to his left eye, fracture of right knee and concussion of the brain. He is now convalescing at Walter Reed General Hospital.

Major H.A. McGinnis and Capt. A.L. Merrell (Res.) returned from an aerial tour of inspection of the Air Corps supply facilities and systems at Duncan and Randolph Fields and the Fairfield Air Depot.

Capt. R.P. Williams was a recent visitor from his temporary post of duty at Rapid City, S.D. He reports that preparations for the Stratosphere Flight are progressing speedily and efficiently.

San Antonio Air Depot, Texas, May 20th.

The Depot was host recently to a party of Navy air personnel on their annual air tour of military, naval and commercial aeronautical activities, especially assembly and repair establishments. The tour was made in a bi-motored "Condor" Transport plane piloted by Lieut. E.T. Neale, of the Anacostia, D.C. Naval Air Station. All members of the party manifested intense interest in the operations of the Depot. Their visit was thoroughly enjoyed by the Depot personnel and proved of immense benefit in the coordination of aircraft engineering matters.

Officers who recently visited the Depot to confer on engineering and supply matters were Major H.A. McGinnis and Captain A.L. Merrell from Langley Field, and Lieuts. L.P. Whitten, J.F. Early and F.D. Klein from the Materiel Division, Wright Field.

Major-General James B. Allison, Chief Signal Officer of the Army, during the course of his recent tour of inspection of Signal Corps activities throughout the country, visited the Depot and conferred with the Commanding Officer, later inspecting the new Signal Corps aircraft radio repair section here.

During April, the Engineering Department overhauled 25 airplanes and 43 engines and repaired 53 airplanes and 48 engines.

The Depot regrets losing Staff Sergeant Opal E. Henderson, from Kelly Field, who was on detached service here since March 4, 1933, as airplane pilot with the supply transport service, and who departed May 17th for service in Hawaii.

The monthly Control Area supply and engineering conference at this Depot on May 7th was attended by Majors C.C. Nutt and T.L. Gilbert from Kelly Field; Lieuts. J.G. Neal and A.M. Kelley, Randolph Field; Capt. P.C. Wilkins and Lt. H.F. Gregory, Fort Sill; Capt. D.W. Mayhue and E.M. Bailey, Berksdale Field, and Capt. H.W. Grant and Lts. D.F. Stace and S.R. Stewart, Brooks Field.

Recent visitors at the Depot were Major George P. Bush, in charge of the Supply Division of the Office of the Chief Signal Officer, in connection with a study of the matter of establishing a Signal Supply Depot; Lieut.-Col. Frank D. Lackland, enroute to Wright Field from an inspection tour; Capt. W.R. Carter, from Maxwell Field, on a ferrying flight, and Major C.S. Johnson, Rockwell Air Depot, on a ferrying flight.

Mr. David M. Warner, Associate Materials Testing Engineer at the Materiel Division, was on several days' temporary duty here instructing Engineering Dept. personnel in the use of magnaflux apparatus.

Mr. Herman Offer, Civil Service Guard at the Depot, retired May 18th, at the age of 70, after nearly 19 years' service. He was watchman at Fort Sam Houston for over five years and served at the Depot continuously from October, 1921. One of our most faithful and efficient employees, he takes with him the best wishes of the Depot personnel on his well earned retirement.

The accidental discharge of a pistol which he was cleaning proved fatal to Master Sgt. Frederick A. Aalen, Retired, who was employed as Civil Service guard at the Depot since January. Interment took place on May 6th in the National Cemetery, San Antonio. The deceased is survived by his widow, son, daughter, mother, brother and two sisters.

Lieuts. J.H. Hicks and D.J. Ellinger ferried two PT-3A's to the Rockwell Air Depot and returned with two C-19B's for Kelly Field.

Lieut. Charles E. Deerwester, Asst. Engr. Officer, Middletown, Pa. Air Depot, a recent visitor, became severely ill and was sent to the Station Hospital at Kelly Field pending orders to proceed to the Fitzsimons General Hospital for observation and treatment.

Lieut. and Mrs. Charles K. Moore are receiving congratulations on the arrival on April 25th of their first-born, Kenneth Hart Moore.

Advanced Flying School, Kelly Field, Texas.

Officers at this station who made extended flights recently were Captains G.H. Steel to Aberdeen, Md., in a BT-2B; H.E. Engler to Omaha, Neb., in an C-25; G.C. Jamison to Tucson, Ariz., in a BT-2B, ferrying Lieut. B. Stern, Signal Corps, on an inspection tour; 1st Lieut. C.A. Clark to Winston-Salem, N.C., in an A-3.

When the baseball season began, it was decided to allow the teams which had already begun to play, to continue to play together regardless of transfers which later took place to conform to the new GHQ organization. These transfers, however, have caused a few humorous situations. For example, a man who was formerly in the 43rd Squadron and is playing on that team finds himself playing against the 68th Squadron to which he is now assigned. The men are just as eager to win, however, for their old squadron.

The 68th Squadron, with ten victories and two losses, leads the Kelly Field Baseball League, followed in order by Headquarters team, the 39th, 43rd, 42nd, 41st and 40th Squadrons.

After having been out of the boxing league for several years, Kelly Field re-entered this year, but has a scarcity of material to select from.

The swimming pool has been repainted and new diving boards have been installed. The Spring opening of the pool took place on May 22nd.

The spring weather at San Antonio was appropriately celebrated at the field by an elaborate Spring Dance.

LIBRARY NOTES

Some of the More Interesting Books and Documents

Recently added to the Air Corps Library

A 00 England 1, No. 38. Orfordness rotating wireless beacons, by Air Ministry, Great Britain, Oct. 1934, 21½ p.

A 00 U.S. 29, 1935, May 4. Senator McAdoo announces drive for world air records, N.A.A. Release, May 6, 1935.

A 00 U.S. 53. 42 Expeditions of the National Geographic Society have cooperated with the U.S. Government, by National Geographic Society, April 9, 1935, 5p.

A 00.2/14. Data on treaties, pacts, alliances, declarations. Assembled by Military Intelligence Div. May 1935, 14p.

D 00.113/2. Provision of high flights with oxygen in military operations, by S.A. Novikoff, June, 1934, 5p. Discusses compressed oxygen and liquid oxygen.

D 52.1/9. The problem of stability in airplanes, by Louis Breguet, 20p.

D 52.7/58. The Italian Dirigible N-1, by Alessandro Guidoni.

E 10.2, U.S. 28. U.S. Aviation and the Air Mail, May, 1934, 20p. From Magazine FORTUNE.

F 10 U.S. 40. Airports and landing fields; a comprehensive review of all phases of this subject, including promotion, public relationship, engineering design and construction, equipment and management, by American Society of Municipal Engineers, Oct. 1931, 71p.

629.1304/Su7. Airman's World; a book about flying, by Peter Supf. 1933, 224p. Purpose of book is to give some impression of the airman's world, of its beauty, majesty and strangeness.

629.17 Su 6. Aircraft, progress and development, by P.H. Sumner. 1935. 295p. Book intended to bring the reader in touch with air matters by a world picture of progress in aviation.

629.17 B.76. The Autogiro and how to fly it, by Reginald Brie. 1933. 82p.

92/M32. King of Air Fighters; a biography of Major "Mick" Mannock, V.C., D.S.O., M.C., by Flight-Lieut. Ira Jones, 1934. 303p. Officially acknowledged by Air Ministry to be the leading British air fighter of the War, with 73 victories.

Selected Magazine Articles

Significance of the GHQ Air Force, by Lt. Col. John D. Reardan, U.S. Air Services, May 1935.

Organization of Air Ministry. Revue du Ministère de L'Air, April, 1935. French text.

Contribution of Interior Network of Air Lines to the Organization of National Defense. Les Ailes, April 4, 1935. French text.

War Birds are Flying, by W.B. Courtney. Colliers, May 25, 1935. Europe has three times as many combat planes now than at end of the war. Aviation being groomed for leading roll in event of conflict. Civilian imaginations reel at roar of props and crash of bombs, picturing burning clouds of gas and lethal clouds of bacilli poured from the skies. How true are these visions; what protection against them?



TECHNICAL INFORMATION

ENGINEERING AND NEWS



AIR CORPS MATERIAL DIVISION

Synthetic Rubber Development.

The use of synthetic rubbers as substitute for the crude rubber employed in the construction of the numerous rubber articles necessary in the Air Corps has kept pace with the technical advances made in the development and manufacture of these synthetics. Crude rubber is necessarily a strategic material, in that there is no source for it of commercial importance within the continental limits of the United States.

Fortunately for all concerned, the synthetic rubbers are superior to crude rubber in the essential points which are of interest to the Air Corps. In particular, they are more resistant to the action of gasoline and most of the familiar solvents, and are more impervious to the diffusion of helium and hydrogen than rubber, making them of value in the construction of balloons and airships.

Of the two commercially important synthetics the one known as Thikol is used in the construction of hose for the flexible connection in fuel lines on airplanes, and has been standard for the past two years. It is also used as hose equipment for dope and paint sprays.

The second synthetic is known as Duprene, and its possibilities appear to be even better than those of Thikol. This synthetic can be used with gasoline and all the usual solvents encountered in the service and, in addition, is suitable throughout the entire temperature range of oil hose, which fact presents a distinct advantage over Thikol. At the present time a standard C-3 Observation balloon made with Duprene coated fabric is being constructed, and will be delivered to the service some time this coming summer. In addition, Duprene is being used in the construction of standard and service test parts in a number of other places.

Automatic Pilot.

Installation of an automatic pilot in a Type YB-12A airplane was completed and the airplane ferried to Bolling Field for the purpose of being placed in service for approximately ten days. At the end of the present mission, this airplane is to be returned to the Materiel Division for complete test of the automatic pilot.

Field Cooking Outfit.

A representative of the Materiel Division visited the Jeffersonville Quartermaster Depot, Jeffersonville, Indiana, for a conference regarding the comments and criticisms which were made by Air Corps activities on the field cooking outfit developed by that depot.

In view of the fact that satisfactory results were obtained in a number of tests by Air Corps activities, it was decided to ship this equipment to March Field, Calif., for further tests during maneuvers on the west coast. At the conclusion of these tests, standardization will be considered after incorporating such changes as have been found desirable.

Cleaning Compound Formulas.

The Air Corps has for some years past purchased cleaning materials for use at the depots in the form of proprietary compounds. This method of procurement was found to be unsatisfactory due to the large variety of cleaning compounds which were offered as the equal of compounds known to be satisfactory for any particular application, and also on account of the differences in water supply and equipment at the several stations which prevented the use of a single formula for all stations. The Materiel Division initiated an investigation of cleaning compounds about a year ago and has successfully formulated several materials which can be used at the several depots with satisfactory results, at an average cost of 3½ cents per pound.

It was found that various modifications of the formula developed for Wright Field were necessary at other depots. A representative of the Materiel Division visited each major depot and, with the assistance and cooperation of personnel at the depots, developed formulas which require the purchase of only six basic ingredients which, after properly mixing, will satisfy our requirements for cleaners. The depots outside the United States will be furnished with formulas with which they may experiment in order to select one for their operating conditions.

Regrinding Crankshafts.

Facilities and equipment have been made available at the Fairfield Air Depot for regrinding all types of crankshafts, and the other air depots have been instructed to ship all crankshafts that they are holding for regrinding to

the Fairfield Air Depot for accomplishment of this work.

Instrument Training.

In view of the increased instrument requirements and usage in the Air Corps, steps have been taken by the Training and Operations Division of the Office, Chief of the Air Corps, further to educate qualified enlisted personnel at Chanute Field in the installation, operation, inspection, and maintenance of aircraft instruments. To provide adequate test apparatus for these men, the Materiel Division has in process a project to design and procure the necessary equipment as rapidly as possible. Some items are now under procurement and will

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INSPECTION DIVISION, OFFICE OF THE CHIEF OF THE AIR CORPS

The following difficulties were reported in recent Unsatisfactory Reports:

Broken Valve Adjusting Screw and Ball Assembly No. 9514.

Pratt & Whitney Engine R-1690-11.

1. No. 9514 valve tappet adjusting screw in No. 1 exhaust cylinder broke while in flight.
2. Time on engine, approximately 35 hours. No previous overhaul time.
3. Defective part replaced and turned over to Pratt & Whitney Company's representative at Langley Field, Va.
4. Valve tappet adjusting screw fractured between locking nut and rocker arm. Cause of failure undetermined.
5. No recommendations.
6. Defective part replaced and engine continued in service.
7. Previous unsatisfactory report has been submitted on this subject.

Reply to U.R.:

The damaged adjusting screw removed at Langley Field was forwarded to the Pratt and Whitney Company by their representative, and it was found that the fracture was clean, with no signs of material defect. It is the opinion of Pratt & Whitney Company, as well as this Division, that this and other similar failures were the result of excessive tightening of the adjusting screw lock nut. It is imperative that maintenance personnel be cautioned to tighten these lock nuts singly but not excessively and under no circumstances to strike the wrench with any object, as in this manner the lock nut is pulled up too tightly, thus preloading the screw and possibly straining the part beyond its elastic limit. Current adjusting screws are fabricated with a fine thread, and since this type is believed to be considerably stronger than the former coarse thread screw it is not believed that failures will be excessive if proper care is exercised to avoid excessive tightening.

Inasmuch as this is the first failure of its kind to be reported to this Division on the late type screw No. 9514, no further ac-

tion will be taken on this report except to record the failure.

Smoke Chemicals.

Captain Kabrich of the Chemical Warfare Service visited this Division for the purpose of coordinating the Air Corps' requirements with reference to provision of equipment for the dissemination of smoke producing chemical. The conference between Captain Kabrich and members of the Engineering Section dealt both with the design features of the container and discharging apparatus and the installational features prevailing in existing Attack type airplanes.

tion will be taken on this report except to record the failure.

Defective Spark Plug Terminals, R-1820-21 Engines:

No. 33-433: Terminal Assy., Ignition wire, Hurley-Townsend Part No. 45305.

After 67 hours and 50 minutes running time the insulation broke down. Upon inspection, cracks were found in the bottom of the passage for the ignition wire. This terminal was used for the rear spark plug of No. 2 cylinder.

No. 33-466: Terminal Assy., Ignition Wire, Hurley-Townsend, Part No. 45305.

After 11 hours and 55 minutes running time the insulation broke down. Upon inspection, cracks were found in the bottom of passage for the ignition wire. This terminal was used for the rear spark plug of No. 1 cylinder.

Reply to U.R's: Considerable trouble has been experienced in the past with the ignition wire terminal assemblies Nos. 45305 and 89198 on R-1820-21 and -37 engines, due to the excessive heat around the spark plug terminal and cooler. In most cases the covering on the ignition cable at the terminal end would burn for a considerable distance, requiring replacement of the entire cable after a short period of time. In order to overcome this trouble, shielded spark plugs were procured and should have been installed on the aforementioned engines as covered in Technical Order O2-1-15.

It is requested that immediate action be taken to replace the present type of spark plugs and the ignition wire terminal assemblies with BG-4B2S spark plugs. The serviceable terminals should be returned to stock for use on other types of Wright engines.

Strainer Assy. Oil (Cuno).

There is being forwarded for examination one Cuno Oil Strainer, Part #27310. It will be noted that this assembly has been very badly mutilated by the use of improper tools when removing it from the engine. It has been noted that at least 50% of these strainers installed in engines received here for overhaul are in approximately the same condition.

It is believed and recommended that Service activities should be instructed to use only a large monkey wrench or that a spanner wrench be designed that would remove this assembly without trouble or mutilation.

Reply to U.R. The damaged cuno strainer received in connection with subject report has been examined and it is evident that this and other assemblies have been badly mutilated by service activities due to the lack of proper tools for the removal of the assemblies from the engines. According to the records of this Division, R-1820-EM engines are equipped with cuno oil strainers No. 27291. A drawing of wrench No. 82743 is enclosed. This wrench has been designed by the Wright Aeronautical Corporation for removal and installation of cuno strainer No. 27291. The manufacturer states that this wrench may be procured in small quantities at \$12.83 net and that deliveries can be made approximately three weeks after receipt of order. A quantity of these wrenches will be procured as soon as possible and distribution made according to the location of R-1820-EM engines. This includes the repair depots.

Airplane P-26A. Report failure of bracket main fuel tank support part number 3-5484 left side rear P-26A airplane Air Number 33-57.

The failure occurred in the right angle bend forward lug of the rear left bracket riveted to the longeron Boeing part number 15-2415-4.

Airplane A-10. Due to vibration of the slots during flight, and the closing and opening of the slots while landing and taking off, excessive rubbing and friction is created between the slot and leading edge of the wing, causing excessive wear of the metal in contact, the wear becoming so pronounced as to penetrate through the skin of the slots in several spots.

Recommend that a means be devised to restrict the surface of both the wing and slot from contacting each other.

Magneto VAG-9D. Subject magneto was installed in R-790-B engine aerial 28-234 which was installed in PT-3 airplane serial 28-233 and failed causing collision on ground with PT-3A airplane aerial No. 29-87. Upon inspection it was found that contact between ground contact stud and primary bridge of coil (part No. 2-3832) was defective and there was evidence of arcing at the contact point which burned off the end of the stud, taking the temper out of primary bridge at the point of contact. This precluded the grounding out of the magneto.

1. Inspection revealed the condition as stated herein. The defective magneto was transferred to the San Antonio Air Depot for repair.

2. Inspection of the following VAG-9D Magnetos disclosed the following condition:

a. Magneto #08115 removed from R-790-A Engine #28-140. The lower half of contact spring has no tension and is bent away from the upper half of primary bridge assembly, part

#2-3832. This magneto will be shipped to the San Antonio Air Depot for repair. Time since last overhaul: 123.05 hours.

b. Magnetos #071939, installed on R-790-A Engine #29-259, (Time since last overhaul: 79:10 hours) and Magneto #03016, installed on R-790-A Engine #28-176 (Time since last overhaul: 70:35 hours) have also defective primary bridge assemblies, part #2-3832, and will be replaced as soon as overhauled magnetos are available.

Finder assy. vertical view Type A-2. 073392.

Lens elements cannot be tightened or locked to insure from loosening and possible loss of front element while in flight. Vibration, against which this equipment is not protected, has been the cause of the loss of a front element at this station.

Recommendation: It is recommended that some means of locking elements in place be devised or that elements in place be devised or that elements be sealed into the barrel similar to that of the K-10 (Fairchild) camera lens.

0166676, Level, assy. Levels have been going dry due to leakage through cemented areas. Some of this equipment has never been installed and therefore it is believed not to have been caused by heat. During a period of two months six out of ten of these levels have gone dry.

Recommendation: Recommend that a more suitable cement be used.

Reply to U.R.:

No locking device is provided on either the front or rear element lens for the type A-2 view finder. These elements are set in their respective barrels very tightly and no locking device has been considered necessary. The lens element should be checked prior to flight to insure that they have not become loosened. Before future procurements are made of this type equipment, the specification will be changed to call for a locking means to be provided on the front and rear element of the lens.

In the manufacture of level vials, the sealing of the liquid is dependent upon the smoothing surface of the top coming in contact with the smooth surface of the vial cup. These are held together by the pressure retaining screw against the bottom of the vial and the top of the level seat. It may be that due to shrinkage of the packing in these vials that this pressure is lessened, causing a leakage of the liquid. This can be prevented by filling with new liquid and re-installation of the pressure screw so that it exerts sufficient pressure on the vial cup to make a perfect seal. Since this is the first Unsatisfactory Report received on this equipment, no action will be taken to redesign the vials at this time. This report will be made a matter of record, and if additional Unsatisfactory Reports are received further action will be taken.

Strut Assy. Landing Gear 'W' A.C.No. 7-788.
Strut Assy. Olco, landing gear installed on
P-12C and D airplanes. A.C. No. 8-256.

Replacement of landing gear oleo strut assemblies has been greatly hampered because the inadaptability of the oleo struts received from Air Corps supply stock and the "V" struts on the airplane.

The bolt holes in the flange on the oleo strut do not line up with the hole in the "V" strut, making it necessary to match "V" strut and oleo struts from stock as closely as possible and elongating the holes to fit.

Although a close match was found and the holes were elongated only slightly, those in stock at the Station Air Corps Supply do not match and the holes will have to be elongated beyond any degree of safety.

Recommend that the oleo strut and the "V" strut be issued in a complete assembly, or that the flange on the oleo strut be left blank so that the bolt holes may be drilled locally to fit the "V" strut on the airplane.

Reply to U.R.: Examination of drawings shows that all the attaching holes for the component parts of the landing gear side V strut assembly are jig located at assembly in order to provide for interchangeability. It is the opinion that the parts would not pass inspection if the holes were mislocated and, therefore, the possibility of a slight buckling in the fuselage members between landing gear centers is considered as an explanation of the difficulty reported. If, however, it is shown that this condition does not exist, proper corrections can be made by procuring a quantity of the terminal fittings, part No. 1-10538, without the drag strut attaching holes drilled for use by the activities when the condition reported is encountered. Further comments will be made on this unsatisfactory condition when information is secured as to the possibility of a buckling condition in the fuselage.

From the description contained in the Unsatisfactory Report, it is impossible to determine whether the trouble was encountered with the V strut assembly on or off the airplane. If the trouble in matching the holes is encountered off the airplane, the error is obviously due to mislocation of the holes at manufacture.

The following defects were noted in the type of aircraft listed during recent technical inspections:

- P-12D - Right wheel dragging.
Compass not swung with radio installed.
- P-12D - Compass not swung with radio on.
- P-12D - Rudder stop cables not functioning.
Pointer and dial assembly not synchronized with valve.
Hose clamp loose.
- P-12C - Rudder stop cables not functioning properly.
- P-12C - Rudder stop cables not adjusted properly.
- P-12C - Stabilizer position indicator not functioning.
- P-12C - Compass light not functioning.

- P-12C - Rudder stop cables not adjusted properly.
- P-12C - Left brake spring should be replaced.
- P-12C - Rudder stop cables not adjusted properly.
- P-12C - Shutter control bracket loose.
- P-12C - Pointer and dial assembly not synchronized with valve.
- P-12C - Right navigation light not functioning.
- P-12C - Propeller not oiled.
- P-12C - Cylinder fin cracked off around spark plug holes.
- P-12C - Tail skid control arm loose at bolt.
- A-3B - Technical Order No. 01-1-37 not complied with - battery drain.
Mixture control not adjusted properly.
- A-3B - Hose connection, main gasoline line, loose.
Technical Order No. 01-1-37 not complied with - battery drain.
Gasoline valve and pointer not synchronized.
- A-3B - Booster does not engage until after clutch engages.
- A-3B - Battery terminal washer improperly installed.
- O-19B - Gasoline leak at pump connection.
- O-19B - Gasoline gauge light not functioning.
Wobble pump should be changed.
- B-4 - Terminal washers installed improperly, one battery.
Gasoline tank cap chain broken.
Hose clamp loose, main gasoline line.
- B-4A - Fuselage stencilling patched over.
Primer not functioning.
Engine selective valve and pointer and dial assembly not synchronized.
Hose clamp loose, main gasoline line; connection leaking.
Compass not swung with radio on.
Throttle stop, left engine, not functioning properly.
- B-4A - Engine selector valve not satisfactory.
- PT-3 - Fire extinguisher not installed on step side of fuselage.
- PT-3 - Fire extinguisher improperly installed.
Rubber particles drained from carburetor strainer chamber.
- O-38E - Several drain grommets in the bottom of the fuselage unopened.
Inspection plate in the right lower wing not pinned.
- O-38B - Wing panels not inspected in accordance with Technical Order 01-1-12 (inspection grommets were unopened).

Under date of May 3, 1935, the Chief Signal Officer issued Signal Corps Supply Letter No. 17, pertaining to Junction Boxes, Type TM-AD-167, procured on order No. 132351 (part of Radio Set, Type SCR-AD-183).

AIR CORPS NEWS LETTER



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Information Division
Air Corps

June 15, 1935

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 AIR FORCE CRUCIBLE

THAT we should be able to employ instantly and effectively a concentrated and coordinated unit, embracing all our combat air strength in the continental United States, has been accepted by most students of air defense for many years. The general acceptance of this doctrine finally resulted in a decision to organize such a unit.

On March 1st, 1935, the headquarters of this new unit, the GHQ Air Force, began to function. This did not mean that the organization of the unit above described was completed. In fact, it was barely begun. And although much has been accomplished in the last three and a half months toward carrying forward the organization of our great "striking force" of the air, by far the greater progress has been made in visualizing the many steps that remain to be taken and the numerous problems still to be solved before we can have a completed organization - an Air Force instantly available for effective operations in any strategic area of continental United States.

The values of these two important terms are relative. What is meant by "instantly available" and "effective operations" as applied to an air force? One definition might be as stated below. To be considered "instantly available" an air unit should be able to fulfil the three following conditions:

a. Take off with all its airplanes from its home station within forty-eight hours of receipt of the order.

b. Fly to the designated concentration area at cruising speed, with minimum stop-overs for fuel and oil, at such intervals as are dictated by the range of the planes.

c. Take off to perform a normal operating mission against the enemy within twenty-four hours after arrival within the concentration area.

To "operate effectively" may be defined as being able to accomplish the assigned mission with at least the average results which either training or war experience has indicated to be practicable for the particular type of unit involved.

To reach the above objectives for

every bombardment, attack, pursuit and long range observation squadron now authorized for the GHQ Air Force presents such a variety of included objectives as to form an adequate task for a large section of the offices of the Chief of Ordnance, Chief of Engineers, Chief Signal Officer and the Quartermaster General, respectively.

The powers and limitations of the Air Force, as one experienced Air Corps officer observed, has been a frequently used term in which all the emphasis to date has been placed upon the "powers" and little or none upon the "limitations." Among the first of the powers which come to mind is mobility. And the Air Force units are truly mobile, once they are in the air with a full load of gasoline and oil and with all equipment functioning perfectly. But the limitations of mobility are suggested above. Can the planes be gotten into the air in this condition to demonstrate their mobility in a reasonable length of time? If not, the true mobility of the unit must be measured by the inclusion of the period of preparation required.

Another one of the powers of aviation which looms large is its "fire power," especially in terms of bombs. But factors limiting these powers are availability at the operating airdrome of an adequate supply of bombs of suitable sizes, presence of trained men to fuze and load these bombs ready for dropping, and of other trained personnel unerringly to conduct the airplanes to the proper release point for the bombs to hit the intended objective and to release them at such point.

A well known factor in overcoming enemy resistance is the maintaining of pressure beyond the power of the foe to overcome by the exertion of his maximum recuperative powers. Unless, therefore, the limitations of an air force permit the repetition of missions at sufficiently frequent intervals to afford the requisite amount of pressure, the powers of that air force will be largely nullified. The enemy will recuperate between blows and be able to withstand each succeeding blow.

The application and development of all these principles of operation are now a direct responsibility of the GHQ Air Force. The operating technique and doctrines to be followed by an air force

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in action against various types of objectives and in varying situations must now be formulated authoritatively and promulgated to the Air Force personnel.

Problems of organization are numerous and pressing. Of prime importance among these is a determination of the most advantageous proportions of the various classes of aviation. The "Drum Board" report of October, 1933, is the latest approved statement of the proportions of the various classes of aviation within the Air Force. The continued study of this problem is essential, since the values of the factors upon which the determination should be based are constantly changing. Some of these factors are:

1. The "fire power" or destructive effect of each class against various kinds of targets.
2. The relative supply and operating requirements of the various classes of aviation and the difficulties of meeting such requirements.
3. The relative time required to train replacement personnel to operate the various classes of airplanes.

4. The probable targets of aviation as affecting the provision of the needed amount of each class to attack such targets. In connection with this factor it may be stated that heavy bombardment, because of time for replacement factor, ammunition expenditure factor, and relative vulnerability to fire directed against the airplane itself, should not be employed against targets which can be destroyed or neutralized by smaller bombs which can be carried by lighter airplanes. Nor should long range bombers be used against targets close at hand or which can be brought to short operating ranges.

The tactics of bombardment aviation with reference to the use of short or long lines of operation, i. e., distance from home airdrome to target, offer an engrossing problem for study. Economy of effort and in the consumption of supplies dictates the use of short lines of operation as far as practicable. Security of airdromes and of the airplanes while on the airdromes indicates the use of long lines of operation, which will remove the home airdrome of the operating units to a great distance from the bases of enemy planes.

The use of short lines of operation involves, from considerations of security, the wide dispersion of units on numerous airdromes separated from each other by a number of miles. This dispersion, in turn, involves increased difficulties in control and in the supply of the units. In areas where there are insufficient airdromes it also involves delay in building the needed airdromes. However, it may be possible to have these airdromes (airports) built and ready when the need comes, providing the required cooperation is had with the

various States concerned, to the end that Federal funds allocated to them may be used in part for this purpose.

The great advantages of short lines of operation from dispersed airdromes over long lines of operation from large airdromes well in the rear may be expected to be derived from the use of ground transportation instead of air transportation for a great part of the distance involved, and the use of more easily trained ground personnel for a large volume of the work incident to the operation in lieu of the more highly trained flying personnel in the airplanes.

The first directive given to the GHQ Air Force by the War Department was the test of tentative tables of organization for the included units of the Air Force. This is a vital problem, and its correct solution is basic in establishing the ground work for success of the Air Force. The tentative tables undergoing test are a radical departure from all previous tables for Air Corps units, as well as from the present approved tables of all other arms of the Service. As such they will require the careful analysis and test of actual practice which it is always advisable to give to something so entirely new, and at the same time so vital to successful operations in war.

Only one of these new tables will be considered, that for the Service Squadron. The table for the Service Squadron provides for one hundred and ninety enlisted men in the various grades and ratings, and possessing the various specialist qualifications needed to perform the varied duties falling upon this unit. These duties include for the present, in the absence of any other provision for taking care of them, everything concerned with the operation of three combat squadrons in the field except the actual airdrome servicing and maintenance of the airplanes and their operation in flight. The original concept was that these service squadrons would be interchangeable for any class of unit. This has now been modified, due to the hopelessness of training replacements in war time qualified to handle the widely differing duties connected with servicing any one of the different classes of aviation. Another consideration was the great variation in the work load as between servicing three heavy bombardment squadrons and three single place pursuit squadrons. The table as originally prepared did not provide three identical sections, one for each tactical squadron for a condition where each of the three tactical squadrons served is located on a different airdrome under a situation requiring a dispersed operating basis. In addition there probably will be required a self-service section to take care of the headquarters and administra-

tive personnel of the service squadron itself.

It is believed the above is sufficient to indicate the extent and complexity of the problems facing the GHQ Air Force. The War Department appears to be alive to these problems and to the need for affording every possible aid to the Air Force in order that wise solutions may be reached. One of these aids has been given by the War Department in according rank commensurate with the duties performed. The insignia of this new rank is in the Air Force Crucible along with the wonderful ingredients - youth, energy and opportunity. We shall all await with kindest interest and best wishes for success the product which shall emerge.

Meanwhile, a few catalytics for the boiling pot may be offered. What does the United States desire its military airplanes to do?

The National Defense Act and other legislation indicates that it is the will of the Congress that our military policy shall be one of impregnable defense. It may be assumed with assurance, therefore, that our military planes should be able to protect us from possible enemy airplanes. To harm us seriously, hostile airplanes, flying from a final land base, must fly over many miles of our own relatively unimportant territory in which there are no remunerative targets, in order to reach vital objectives. If our own airplanes operate from advanced airdromes they will be able to employ much shorter lines of operation than the hostile planes.

From dispersed airdromes close up to our land frontier, our airplanes can reach the enemy planes on the ground at the base from which they make their final take-off to attack remunerative targets at considerable distances within the interior of our country. To destroy airplanes on the ground does not require heavy bombs. Light bombers with the necessary range (which can be half or less than half of the enemy bombers) may be reasonably expected successfully to stop enemy air attacks by destroying the hostile airplanes on

the ground.

In the case of an attack from the sea, the hostile airplanes must base on aircraft carriers. The limitations of carrier take-off preclude the use of especially heavy bombers, and hence of especially long range bombers. Therefore, to make the airplane attacks, the hostile carriers must come fairly close to shore and at time of take-off and landing of their planes will be well within the reach of light bombers, which need carry only very light bombs to destroy hostile planes on the carrier decks or to put the deck itself out of commission.

Airplanes operating from land bases against carrier-based airplanes have the following advantages over the latter:

a) They can take off and land in formations as against single ship take-offs and landings, affording a tremendous saving in the time factor.

b. Their flying fields are far less vulnerable to damage than flying decks, and they can have alternate flying fields to use in case primary fields are damaged.

c. If defeated, they can withdraw and disperse to numerous landing fields, while if carrier-based planes are defeated in the air, they face annihilation on the carrier or capture if they land in hostile territory.

d. Their opportunities for information are greater, due to more numerous observation points.

Their disadvantages lie in the ability of the carrier-based planes to select their time of attack, which is known to them and unknown to the shore-based airplanes; and the position of the carrier is movable while that of the targets of its airplanes is fixed.

The Air Force Crucible must melt all conflicting tactical doctrines and methods into one integrated whole. The doctrines must be adapted to the purposes for which the Air Force has been created.

Truly this is a difficult task, which should enlist the earnest aid of all concerned in reaching a correct solution.

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7TH BOMBARDMENT GROUP IN WAR MANEUVERS

Brigadier-General Henry H. Arnold, Air Corps, Commander of the First Wing, GHQ Air Force, inspected the war maneuvers of the 7th Bombardment Group as it sweltered in heat which registered 80 degrees in the shade of their tents.

Dispersion and concentration problems occupied the time of the flying personnel each morning. Extreme secrecy cloaked the point of concentration, which was given out by radio by Lieut.-Colonel Clarence L. Tinker, Commanding Officer of the Group, from his command plane, the Bird O'Prey. Then, as the message was transmitted to the 9th Bombardment Squadron at Mills Field, San Francisco; the 11th at Stockton, and the 31st at Suisun, all flew to the focal point at different rates of speed so as to arrive there at the same time. One of the concentrations was held over beautiful Lake Tahoe.

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SACRAMENTO CORDIALLY GREETES ARMY AIRMEN

Hamilton Field personnel are highly appreciative of the enthusiastic reception accorded them by the civilian population of Sacramento on the occasion of the recent field maneuvers over Mather Field, which is 11 miles distant from that city.

Lieut.-Colonel Clarence L. Tinker, formerly commanding the 20th Pursuit Group at Mather Field, has many friends among the townspeople. Many of them expressed the hope that Mather Field might again become a permanent Air Corps post.

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DISTRESSING ACCIDENT DURING MANEUVERS

Death rode in the air with the 7th Bombardment Group from Hamilton Field as it engaged in war maneuvers under the leadership of Lieut.-Colonel C.L. Tinker, with Mather Field as a base, during the period from May 20th to May 30th, last.

Second Lieutenant Edgar W. Root, Air Reserve, plunged to death about 15 miles west of Mt. Whitney in Clover Creek, which is in the vicinity of Sequoia National Park. He was piloting a Martin Bomber over which he lost control, and dropped 14,000 feet in a spiral spin. The plane struck a tree and burst into flames. Those who succumbed, in addition to the pilot, were Private, 1st Class, Guy F. Porter, radio operator; and Messrs. A.P. Alexander and Lewis S. Tappan, Fox Movie reel cameramen.

Lieut. Root and Private Porter were members of the 31st Bombardment Squadron, and with 15 other Bombers were flying over Mt. Whitney, the highest

point within the continental limits of the United States, in a war problem.

Only a few months ago, Lieut. Root married Miss Maxine Duffy, whom he had met as a cadet in San Antonio, Texas. At the time of the accident she was living in the quarters assigned this couple at Hamilton Field. Mrs. Root took the remains of her husband to the home of his father, Mr. V.S. Root, at Huntsville, Alabama.

Lieut. Root graduated in 1928 from the Alabama Polytechnic Institute. Appointed a flying cadet, he graduated from the Air Corps Training Center in 1934. He received his commission as a second lieutenant in the Air Reserve on February 28, 1935.

Private Porter is survived by a sister, Mrs. Stella Buck, of Eddyville, Nebraska, to whom the remains were shipped for burial. He was a veteran radio operator with 12 years of service in the Army.

Major Harold D. Smith, commanding the 31st Bombardment Squadron, and an eye witness of the accident, stated that he believed the rear controls of the Bomber were jammed by one of the news reel men falling against them.

Messrs. Alexander and Tappan, Fox technicians, were veterans in the news reel field. At one time they were engaged in taking air photographs in the Orient. They were widely known in movie news reel circles.

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AERIAL SURVEY OF FORT BRAGG RESERVATION

The Second Photo Section, Langley Field, Va., has just completed an aerial survey of the Fort Bragg Reservation for the Corps of Engineers. This survey was made with a 5-lens mapping camera at an altitude of 20,000 feet. This is an unusually high altitude for aerial mapping, and it necessitated the use of oxygen breathing apparatus by the pilot and photographer. At an altitude of 20,000 feet the camera used in this survey will photograph an area of 428.49 square miles with one exposure.

An aerial survey of the territory from Hampton Roads, Va., to the Neuse River, North Carolina, is in process at the present time, being made for the Coast and Geodetic Survey, who will use the photographs to establish intermediate control points between their known control points, thus eliminating the necessity of detailed survey by the ground survey party.

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Representative Wilcox's bill, authorizing the construction of strategic air bases to provide peace-time training for the Air Force and war-time defense against invasion, passed the House of Representatives on June 5th.

Not a single amendment was proposed to this measure as it was sent to the Senate.

ITEMS FROM AIR FORCE BULLETINS

The following items have been published to the personnel of the GHQ Air Force from time to time through the medium of Air Force Bulletins issued by the Air Force Headquarters:

The realization that the Air Corps was not organized to permit the use in war of its tremendous striking power to the best advantage led the War Department to create the GHQ Air Force. Under this organization, the tactical command of the Air Force units, formerly divided among the various Corps Area Commanders, is now centralized under the Commanding General, The General Headquarters Air Force. Its war mission will be to conduct offensive air operations against enemy air, ground and sea forces. The execution of these operations will require, according to circumstances, independent air missions or missions in conjunction with friendly ground or naval forces. The functions of the Chief of the Air Corps remain substantially as heretofore.

The GHQ Air Force Strongly Supported.

The GHQ Air Force has the whole power and authority of the War Department behind it. The Chief of Staff, appearing before the proper committees of Congress, has urged that funds be appropriated to procure the full number of 2320 airplanes and corollary accessory equipment recommended by the Special War Department Committee headed by the Hon. Newton D. Baker, the war-time Secretary of War. He has also asked for additional regular officers, enlisted men, Reserve officers and flying cadets. Congress and the President appear sympathetic, and real progress seems to be in sight.

The Concept of the GHQ Air Force.

The whole concept underlying the GHQ Air Force is that of a highly mobile force of great striking power. Like any of the Four Armies, it is directly under the Chief of Staff in time of peace and under the Commander of the Field Forces in time of war. All plans, equipment and training will be based upon the concept of mobility. More and more flying will be expected of the GHQ Air Force units. Field exercises and maneuvers will be held more often, but the actual number of airplanes will be small for some time to come. It will require time for these plans to reach their maximum application, for we are not only short of airplanes and accessory equipment, but also of personnel.

GHQ AIR FORCE AN M DAY FORCE

The GHQ Air Force has been created upon the principle that it shall be an M-day force, immediately ready upon the outbreak of war to execute its mission of defense. Some of the reasons for this concept are:

a. Much time is required to train its personnel.

b. Even more time is required to construct bases and to build its airplanes and corollary equipment.

c. Airplanes are fragile. In storage they deteriorate in physical structure and become obsolete even more rapidly than in use. It is thus impracticable to create a war reserve of airplanes.

Equipment and Unit Training Needed.

An airplane without all of its equipment and a complete crew of trained men should not go to war. For example, a Bombardment Group of 44 modern airplanes, fully equipped, manned and trained, is of more value than several times this number of obsolescent types, partially equipped and manned by partially trained men.

It cannot be overemphasized that the object of all planning and training in the GHQ Air Force is to create a powerful, highly mobile striking force ready at all times for immediate action on M day. It has accordingly been decided that as new airplanes are received, one squadron or group at a time will be brought up to effective strength, rather than allot a few airplanes to each. It will thus be necessary for those units not selected to receive new airplanes to be patient and make the best of what they have. Unit rather than individual training will henceforth be stressed. For example, it is planned that the annual gunnery and bombing matches, to begin in the fall of 1936, will be in the nature of a competition between selected squadrons instead of between individuals.

Measures to Increase Mobility.

Combat squadrons have been skinned to the bone. The functions of service squadrons have been enlarged and station complements have been created, all with a view to increasing the mobility of the combat units. The creation of station complements has long been urged by Air Corps officers to permit the utilization of skilled enlisted men for their proper work on the line, in the shop and in the office. Station complements and service squadrons constitute a vital element of the great combat organization they are designed to serve. All commissioned and enlisted members of the service squadrons and station complements must realize that without them a mobile GHQ Air Force could not exist.

Enlisted Men.

The creation of the GHQ Air Force has caused a shortage of enlisted personnel at its various stations and an unsatisfactory distribution of grades and ratings. The Air Corps share of the forthcoming increase in the enlisted strength of the Army will partially relieve the shortage. Studies are being made to relieve the unequal distribution of grades and ratings, it being proposed to assign a high percentage of air mechanics rat-

ings to the combat squadrons and a consequently high percentage of specialist ratings to the service squadrons and station complements. In order to permit everyone to have an equal opportunity to follow the line of work he desires, recruits will normally be assigned to the station complement. Here during their processing period and subsequent service they can determine, within reasonable limits, as to whether they desire to take up office work, outdoor work, technical or combat work. As opportunity arises they will be available as replacements in service and combat squadrons.

Temporary Promotion.

To remedy a situation until recently existing in the Air Corps, under which officers performed duties calling for

higher rank, the War Department placed in effect the temporary promotion system authorized by the Air Corps Act of 1926. This scheme, like many reorganizational features of the GHQ Air Force, is under service test. The policy of rotation of officers into and out of the GHQ Air Force, to foreign service, to the various establishments under the Chief of the Air Corps, to school duty, and to the War Department, Corps Area and Department Staffs will be continued. In this way, some officers now enjoying temporary rank will lose it when the nature of their assignment changes, and others not now possessing temporary rank will receive it.

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TRANSCONTINENTAL FERRY FLIGHTS

A six-plane flight to California on a ferry mission recently returned to Langley Field. Major C.V. Haynes was in command, and was accompanied by Captains H.W. Dorr, A.L. Harvey, C.G. Goodrich, Thomas Power and 1st Lieut. O.S. Picner. P-12C airplanes were ferried to March Field, where P-26A's were procured and ferried to Barksdale Field. At the last named field the flight procured P-12F's and proceeded to Langley Field.

One of the outstanding incidents of the flight was the forced landing of Captain Goodrich. When about 50 miles from Tucson, Arizona, he was forced to land in the mountains when his main tank refused to take. After rolling down a mountainside in a ball of what had previously been an airplane, he started walking. He emerged from the desert some hours later at Mescal, Arizona, with

a skinned nose and a horned toad.

Langley Field welcomes home its first qualified and rated "Desert Rat." The horned toad is behaving admirably and upholding the honor of his flight companions in his Langley Field home.

The flight was held over at El Paso, Texas, for three days on account of weather.

A second flight to March Field was dedicated to disproving the theory that airplanes are the fastest means of transportation. Captains B.J. Peaslee, R.E. Wilson, Lieuts. S.C. Ross, B.E. Nelson and B.S. Harrell took eight days getting to March Field. They encountered headwinds all the way, some as high as 50 miles per hour, dust storms, fog and engine trouble. Eventually, however, all reached Selfridge Field and from there returned to Langley Field by transport.

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ADVANCED FLYING CLASS IN READINESS TO GRADUATE

Training for the present class of student officers and flying cadets at the Advanced Flying School, Kelly Field, Texas, is almost completed, and the graduation date has been set for June 22nd. The Chief of the Air Corps has been invited to make the graduation address to the students, and the News Letter Correspondent expresses the hope that the General will find time to attend the exercises.

On May 25th, the average flying time of each student of this class since he came to Kelly Field was 101 hours and 30 minutes, which leaves about 30 hours to go. All sections have completed their student maintenance air navigation flights except one-half of the Pursuit Section. These flights are usually made from Kelly Field to Fort Sill, Oklahoma; thence to El Paso, Texas, and return to Kelly Field. Different routes are followed by the various sections.

The present class began with five Regular Army officers, one foreign officer, and sixty-four flying cadets. These were divided into sections, as follows: Attack, 10 students; Bombardment, 22; Observation, 20; Pursuit, 18. With the exception of one flying cadet, who was killed in an airplane accident, all of this class will graduate.

The new class of students for the Advanced Flying School will arrive on July 1, 1935, and will consist of approximately the following: 33 Regular Army officers; 34 flying cadets, and 3 foreign officers, two of whom are 1st Lieutenants in the Turkish Army and one a 1st Lieutenant in the Mexican Army. These students will be divided into sections, as follows: Attack, 14; Bombardment, 22; Observation, 14; Pursuit, 20.

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The 20th Bomb. Squadron, Langley Field, recently visited the plant of the United Aircraft Corporation at Hartford, Conn.

V-6800, A.C.

LAYMEN'S VIEWS ON THE G.H.Q. AIR FORCE

Let us give the General Headquarters Air Force a year in which to make good! Having passed the first quarter of its one-year test period, some ideas can be formed as to whether this new scheme of organization is likely to survive, whether it is practicable and possesses sufficient merit to warrant its adoption permanently.

It must be admitted, however, that three months is hardly a sufficient period of time to warrant passing judgment on a new organization which had no precedent in this country. Possibly a year may not be sufficient time in which to arrive at any definite conclusion as to whether it fits in properly with our military organization.

To digress for a moment. Let us take the British Air Ministry as an example. Great Britain was the first nation to create a separate air force. The Air Ministry was organized during the World War under the stress of extreme necessity. It is true that considerable opposition was directed toward it by both Army and Navy leaders, but the many air raids over London and other English communities brought matters to a head. There was an outcry against the divided responsibility existing over the air forces of Great Britain and a demand for their unification which could not be disregarded. And now, despite the fact that the British Air Ministry is in its eighth year, one notices now and then rumblings of dissatisfaction and discontent and a demand for the old order of things.

It may be assumed, without any fear of contradiction, that the framers of the organization of the GHQ Air Force were not wholly satisfied in their own minds that it was a letter perfect organization. They realized no doubt that flaws therein would be discovered as time went on but, in all probability, they felt that these flaws would eventually be ironed out. It is quite likely that the thought that this new organization would be just feeling its way was a factor which led to the decision to give it a temporary status for the period of one year.

A military air organization is a complex problem at best. Aviation has revolutionized warfare. Prior to the World War, there were no military air tactics to speak of. These tactics were evolved and developed in the years during and following the War. There is this difference

in the situation confronting military aviation which can be hardly claimed to exist to any appreciable extent in other branches of a military establishment. Aviation is subject to constant change. Other combat weapons are subject to change also, but it is generally a gradual one. Aviation is always confronted with the possibility that the modern airplane of to-day may be obsolete in a few weeks. The statement is often heard or seen in print that aviation is still in its infancy. In the light of the startling achievements in aviation in recent years, there seems to be considerable truth in that statement. Take, for instance, one example in air tactics, - Pursuit versus Bombardment. Not so long ago the Pursuit airplane flew circles around the then lumbering Bomber. But what a change has taken place! The Bomber can no longer be placed in the "slow freight" class, and it is almost a match in speed for the fast little Pursuiter. What is the result? Air strategists are now scratching their heads to evolve new tactics to keep the bomber in its proper place or, perhaps, they are commencing to feel dubious as to the future of Pursuit aviation.

What are the views of the civilian, the layman, on the organization of the G.H.Q. Air Force? They are deeply interested in aviation, because it presents to them a popular appeal. Aviation has been constantly in the public eye ever since the Wright Brothers made their first flights at Kitty Hawk, N.C., 32 years ago.

When this country entered the World War, and an immense appropriation was made by Congress for aviation, there were fanciful cartoons in the newspapers depicting American airplanes darkening the skies over the enemy country. But our people soon learned that an aviation industry which did not exist can not be built up overnight, as it were; that it takes time to build airplanes as well as to train pilots.

Following the close of the War, the impetus which aviation received as the outcome of that conflict directed the genius of man toward making bigger, better and faster airplanes. As the years went on, the airplane not only became increasingly reliable, but progressed quickly in speed, range and load-carrying capacity. It began to dawn upon military men and civilians alike that the airplane was destined to play a very prominent role in wars to come; that aviation would revolutionize future conflicts between nations; that a nation weak in air power could hardly hope to cope successfully in a struggle with an

enemy well fortified in that respect.

Why the GHQ Air Force? The American citizen no doubt feels that the military authorities of this nation, alive to the potentiality of the airplane as a combat weapon, have taken steps to solidify the Army Air Corps into an organization lending itself to extreme mobility and the utilization of its striking power to the utmost.

Opinions gathered from civilians touching on the creation of the GHQ Air Force lead to the conclusion that they believe its basic purpose is sound, namely, that ease and rapidity of concentration at any given locality in this country are salient points which make the scheme well worth while.

Civilians - feature writers and others who have written books on military aviation - appear to be convinced that the air arm will figure most conspicuously in future wars, particularly in the initial stages thereof. They quote the old axiom that he who strikes the first blow is more apt to be the victor; they contend that aviation is an offensive arm and they have applied to aviation the theory held by some football coaches to the effect that the best form of defense is offense.

As an offensive arm, they believe that aviation must have perfect teamwork, and that air personnel must be trained to maximum efficiency; that an air force must possess the ability to strike instantly and effectively. They have reached the conclusion that the primary mission of an air force is to keep the enemy out of the air; that aircraft is the best defense against aerial attack; and that failure to defeat the enemy air force renders the defending nation powerless to ward off attacks from the air. They have visualized the consequences following such failure to check enemy aerial aggression. Writers have painted word pictures of these consequences in a manner to cause serious thought and considerable uneasiness. Some writers have painted lurid pictures of the havoc which would be wrought upon civilian populations were the enemy to acquire supremacy of the air and proceed unimpeded in its work of dealing death and destruction through aerial bombs and poisonous chemicals.

Statements have appeared in the European press expressing the thought that little or no faith can be placed in the ability of an air force successfully to defend a nation against aerial attack, the contention being that space is so vast that attempts to intercept enemy aircraft would meet with little or no success, particularly in night operations. As a solution to the problem the policy of retaliation is advocated. To the lay mind this would lead

to the conclusion that the Bombing airplane is destined to be the reigning type, thus placing other types of combat airplanes in the supporting class.

American citizens who have given serious thought to this question, believe that such a policy of retaliation, while possibly applicable in Europe, where powerful nations border upon one another, could hardly be accepted in this country, bounded as it is by two wide oceans. There appears to be no intention on their part to discount in any way the present or future range of aircraft, but they can hardly conceive the idea that this country, if subjected to enemy air attack, would hazard sending its airplanes across these vast stretches of water on a mission of retaliation. Thus, they are of the firm belief that effective air defense for the United States hinges on the ability of its air force to keep the enemy out of the air over our own territory, as before stated.

Statements have been frequently noted to the effect that the pilots in the U. S. Army are the best trained in the world. No one appears to have contradicted this. It has also been stated that what the Army Air Corps lacks in quantity it makes up partly in quality. Those who have taken up the aviation question seriously shake their heads in doubt, being alive to the realization that a nation cannot rest secure under such a state of affairs; that a skeleton air force, even though the airplanes are the most modern in the world and the pilots most efficiently trained, is a mighty slender reed upon which to lean.

Whether the GHQ Air Force will become a fixture in our National Defense scheme or whether the American air arm will assume some other form of organization does not seem to concern the lay mind as much as the one word which places the whole situation in a nut shell - RESULTS! The layman believes that, regardless of the form of administration under which the American air force will eventually operate, the all-important essential in our effort to promote national defense is to have the proper kind and the necessary amount of tools with which to work - airplanes and pilots. He has read the oft reiterated statements to the effect that the GHQ Air Force has not the requisite number of airplanes to enable it to function properly, and he likens this situation to that of a liner without propellers or a battleship without guns.

A QUESTION OF PAY FOR OFFICERS TEMPORARILY PROMOTED

Upon the organization of the GHQ Air Force, a Captain of the Air Corps was temporarily promoted to the rank of lieutenant-colonel. This officer enlisted in the Aviation Section, Signal Corps, during the World War; completed his flying training; received appointment as 1st Lieutenant; was subsequently promoted to Captain and, on July 1, 1920, was appointed Captain in the Air Service, Regular Army.

At the end of March, 1935, the officer submitted a voucher, constituting his claim for the difference between the pay of the fourth period and fifth period, from March 2 to 31, while assigned to duty under his temporary increased rank under the provisions of Section 3 of the Act of July 2, 1926, 44 Stat. 782.

Uncertain as to whether he had the authority to make payment on this claim, the Finance Officer of the post referred the matter to the Comptroller General of the United States for decision.

The Comptroller General, after citing Section 3 of the Act above referred to, which authorizes the Secretary of War to assign officers of the Air Corps to various commands and other duties carrying therewith increased rank, including pay and allowances appropriate to such rank, and Circular No. 7, War Department, January 25, 1935, prescribing regulations governing the bestowal of temporary rank for Air Corps officers, also cited Section 1 of the Act of June 10, 1922, 42 Stat. 625, providing:

"The pay of the fifth period shall be paid to * * * lieutenant colonels of the Army * * * who have completed twenty years' service, or whose first appointment in the permanent service was in a grade above that corresponding to captain in the Army, or who were appointed to the Regular Army under the provisions of the first sentence of said Section 24; Act of June 3, 1916, as amended by the Act of June 4, 1920 * * * .

"The pay of the fourth period shall be paid to lieutenant colonels of the Army * * * who are not entitled to the pay of the fifth or sixth period. *** "

The first sentence of Sec. 24, Act of June 3, 1916, as amended by the Act of June 4, 1920, is as follows:

"Sec. 24. Filling of vacancies. - Not less than one-half of the total number of vacancies caused by this Act, exclusive of those in the Medical Department and among chaplains, shall be filled by the appointment, to date from July 1, 1920, and subject to such examination as the President may prescribe, of persons other than officers of the Regular Army who served as officers of the United States Army at any time between April 6, 1917, and the date of the passage of this Act."

The Comptroller General goes on to say: "The act of July 2, 1926, cited, provides that the assignment by the Secretary of War of officers of the Air Corps to flying commands shall carry temporary rank 'including pay and allowances appropriate to such rank.' The regulations fix the rank for the duties assigned in this case as lieutenant colonel. The base pay of lieutenant colonel may be in any one of three pay periods, not based on any standard of efficiency, but by reason of length of service or circumstances of entering the service. An officer holding the rank of lieutenant colonel is entitled to base pay of the sixth period if he has completed thirty years' service; to pay of the fifth period (1) if he has completed twenty years' service, (2) if his first appointment in the permanent service was in a grade above that corresponding to captain in the Army, or (3) if appointed to the Regular Army under the provisions of the first sentence of section 24 of the National Defense Act; and to pay of the fourth period if not within the conditions prescribed for the fifth or sixth period. The service record of this officer shows that his first appointment in the Regular Army was in the grade of captain and that he has completed less than 20 years' service. It would appear, however, that he was appointed to the Regular Army under the provisions of the first sentence of section 24 of the National Defense Act. Such statute provided that not less than one-half of the total number of vacancies created thereby should be filled, subject to such examination as the President may prescribe by persons other than officers of the Regular Army who served as officers of the United States during the World War. While claimant's original appointment was in the rank of captain, it nevertheless, was made under the provisions of section 24 of the cited act, and the placing of lieutenant colonels who entered the Regular Army in that manner, in the fifth period without regard to length of service, would appear to have as its purpose the placing of him more nearly on a parity with officers of the regular service who normally would benefit by reason of a longer period of service. See House Report 926, part 2, 67th Congress, 2nd Session, pages 7 and 8. There appears nothing which would limit the application of this exception to officers originally appointed in the rank of lieutenant colonel. Indeed, if it were applicable only to officers who were appointed to the Regular Army under the first sentence of section 24 of the National Defense Act, as amended, June 4, 1920, in the rank of lieutenant colonel the provision would be superfluous as the officer would have been appointed

to the regular Army as a lieutenant colonel - a grade above that of captain and he would be entitled to fifth period pay under that exception. The provision therefore is clearly applicable to officers who entered the service in a lower rank and were thereafter advanced pursu-

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EFFICIENCY RATINGS OF AIR CORPS OFFICERS

A comparative study recently made showing the percentages of officers rated as Superior, Excellent, Average and Below Average in the various branches of the Army shows that the Air Corps had the smallest percentage of any branch in the "Superior" and "Excellent" categories, and by far the largest percentage of Average officers. The implications of this comparison are obvious. Air Corps officers have evidently rated on a basis of a much broader knowledge of the whole personnel of the Air Corps than has been the case with rating of officers of other branches. This is easily understood, due to the fact that by means of cross-country flying and frequent assemblies of Air Corps officers from many different stations, Air Corps officers in general are very well acquainted with the accomplishments of a large number of the officers of their branch.

That the Air Corps ratings have been more nearly in accord with the theory of the rating system is shown by the fact that for the other branches considerably more than 50% of the total number of officers were rated either "Excellent" or "Superior." This lends point to the expression frequently heard

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GOVERNMENT OF SAN SALVADOR PLEASED WITH VISIT OF ARMY AIRMEN

A squadron of two Bombing and seven Observation planes from France Field, Panama Canal Zone, under the command of Lieut.-Colonel Lewis H. Brereton, Air Corps, recently visited San Salvador, Republic of Salvador, and were favorably received by the officials of the Republic and others. The visiting Army airmen attended a number of social functions given in their honor, one of them being a reception at the Presidential Palace, where the President of the Republic received them with his entire cabinet and sub-cabinet. There were also present about 50 Salvadoran officers, two from each regiment. All of these social functions were attended by the Salvadoran Minister of War and other high officials of the government.

In a letter to the Secretary of State reporting upon the visit of the Army airmen, the Hon. Frank P. Corrigan, American Minister to Salvador, comments most favorably on their conduct during their stay, stating that their behavior

ant to law to the rank of lieutenant colonel. Accordingly, you are advised that claimant's rank and service shows him to be entitled to pay of the fifth period, and payment is authorized on the voucher returned herewith, if otherwise correct."

in connection with rating, "What constitutes an Average officer?"

There are at least two important respects in which the rating of Air Corps officers is working out unfortunately. First, in comparing Air Corps officers with officers of other branches for general details, the Air Corps officer is at a disadvantage. In the second place, officers are not considered eligible for Special Service Schools of the Air Corps. This is due to the fact that the Air Corps has adopted the policy of other branches with a more liberal rating experience and requires that an Air Corps officer to be eligible for the Tactical School must have a rating of above Average.

This latter objection can, of course, be met by changing the policy with respect to the admission of Air Corps officers to the Special Service Schools. However, the former disadvantage cannot be cured by any other method than a more liberal attitude on the part of rating officers. It is true, on the other hand, that this disadvantage is more apparent than real, as there are relatively few Air Corps officers being considered along with officers of other branches for details outside the Air Corps.

has been creditable and that they have made a highly favorable impression on the Salvadoran officials and the people with whom they have come in contact. He concludes his letter as follows:

"I believe that that this visit has been favorably received here. Colonel Brereton, through the President and the Minister of War, has invited the Salvadoran Air Force to visit France Field on a return visit of courtesy. The Minister of War accepted and said that he would at a convenient time send a squadron of five Salvadoran airplanes to France Field. A splendid impression was created in governmental circles by this visit, and much credit is due to Colonel Brereton and the officers who comprised the detail.

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A very interesting radio test, utilizing both code and voice, was recently conducted by Lieut. G.I. Rhoades, Air Res., Barksdale Field, La. Report on this test will no doubt be issued to the service.

ATMOSPHERE STERILE AT HIGH ALTITUDE

For the first time in aviation history a test was conducted at an altitude above 20,000 feet to determine whether any bacteria are present in the upper air regions. The highest altitude reached was 28,000 feet. Cultures had never before been taken at this height, and in that sense the flight constituted a record.

A Baltimore physician engaged in bacteriological research work received the approval of the War Department to make a flight in a Martin Bomber to conduct this test. He exposed a total of 12 plates in the rarefied atmosphere, the first one at 19,000 feet and the others at intervals of 1,000 feet until 28,000 feet was reached. Two plates were exposed between 26,000 and 27,000 feet. Ten of the plates showed no presence of bacteria. One plate exposed at 24,000 and another at 26,000 feet each showed one colony of Staphylococcus, surely a contamination.

In his letter of appreciation to the Chief of Staff, in which he embodied a report on the results of this bacteriological test, the physician stated that the difficulty he encountered and which interfered very materially with carrying out the technique was the extreme cold. It was necessary for him to wear a pair of sterile, thin rubber gloves and to open and expose the plates to fresh and uncontaminated air outside of the plane. This necessitated putting both hands through the machine gunner's opening, unprotected from a high wind and cold. It was planned to expose the plates for one minute, but it was not possible to hold them longer than half a minute. Two of his fingers were rather severely frost-bitten. He states he began using oxygen at 21,000 feet and did not experience any embarrassment of respiration at any time.

"I do not think that the work was done with sufficient accuracy to claim the establishment of any new facts," the physician concluded, "but it surely indicates that the atmosphere above 20,000 feet is sterile."

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NEW WORLD'S RECORDS ESTABLISHED

The President of the Transcontinental and Western Air, Inc., Mr. Jack Frye, in a recent letter expressed the appreciation felt by his company for the aid and cooperation given by the Army Air Corps in supplying two-way radio communication between their DC-1 and Bolling Field, D.C. and Willoughby Spit, Norfolk, Va., during the closed course record flights on May 18th last.

As a result of these flights, 19 new American and International speed and load records were established by D.W. Tomlinson and Joseph Bartels. The DC-1 is a giant Douglas monoplane, powered with two 715 h.p. Wright "Cyclone" engines. At present this plane also holds the transcontinental transport speed record.

The two airmen flew 2,000 kilometers, or 1,244 miles, in 6 hours and 30 minutes and 34 seconds, or at an average speed of 190.906 miles an hour, carrying a pay load of 2,000 kilograms, which equals 4,410 pounds.

On the second lap of the triangular course from Floyd Bennett Field, Brooklyn, N.Y., to Bolling Field to Norfolk, and back to Floyd Bennett Field, a slightly better time was made than on the first lap, averaging 191.674 miles an hour. The course covered two laps.

When the plane was brought over Floyd Bennett Field at the end of the first lap of the 621-mile closed course, six new records had been established, the remaining 13 records being accomplished at the conclusion of the second lap.

It was the second record-breaking flight made by Tomlinson and Bartels within a week. Flying the same airplane on May 16th, they established 14 records over the same course. On the 18th, they smashed three existing world's records and nine American and five international marks they set previously. In addition, they established American records for which there had been no previous marks.

But to return to Mr. Frye's letter. After remarking that Captain Murriner in Washington was most helpful to TWA personnel in making the necessary arrangements, he goes on to say:

"The success of the whole undertaking hinged on the ability of the DC-1 crew to maintain uninterrupted two way radio telephone communication with the theodolite observers at each turning point. These flights made history in that for the first time a closed course was being flown at high altitude. Only because the flight crew could advise the observer on each approach to a turn of the plane's altitude and true bearing from the turning point was it possible for the observing party to pick up the plane, follow it through the theodolite telescope, and inform the pilot of the plane's angular elevation.

Communication with the Army station at Bolling Field and Willoughby Spit was perfect. Particularly on the 5,000 kilometer flight, when inclement weather caused abandonment of the last lap in favor of a short course around New York, the radio saved the day. Without the two-way radio facilities it would have been impossible for the crew of the plane to have advised the ground personnel of conditions and arranged for a change of the course.

Please express to all of your person-

nel who so kindly and efficiently rendered us this service the appreciation felt by the entire Transcontinental & Western Air organization.

Whenever you, or any of your officers, may find occasion to stop at Kansas City, I sincerely trust that you, or they, will give TWA an opportunity to express in a more concrete manner the debt of gratitude we feel toward the Army Air Corps."

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TWO CATERPILLAR DEGREES IN SHORT ORDER

Lee Gehlbach, a former 2nd Lieutenant in the Army Air Corps, who several years ago was stationed with the 1st Pursuit Group at Selfridge Field, Mich., seems to be the only member of the Caterpillar Club to have two degrees conferred upon him in rapid succession. An item in the June issue of U.S. AIR SERVICES with regard to Gehlbach's two initiations into the Caterpillar Club is as follows:

"Lee Gehlbach is a pilot who embodies just about all the characteristics that go to make what women writers of verse call a birdman, characteristics that make the real flyers of today a separate and distinct species of the human race. About two months ago, a man of Gehlbach's own stamina, courage and experience - Jimmy Collins - was killed when attempting to meet the Navy requirements for terminal velocity dive and pull-out while testing a Grumman airplane over Long Island. The plane was a total wreck, and it is understood that the manufacturers had no insurance on it. Gehlbach was hired to put a sister Grumman ship through its paces. While flying the plane in a spin test, starting at 12,500 feet altitude, Gehlbach found he could not get the plane to come out of it and, after making more than fifty spins, he was successful in saving his valuable neck and other parts by taking to his parachute at 2,000 feet, over the Navy proving ground at Dahlgren, Va., on Friday afternoon, May 17th.

Just before going to Virginia, Gehlbach stopped over at Cleveland, Ohio, to put a Great Lakes plane through the tests required by the Navy before it could be delivered. The details of the two tests were wholly dissimilar, but the final results of the operations, from the personal viewpoint of the pilot, were not unlike. In each case he survived by a hair's breadth. In each case he took to his parachute at the last possible foot of altitude, and the plane was wrecked. In each case, Gehlbach stayed with the plane - first with the Great Lakes product, then with the Grumman - until there was nothing to do except jump for his life."

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WORLD FLIGHT LEADER COMES TO WASHINGTON

Captain Lowell H. Smith, Air Corps, who led the historic flight of U.S. Army

aviators around the world in 1924, has been ordered to duty in the Office of the Chief of the Air Corps, Washington, D.C. Captain Smith is at present a student at the Command and General Staff School, Fort Leavenworth, Kansas. In his new assignment he will have charge of the technical inspection of all the aircraft in the Army, being assisted by four regional supervisors and a corps of inspectors at Air Corps depots.

Of the Army officers who completed the first aerial journey around the world in 1924, Captain Smith is the only one remaining in the military service, the others having resigned from the Army. For his achievement of the flight, Captain Smith was awarded the Distinguished Service Medal. He also holds the Distinguished Flying Cross. He is a graduate of the Air Corps Tactical School and is a member of this year's graduating class of the Command and General Staff School.

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"COYOTE" AERIAL GUNNERY

By the News Letter Correspondent

Englishmen have their fox hunts, but they haven't enjoyed nuthin' unless they have participated in "coyote" aerial gunnery.

"Coyote" aerial gunnery is the discovery of the 41st Division Aviation, Washington National Guard, Spokane. Necessary to this highly entertaining form of gunnery training are the wide open spaces in certain sections of the sagebrush-covered northwest in which the grey bushy tail and slim-nosed coyotes roam.

This form of training has been found highly beneficial to officers of the 41st Division Aviation in preparing for their fire for aerial gunnery records during the two weeks' encampment of the 41st Division in June at Fort Lewis and Camp Murray, American Lake.

Flying reasonably low over the sagebrush plains, it is not difficult to "jump up" a coyote who, as he races through the sagebrush, becomes a lively observation target for observers and pilots. Flying down on the coyote, the pilots are given good training in ground gunnery with the camera guns. As the roar of the motor grows louder the coyote doubles his speed, until it appears he believes the airplane is on his back. At this time the "chicken stealer" rares up, shows his fangs and immediately begins turning in various directions until the plane is pulled up.

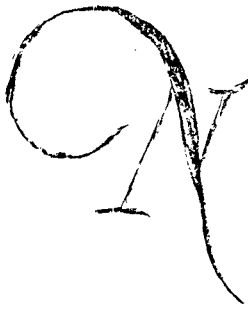
Contrary to the general belief, it is almost impossible to run a coyote to death with an airplane, because after each dive the coyote is smart enough to rest as he dog-trots along.

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"THE G.H.Q. WHAT WILL IT DO?"

By

B. Q. Jones, Major, Air Corps.



NEGLECTING for the moment the problem of close support of the ground forces, there remains the encompassing speculation of the national concept of Air Force employment.

Give a man a gun with no target and he will probably wonder what he will do with the gun. Give a man one

target and he will know definitely one use for his gun. But if you give guns to feudist neighbors, no doubt exists as to the prime use of the guns.

Europe with one-fifth the area, a population density almost eight to one of the U.S. and divided among four major nations, provides the Air Forces of England, France, Germany and Italy with definite targets within "local flying" distances of their airdromes. These age old feudists have armed themselves with a new weapon, bombardment aviation, primed for use against each other's homes and territories.

We have no suspicious neighbors. We have no hereditary foes. We have no use for our military except as the trusted weapon of a good citizen of the family of nations to be brought out in national emergencies imposed upon us by the slow evolution of domestic and international affairs.

The geographical position and congestion of European nations fixes their Air Force employment. Their peace time air base locations are suitable for war base operations against innumerable profitable war time targets. There exists no need for Air Force mobility by self-sufficient units operating in many theaters over wide territorial expanses from varied, scattered and hastily prepared airdromes. Their employment is static. They must "dig in" in peace to be secure in war. Their problems of movement, communications and supply can be solved in peace. Their strategic and logistic plans can be consummated at leisure and projected to completion long before the period of strained relations.

Our national temper is but a composite of our typical square-shooting American business man, whose all consuming, earnest attention to the progress of his affairs blinds him to the threat of gangdom. His old family revolver, hidden from his children in a remote top drawer, will protect him, he feels, should his home be invaded.

We, the armed services, are America's good old trusted revolver, laid away in peace, but always guarded and protected from too rigorous inroads by radicalism.

The great American citizen is, in his spare time, sufficiently interested in us to bring us out to view occasionally and polish us up a bit. And when he needs us, he is most unsparing in his attention and support.

In opposition to Europe, we have no belligerent neighbors. And, if we ever did have trouble with them, we would most assuredly hang back on the employment of any weapon that might jeopardize the lives and beings of their defenseless women and children. America doesn't wage war that way. So here we are, all dressed up with the beginnings of a most promising Air Force and quite uncertain in our minds what we'll do with it.

We're quite fed up with any thought of fighting other people's wars, so we cannot project ourselves into a European conception of employment of Air Forces. We have no proximate targets for our bombardment, so we conjure visions of cooperating with our Navy in sinking hostile navies approaching our shores. But, like true Americans, our Navy staunchly asserts they will hold our enemies well off our shores. With our Air Force in being, our second line of coast defense is our bombers; our third line, our seacoast defenses; our final defense, our army in being.

Our concept of employment of G.H.Q. Air Forces must be our own. We can be attentive to and profit by foreign developments in the technique of equipment and employment. We can most assuredly profit by their developments in communications, intelligence nets and warning systems, for communications are as vital to us as to them.

Granting that we lack the concreteness of European doctrines, we can appraise the fundamentals of Air Force as a weapon of war and adapt them to the peculiarities of our national temperament and geography.

Offensively, the airplane can be a terrible weapon, but we shrink from the concept of its general employment against area targets and their defenseless populations. Specific military targets will be presented to test the metal of our units, especially if the targets are defended.

Defensively, air forces are as vital to the success of the general operations as artillery is to the defense of a position.

Our geographical expanse, measured by European standards, is staggering. Our population centers and critical areas are distributed as spotted focii at considerable intervals. Our areas are large, our forces are small. We must cover a lot with a little.

We know a lot and we have learned a

lot about combat aviation. But if we are to be consistent, we must show progress in the art of military aviation commensurate with our claims of rapid change and progress in the powers of the airplane and its equipment.

We know what we can do. We can state our problem. We can prescribe our training. Their synthesis tells us what the G.H.Q. will do.

We in the Air Corps know pretty definitely what our attack, bombardment, observation and pursuit can do. We know how they can be trained to work together, when they can operate to best advantage and when they cannot. Other considerations being equal, we know that to the leader who most intelligently and ably treats logistics goes the greatest success.

What is our problem?

While we cannot, like the Europeans, point indisputably to concrete targets, we can name the targets we can profitably attack. Our operations, therefore, will be broad and versatile.

Our theater is far flung, extending literally thousands of miles. No conceivable peace strength can provide adequately for all localities. We must be prepared to operate here today and there tomorrow. Mobility in its purest form is tantamount.

Divorced as the ground forces are of all but observation aviation, we must be

prepared to render close tactical support to any theater on short notice, only perhaps, to be pulled out unexpectedly for a strategic blow in another and distant theater. Mobility! Versatility! and Strategic Employment! A true GHQ reserve! A "Hat in the Ring" Force fighting in a squared-circle of continental proportions.

A veritable air Navy! In garrison for rest periods, reequipment and for indoctrination and training of new personnel. Then out and over the U. S. as individuals, units and as an Air Force perfecting the technique of movement, operations, communications and supply through a succession of exercises, alone and in cooperation with the ground forces in varied and scattered theaters within our continental limits.

So, what are our Air Force missions?

To move anywhere at any time.

To maintain shelter and subsist itself.

To afford close tactical support to the army.

To afford shore-based support to the Navy.

To defend our critical areas.

To search out and attack profitable targets.

Like our Navy, what we lack at the zero hour, we'll lack for months.

OUR G.H.Q. MUST COME THRU!!!

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HIGH ALTITUDE FLYING BY WASHINGTON NATIONAL GUARD AIRMEN

Officers of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane, are believed to have just completed a flying record superior to any other National Guard squadron in the country.

On June 10th, the squadron pilots completed flying the "weather hops" for the Department of Agriculture, after having started making these flights on July 19, 1934, during which time only 16 cancellations were made.

The flights, which averaged 16,000 feet altitude, were made voluntarily by the pilots, and without pay. During practically the entire time, the pilots took off about midnight, and landed about 80 minutes later. The total fly-

ing time was about 455 hours, 15 minutes.

The airplane used was a Douglas O-38E, equipped with an SCR-134 radio set, which made possible cloud and blind flying training. In every instance, except one, the pilots found it possible to return to Felts Field. In the exception, a storm blew in on Felts Field, making it necessary for the weather ship to land at Pasco for an overnight stay.

Ten weather flights were called off on account of all airplanes being on cross-country flights to Tennessee and Florida. Three cancellations were made by the Weather Bureau due to a broken aerometeorograph instrument, and three other cancellations were made because of bad weather.

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The many friends of Mrs. Horace Meek Hickam will be interested in learning that she is now residing at Mitchel Field, Hempstead, L.I., N.Y. It was with especial gratification that Air Corps personnel read of the action of the War Department in naming the important new tactical Air Corps field in Oahu "Hickam Field," in honor of her deceased husband. Funds in the amount of ten million dollars have been made available for the construction

of Hickam Field.

The Chief of the Air Corps is furnishing Mrs. Hickam with an engrossed copy of this War Department order, and with a copy of the proceedings of the Board of officers on the matter.

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The House of Representatives recently passed a measure to fill up the Air Corps to authorized strength by authorizing the President to commission graduates of the Air Corps Training Center.

B I O G R A P H I E S

BRIGADIER-GENERAL FRANK M. ANDREWS ✓

Brigadier-General Frank M. Andrews, Commanding General of the GHQ Air Force, was born in Hashville, Tenn., February 3, 1884. He graduated from the United States Military Academy in June, 1906, commissioned a second lieutenant and assigned to the 8th Cavalry. He also served as first lieutenant and captain with the 2nd and 18th Cavalry regiments prior to his detail in the Aviation Section, Signal Corps, in September, 1917. He accepted a commission as Major, Signal Corps (temp.) on September 22, 1917.

Following a period of duty, from September 26, 1917, to April 26, 1918, in the Air Division, Office of the Chief Signal Officer, Washington, D.C., he was assigned to the Flying School at Rockwell Field, San Diego, Calif., for duty as a student.

Completing his flying training in July, 1918, and receiving the rating of Junior Military Aviator on the 19th of that month, General Andrews was transferred to Arcadia, Florida, and placed in command of Carlstrom and Dorr Fields. In October, 1918, he was assigned to duty as District Supervisor of the Southeastern Air Service District. He was promoted Lieut.-Colonel, Signal Corps (temp.) February 8, 1918.

From March, 1919, to August, 1920, General Andrews was on duty in the Office of the Director of Air Service, Washington, D.C., where he served as Chief of the Inspection Division, as a member of the Advisory Board, and as a member of the War Plans Division of the General Staff.

Transferred to Germany for duty with the American Forces, General Andrews served as Executive Officer and as Officer in Charge of Civil Affairs until March 1, 1923, when he was returned to duty in the Office of the Chief of Air Service.

In June, 1923, General Andrews was transferred to Kelly Field, San Antonio, Texas, and served as Post Executive Officer until July 15, 1925. He was then appointed Commanding Officer of the 10th School Group. He also served as Assistant Commandant and Commandant of the Advanced Flying School at that station until September 1, 1927, when he was transferred to Langley Field, Va., for duty as student at the Air Corps Tactical School.

Following his graduation from the Tactical School in June, 1928, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1929, he was assigned to duty in the Office of the Chief of the Air Corps in Washington as Executive Officer of the Training and Operations Division. He was appointed Chief of that Division on January 7, 1930, and Executive, Office of the Chief of the Air Corps, on May 27, 1931.

He was promoted to Lieutenant-Colonel (permanent list) on January 13, 1930.

General Andrews received commendations for his excellent work as Chief of Staff of the Provisional Wing during the Field Exercises of the Air Corps in the State of California in 1930, and for the efficient manner in which he commanded a flight from San Antonio, Texas, to France Field, Panama Canal Zone, in 1932. He received a decoration from the Italian government for assisting the flight of the Italian Air Armada to the United States in 1933.

General Andrews graduated from the Army War College in 1933, and was ordered to Selfridge Field, Michigan, as Commanding Officer. On October 9, 1934, he was ordered to duty with the War Department General Staff.

In January, 1935, he was designated Commanding General, G.H.Q. Air Force, and he assumed command thereof with the temporary rank of Brigadier General on March 1, 1935.

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COLONEL HUGH J. KNERR, AIR CORPS

Colonel Hugh J. Knerr, Air Corps, Chief of Staff of the GHQ Air Force, was born at Fairfield, Iowa, May 30, 1887. After graduating from high school, he received an appointment to the United States Naval Academy, graduating therefrom in June, 1908. During the period of three years and four months he served as a commissioned officer in the Navy, he was on duty a portion of the time as Chief Engineer of the U.S. Destroyer FLUSSER. He was also a member of the U.S. Navy Rifle Team.

Transferred to the Coast Artillery Corps, U.S. Army, as a second lieutenant, on November 8, 1911, he was promot-

ed 1st Lieutenant on July 1, 1916; Captain, May 15, 1917, and Major, January 15, 1918.

On August 2, 1917, Colonel Knerr was transferred at his own request to the Aviation Section of the Signal Corps, and was placed on duty as a student at the Aviation School at Rockwell Field, San Diego, Calif. Upon the completion of his flying training he was rated a Junior Military Aviator as of December 13, 1917.

From February to June, 1918, Colonel Knerr served at Park Field, Millington, Tenn., as Officer in Charge of Cross-Country and Acrobatic Flying, also as

Chief Engineer Officer. During June and July, 1918, he served as Chief Engineer Officer at Gerstner Field, Lake Charles, Louisiana.

Transferred to duty in Hawaii, he was assigned to the command of the 6th Aero Squadron and Luke Field, T.H. He also served as Department Air Service Officer and Disbursing Officer during his tour in that insular possession from August, 1918, to May of the following year.

Relieved from detail to the Air Service, Colonel Knerr returned to the Coast Artillery Corps and served at Fort Barrancas, Florida, until February, 1922, when he was re-detailed to the Air Service and assigned to pursue a refresher course in flying at the Primary Flying School at Carlstrom Field, Arcadia, Fla. Following his graduation from that school, he completed the course at the Advanced Flying School at Kelly Field, Texas, graduating December 18, 1922, and receiving the rating of "Airplane Pilot."

From February, 1923, to August, 1925, Colonel Knerr was on duty at the Fairfield, Ohio, Air Intermediate Depot as Commanding Officer of the 38th Observation Squadron. His next assignment was that of student officer at the Air Corps Tactical School at Langley Field, Va. He graduated from this School in June, 1926, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1927.

Colonel Knerr was assigned as Commanding Officer of the 2nd Bombardment Group at Langley Field, Va., on July 1, 1927. On several occasions he led this Group on long-distance cross-country flights, the most notable of which was the one to Los Angeles, Calif., and return in September, 1928. He also played a prominent part in Air Corps maneuvers held in different years during the period he was in command of the above-named organization.

Assigned as a student at the Army War College, Washington, D.C., in August, 1930, he graduated therefrom in June of the following year, and was then assigned to duty at the Materiel Division at Wright Field, Dayton, Ohio, as Chief of the Field Service Section, a position he occupied until his appointment on March 1, 1935, as Chief of Staff of the GHQ Air Force, with the temporary rank of Colonel.

During April and May, 1933, Colonel Knerr participated in the Antiaircraft - Army Air Corps Exercises in Ohio and adjoining States. He was a member of the Air Corps Expedition of ten B-10 Martin Bombers which flew from Washington, D.C. to Fairbanks, Alaska, and return, July - August, 1934. Colonel Knerr piloted one of the Bombers and was flight commander of the second of the three flights into which this Expedition to America's most northern possession was organized.

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WASHINGTON GUARDSMEN NOW RADIO EQUIPPED

All airplanes of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane, are now equipped with two-way radio communication.

This was made possible by delivery of five new type sets, four of which are the SCR-AA-185 airplane sets, and one SCR-AA-146 ground station set. The airplane sets were installed in three O-38E's and one O-38, under the direction of 1st Lieut. Charles O. Holter, while the two old SCR-134 sets were installed in O-38B's.

The installation of the sets was completed at this writing and before the officers and men had received lectures on the operation of the new equipment.

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DR. AMES PRESENTED THE LANGLEY MEDAL

On May 21st, at the invitation of the regents and Secretary of the Smithsonian Institution, Brigadier-General A. W. Robins, Majors E.M. Powers, J.G. Taylor and Captain H.Z. Bogert, Air Corps, and Theodore dePort, aircraft engineer, were present at the presentation by the Chancellor, Chief Justice Hughes, of the Langley Medal for Aeronautics to Dr. Joseph S. Ames, Chairman of the National Advisory Committee for Aeronautics.

CONGRATULATIONS TO DEPARTMENT OF JUSTICE

The personnel of the Air Corps salute their brothers in arms in the Department of Justice and the various State and Municipal forces concerned for their splendid work against public enemies more insidious in their attacks than any foreign foe could be. The promptness with which two principals in the Weyerhaeuser abduction gang were run to earth and captured, and the third identified and closely pursued, reflects the greatest credit upon these splendid guardians of our homes and families.

We congratulate you - men of action! May every success attend your further efforts.

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A Civilian Conservation Corps worker, Robert Flylik, of Tyndall, S.D., suffering from double pneumonia, probably owes his life to the assistance of Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, who interrupted their stratosphere flight preparations to send four cylinders of compressed oxygen to the Hot Springs Veterans' Administration Hospital in answer to the call of physicians for oxygen. After the patient received the oxygen treatment his temperature dropped and physicians said he was improving.

V-6800, A.C.

TEMPORARY PROMOTION OF AIR CORPS OFFICERS

To Major

Captain John E. Upston assigned as commander, Headquarters Squadron, GHQ Air Force, Langley Field, June 12, 1935.

Captain Charles P. Prime assigned as commander, 1st Bombardment Squadron, Mitchel Field, N.Y., June 7, 1935.

Captain Barney Giles assigned as Intelligence and Operations Officer, 2nd Bombardment Group, Langley Field, June 12, 1935.

To Captain

1st Lieut. Lilburn D. Fator assigned as Flight Commander, 2nd Obs. Squadron, Nichols Field, P.I., June 4, 1935.

To 1st Lieutenant

2nd Lieut. Thetus C. Odom assigned to command of 2nd Photo Section, Langley Field, Va. June 7, 1935.

OFFICERS RELIEVED FROM TEMPORARY RANK

Captain Milton J. Smith, from Brooks Field, Texas, July 5, 1935, to Schoen Field, Fort Benjamin Harrison, Ind.

Lieut.-Colonel Harold M. McClelland and Captain Donald D. FitzGerald, from Rockwell Field; Majors W.C. Morris and Ira C. Eaker, from March Field, July 26, 1935, to Air Corps Tactical School, Maxwell Field, Ala.

Captain Stewart W. Towle, Jr., from duty with 21st Obs. Squadron, Bolling Field D.C., June 5, 1935, to Office Chief of Air Corps.

Major Hugh C. Downey, from Mitchel Field, N.Y., June 26, 1935, to Air Corps Training Center, Randolph Field, Texas.

The following changes were made in the assignment of officers temporarily promoted, these officers retaining temporary rank:

Major Earle J. Carpenter from commander, 1st Bomb. Squadron, to Supply Officer, Station Complement, Mitchel Field, N.Y.

Captain August W. Kissner from 66th Service Squadron to Engineer and Armament Officer, 4th Composite Group, Nichols Field, P.I.

Captain George W. Mundy from 2nd Observation Squadron to Engineer Officer, 66th Service Squadron, Nichols Field, P.I.

CHANGES OF STATION: To Office of the Chief of Air Corps, Washington: Colonel Chalmers G. Hall, from duty with Organized Reserves, 2nd Corps Area, Newark N.J. - Major Leslie MacDill, from Bolling Field, D.C. - Major Rosenham Beam from duty as Instructor, Cavalry School, Fort Riley, Kansas. - Captain Lowell H. Smith, upon completion of course of instruction at Command and General Staff School at Fort Leavenworth, Kansas.

To Langley Field, Va.: Captain John R. Drumm from Kelly Field. - 2nd Lieuts. John E. Barr and Joseph B. Zimmerman from Philippines.

To Maxwell Field, Ala.: 1st Lieut. Marion Huggins, from duty with Flight B, 16th Obs. Squadron, Ft. Benning, Ga. - 1st Lieut.

Clayton E. Hughes, 2nd Lieuts. John B. Ackerman and Edward J. Hale, from Advanced Flying School, Kelly Field. - Captain Peter E. Skanse, upon completion of course of instruction at Air Corps Tactical School. - Captain Levi L. Beery, Maxwell Field, for duty as student at Tactical School, that station.

To Randolph Field, Texas: Captain Mark R. Woodward from Langley Field to duty at Air Corps Training Center.

To Brooks Field, Texas: Captain John C. Kennedy, from Crissy Field, Calif.

To Bolling Field, D.C.: 1st Lieut. William A. Matheny. Previous orders revoked.

To Chanute Field, Ill.: 1st Lieut. John J. Keough, from Advanced Flying School, Kelly Field.

To Barksdale Field, La.: Captain LeRoy A. Walthall, from duty with Organized Reserves, 9th Corps Area, San Francisco, Calif.

To Scott Field, Ill.: 1st Lieut. Haynie McCormick, from Fort Sill, Okla.

To Fort Riley, Kansas: Major Howard J. Houghland, Langley Field, for duty as Instructor at Cavalry School.

To Chicago, Ill.: Captain Charles Douglas, from Tactical School, Maxwell Field, to duty as Instructor, A.C., Illinois National Guard.

To Los Angeles, Calif.: Captain Philip Schneberger for duty as A.C. Procurement Planning Representative, Fourth Zone, from similar duty at San Francisco District.

To Hawaiian Department: Captain Charles E. Branshaw from A.C. Tactical School, Maxwell Field. - 1st Lieuts. Donald D. Arnold, Robert E.L. Pirtle and 2nd Lt. Daniel A. Cooper from Signal School, Fort Monmouth, N.J.

To Panama Canal Department: 1st Lieut. Frederick W. Ott and 2nd Lt. John A. Feagin, from Signal School, Fort Monmouth, N.J.

To Philippines: 1st Lieut. Edward H. Porter from Signal School, Fort Monmouth, N.J.

PROMOTION: To 1st Lieut., rank May 17, 1935 - 2nd Lieut. Thomas L. Thurlow.

RETIREMENT: 1st Lieut. Eyrle G. Johnson, May 31, 1935; 1st Lieut. Robert M. Kraft, May 31, 1935.

RELIEVED FROM DETAIL TO AIR CORPS: 2nd Lt. Eugene H. Cloud, to 25th Infantry, Fort Huachuca, Arizona.

TRANSFERRED TO AIR CORPS: 2nd Lieut. Lawrence B. Kelley, Field Artillery, rank from June 13, 1933.

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Master Sergeant Frank G. Bilker, 61st Service Squadron, Mitchel Field, N.Y., was appointed a Warrant Officer, Regular Army, June 1, 1935. He remains on duty at Mitchel Field.

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On June 11, 1935, Captain Cornelius W. Cousland, Air Corps, was relieved from assignment, duty and temporary rank with the Panama Air Depot, France Field, and ordered to report to the Commanding General, Panama Canal Department for duty with Air Corps and to Governor of Panama Canal for additional duty.

British Royal Air Force

The control of the Royal Air Force is vested in the Crown.

The Secretary of State for Air, the Marquess of Londonderry, is the head of the Air Ministry and President of the Air Council, and is charged with control over military aviation and over civil aviation through his Director-General of Civil Aviation. Military Aviation is separate and distinct from the Army and Navy, the Air Ministry holding a coordinate rank with Admiralty and the War Office.

There are no units actually allocated to the Army. The Army Cooperation Squadrons work with the Army on call.

The Fleet Air Arm is that part of the Royal Air Force allocated to the Navy. In general, the Fleet Air Arm is trained and controlled by the Royal Air Force when on land. When on ships or carriers, the units of the Fleet Air Arm are under naval control. Approximately 70% of the pilots and all observers in the Fleet Air Arm are drawn from naval personnel.

The Royal Air Force at present consists of:

Home Defense Force	43	Sqdns.
Army Cooperation Squadrons (home)	5	"
Flying Boat Squadrons (home)	5	"
Communications Squadrons (home)	1	"
Foreign Stations	24	"
Fleet Air Arm	16	"
Total - - - -	94	"

The Branches of the R.A.F. include the General Duties Branch, the Accounting, Medical, Legal and Chaplains Branches.

The General Duties Branch is the combat organization and consists of personnel (commissioned and enlisted) for combat duty. There are approximately 2700 pilots in the Royal Air Force, of which about 400 are enlisted pilots.

The Squadron is the basic tactical unit. Higher organization contemplates the Wing and Group. The Group consists of two or more Wings, and the Wing, two or more Squadrons. None of the higher organizations are at home at present, but in India there are one Group and three Wings.

A considerable expansion of the R.A.F. is contemplated for the near future to meet changed conditions in Europe.

France

The Air Ministry. The Air Forces are under the authority of the Air Minister. The Minister is advised by the Supreme Air Council and is assisted by the Inspector-General of the Air Forces, who is the Vice President of the Supreme Air Council; by the Chief of the General Air Staff, and by the heads of the various military Directorates of the Central Air Administration.

The Air Ministry has both a civil and military character. It includes: the Minister's

Cabinet, the General Staff of the Air Forces, the Directorate of Air Materiel, the Directorate of Military Personnel, of Air Administration Audit, and of Construction.

The Air Army. The military aviation is called the "Air Army," and is divided into three categories; that operating directly under the Air Minister (about 1/5), that attached for work with the army (about 4/5) and the squadrons detached for service with the Navy.

Territorially, it is distributed among three air regions in France and a region in North Africa, with units detached for service in the colonies.

The formations include: Air Forces in the home country, in Northern Africa and the theatres of operation abroad and Colonial Aviation.

Troops:

Aviation - a varying number of squadrons, which are organized into groups, wings and brigades, attached in principle to an air base - mobilization centers.

Lighter-than-Air - a varying number of lighter-than-air companies organized into battalions and half brigades.

Strength - Officers, 2,127; men 29,800; materiel, approximately 3,500 planes of all types, combat, training, school, etc.

Italian Air Force

The air force comprises all the military air forces of Italy and her colonies.

The supreme authority responsible for the discipline and technical and administrative organization of the air units and establishments serving the general needs of the Royal Air Force is the Air Minister, who exercises his powers through his central organs, through the Chief of the Air Staff and through the commanders of the territorial air zones.

The Regia Aeronautica is organized into the Aeronautical Arm, Engineering Corps and the Commissariat Corps.

The combat forces of the Regia Aeronautica, which includes all military aircraft, are as follows: Aerial Army, Aerial Units assigned to the Army, Aerial Units assigned to the Navy, and Colonial Aviation.

The basic tactical unit is a squadron, two or more of which form a wing; two or more wings, a group; two or more groups an aerial brigade; two or more brigades an aerial division; two or more divisions form the Aerial Fleet or Air Force.

The squadrons of each class of aviation in the Regia Aeronautica are as follows:

Pursuit	-	35	squadrons
Reconnaissance	-	38	squadrons
Bombardment	-	34	squadrons

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NOTES FROM AIR CORPS FIELDS

Hamilton Field, Calif., June 5th

Captain Carlyle H. Ridenour became a Major on May 29th, taking over the duties of Major R.P. Reese as Operations Officer, 7th Bombardment Group. Major Reese was assigned as Commander of the 68th Service Squadron, relieving Major Guy Kirksey, now functioning as Station Inspector.

Recent War Department orders also conferred on Captain Delmar E. Dunton and 1st Lieut. Frederick L. Anderson the temporary grades of major and captain, respectively. Capt. Anderson was recently awarded the Distinguished Flying Cross for remaining in a burning plane while flying over San Francisco long enough to insure it crashing into San Francisco Bay, thereby avoiding possible loss of life and damage to property. He jumped with his parachute and was rescued by Navy personnel. He will soon be officially decorated with the medal by the Corps Area Air Officer, acting as representative of Major-General Paul B. Malone, 9th Corps Area Commander.

Pvt. William W. Smith, Station Complement, was recommended for West Point. To show his scholastic ability, he will first attend the West Point Preparatory School at the Presidio, from which he may go to the Military Academy should he, in competition with other applicants at this preparatory course, demonstrate sufficient proficiency.

1st Lieut. Edward W. Swarcz, group adjutant, watched the speed of a fast airplane against death as he flew to the bedside of his father, who was reported critically ill.

St. Sgt. Axel Bishop, formerly mess sergeant at the Station Hospital, was promoted warrant officer and assigned as assistant to the Air Corps Supply Officer.

Major John M. Davies, Commander of the 9th Bomb. Squadron, is now on two months leave of absence. Captain Donald J. Keirn temporarily assuming command.

Majors Robert C. Murphy, Lewis R.P. Reese and 1st Lieut. Richard T. King acted as board to investigate the causes of the death of 2nd Lieut. Edgar W. Root and Pvt. 1 cl. Guy F. Porter.

Major Robert C. Murphy, flight surgeon, spoke on the "Significance of Memorial Day" before the high school assembly at San Rafael on May 29th. At their civic program on Memorial Day, he read Lincoln's Gettysburg Address.

Wing maneuvers are scheduled for June 17-20, according to a report at this station. The municipal airport at Mines Field, Los

Angeles, has been indicated as the rendezvous. The squadron maneuvers of the 11th Bombardment Squadron, which were originally set for June 10th, have been postponed until June 24th, so that the wing maneuvers can be carried out. Major Arthur G. Hamilton, leader of the 11th, expects to fly on the latter date with 13 planes and 13 pilots to service-test his organization with war strength equipment and planes.

A plaque in honor of Captain Howard B. Nurse, construction quartermaster at Hamilton Field, was placed in the Officers' Club at Hamilton Field. Should Capt. Nurse be detailed to Hawaii on the contemplated \$11,000,000 project, the plaque will remain here as a memorial to his services.

St. Sgts. Dominic Dennis and George S. Kreitz sailed for Honolulu June 11th for a tour of service in the Hawaiian Department.

St. Sgt. Harry Kramer, Station Complement, functions as the personnel sergeant major at Hamilton Field. His assistant is Corporal J.J. Moran.

The post library at Hamilton Field under the guidance of Chaplain Stanley J. Reilly is represented with the works of the great writers of literature, Scott, Dickens, Twain and John L. Stoddard. The latest count showed over 1,070 volumes. Pvt. Jack W. Miller, 69th Service Squadron, is the librarian.

The senior classes in the Ross Grammar School visited here last Saturday, 34 children taking delight in the huge bombers of the 31st Bombardment Squadron as Master Sgt. Thomas Rendles and Sgt. Lewis explained their intricacies.

San Antonio Air Depot, Duncan Field, Texas.

The monthly Control Area supply and engineering conference at this Depot was held on June 4, with an attendance of 25, including visiting personnel and representatives from the Air Corps stations in this Control Area.

Messrs. Wm. Ewing, Chief, Aircraft Maintenance & Supply Branch, W.F. Longletz, Chief, Engine Maintenance & Supply Branch, Field Service Section, Materiel Division, Wright Field, Ohio, were visitors here May 29 to June 4, on temporary duty tour of various Air Corps activities through the West to confer on field problems and conditions.

The S.A.A.D. Baseball Team, under the coaching of Major R.V. Ignico and the management of Mr. Julius Glau, is forging ahead in its effort to keep up with our record in this field in former years. The team is now runner-up for the championship of the six-team City

Major League of San Antonio, holding second place and but half a game behind the leading team.

Lieuts. (J.G.) J.V. Peterson (pilot) and Morrison and Lieuts. (J.G.) N.F. Garton (pilot) and J.W. Boundy, U.S. Navy, flying two Naval Land Scout planes, visited this Depot May 22-24, en route from the Naval Air Station, Pensacola, Fla., to San Diego, Calif., on a tour of various Government and civil aircraft engineering establishments.

Major John Van O. Weaver, Air-Res., San Antonio, began a 14-day active duty tour at the Depot, beginning June 3d. Major Weaver is Sales Engineer for the General Electric Company, and is active in civil aviation affairs. This is his third tour at this Depot.

Major S.F. Landers and Captains A.C. Kincaid, S.M. Umstead, and L.J. Maitland, accompanied by Staff Sgt. S.P. Riales, Sgt. Wm. A. Stryker, and Pvt. AM2cl. J.R. Cross as mechanics, of Maxwell Field, Ala., flew one B-4, two B-4A's, and a C-14 transport in to the Depot May 30, for overhaul of the B-4's, returning June 2d in the transport.

Captain J.T. Morris, Engineer Officer, accompanied by Mr. E.G. Lupton, Shop Superintendent, of the Rockwell Air Depot, Coronado, Calif., arrived at this Depot June 1st on an extensive air tour of the Air Depots and certain aircraft factories in the East, to confer on shop methods and new equipment.

Fort Sill, Oklahoma, June 4, 1935.

During the past two weeks rain has dampened activities at Post Field to a very marked degree. Routine missions with the Field Artillery School and War Department Training Missions were carried out when the weather permitted.

On May 21st and 27th, Student Observation Flights from Kelly Field visited Fort Sill, and on June 1st a Student Bombardment Flight arrived.

The Air Corps baseball team has won six, lost none, and has two remaining games to play. If Sgt. Igmandson can perform the "Iron Man" act and win these two and two out of three in the championship series, the Staff Troops Trophy is in the bag.

Langley Field, Va., June 4th.

The BT-2B airplanes formerly utilized in the Instrument Flying Section have been assigned to tactical organizations. They are averaging 7 flying hours per day.

Among the higher record bombers this month are Captain Dale D. Fisher with a score of 1943 out of a possible 2000. Captains T.S. Power, William Bentley and Lieut. W.B. Inman were in the high 18 hundreds.

Lieut. Col. W.R. Weaver, Chief Inspector, G.H.Q. Air Force, inspected the 2d Bombardment Group in all phases of its activities. Tactical missions, including squadron bombing, were performed.

Flying Cadet Scott was transferred at his own request to Barksdale Field, La.

41st Division Aviation, Washington Nat'l Guard.

Six Douglas Observation airplanes were scheduled to leave Felts Field, Spokane, at 5:30 a.m. June 10th, to participate for the first time in division aviation training with National Guard troops from Washington, Oregon and Idaho, commanded by Adjutant General White, of Oregon, Division Commander. It will be the first division camp since the organization of the 41st Division Aviation. More than 6,000 Guardsmen from the three States will be encamped for two weeks.

An elaborate training schedule with other arms of the service has been planned by the Division Aviation, commanded by Major Robin A. Day, Air Corps. Captain Gardner, Instructor attached to the Air Corps Reserve, Boeing Field, Seattle, is slated to be air officer on the staff of General White. Captain E.B. Bayley, Instructor attached to the California National Guard Squadron, will be Inspector. Captain Gardner will fly one of the California squadron planes to Fort Lewis, for use by the 41st Division Aviation, which will have seven ships for the camp.

An operations schedule has been approved by Major Day which will keep all airplanes in the air from 7:00 a.m. to 5:00 p.m. Practically every pilot going to camp will have flown 180 hours so far this fiscal year, and it is believed the general average will be more than 205 hours by the time camp ends.

Troops of the Division Aviation were scheduled to entrain for camp at 8:00 p.m., June 9th and to arrive at the Fort Lewis airdrome at 9:00 a.m., June 10th, the squadron formation across the State reaching camp at the same time.

Aerial gunnery missions, front and rear gun firing for record on the tow target will start at 1:00 p.m., on the first day of camp. An hour's flight from Fort Lewis to Illwaco, on the Pacific Coast, is necessary to reach the range. Tow target gunnery will continue for six days, with two flights each day, until all pilots and observers have fired.

Ground target firing for record will start the second week of camp, with the target located on the Fort Lewis airdrome. Both front and rear guns will be fired on the ground target.

In order to insure the Division Aviation having plenty of cooperative missions of all kinds, letters were sent to commanders of all other arms of the services several weeks ago, asking that the Division Aviation be definitely included in their schedules. As a result, several problems will be conducted in artillery fire adjustment. Practically every day there will be observation, communications and photographic missions with the two Infantry regiments.

Cars from the motor transport section will provide the transportation for the Division Aviation bivouac, to be held at Chehalis,

V-6800, A.C.

Wash., about 40 miles distant from the Fort Lewis airdrome. All flying equipment and the ground radio station will be taken to the Chehalis Municipal Airport, where Captain Bayley will conduct his field inspection of personnel.

From bivouac, all airplanes will leave Chehalis on June 14th on a cross-country flight to San Diego, returning to Fort Lewis on Sunday, June 16th. Seven airplanes will be in the squadron formation, which will spend Saturday night, June 15th, at Hamilton Field.

The real problem of the camp will start on Thursday, June 20th, when all troops of the Division will enter the field for the Division problem. The advance troops will start at 3:30 a.m., when the Division Aviation will start its observation, and will continue on the alert until Friday night, June 21st, when the problem ends.

Ground forces will move into position for their attack under the cover of darkness. Both the Blue and Red forces will have airplanes assigned for night observation. In the operations headquarters, a situation map will be kept up to the minute, and all pilots and observers making complete reports after each mission.

The Review by Governors - there will be three - from Washington, Idaho and Oregon, will take place on Sunday, June 23rd, on the Fort Lewis parade ground.

Details have been worked out where all airplanes will be available for flying every day from 7:00 a.m. to 5:00 p.m. Regular checks will be made by crews after the flying has been completed each day.

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Under special orders of the War Department, just issued, two boards of Air Corps officers were appointed, to meet at the call of the president thereof at Wright Field, Dayton, Ohio, on a date to be set by the Chief of the Air Corps Materiel Division, the first board to appraise the designs submitted for bombardment airplanes and the second to appraise the designs submitted for single and two-seater pursuit airplanes.

Officers designated on the first board are Lieut.-Col. Harold Lee George, Maxwell Field, Ala., Majors John F. Whiteley, Langley Field, James A. Woodruff, Captains F.C. Carroll, H.Z. Bogert, James M. Gillespie and 1st Lieut. Leonard F. Harman, of Wright Field, Dayton, Ohio. Those designated on the second, or pursuit ship board, are Majors Claire L. Chennault, from Maxwell Field, Ala.; John F. Whiteley, Langley Field, Va.; Captain Carl F. Greene, 1st Lieuts. Dudley W. Watkins, Roscoe C. Wilson and Benjamin S. Kelsey, from Wright Field.

LIBRARY NOTES

Some of the More Interesting Books
and Documents

Recently added to the Air Corps Library

A 00 U.S. 54. Two years of emergency conservation work (Civilian Conservation Corps), 1935.

A 40/83. Italian organization for the protection of flight. 1934. 23p. Trans. from L'Aerotecnica, Dec. 1934. Takes up operation of radio-meteorological services in Italy.

B 63/26. The air medical services; a comparative study of the functioning of the air medical service in various countries. Jan. 5, 1933. 36p. Trans. from the French.

C 21/100. The Air Corps, by Major Robert C. Candee. April 18, 1935. 24p. Lecture delivered before the Engineering School at Fort Belvoir, Va.

C 21/101. Air Corps in coast defense, by Major Robert C. Candee. May 15, 1935. 12p. Lecture delivered before the Engineer School at Fort Belvoir, Va.

C 21/102. Purpose of the Air Corps, by General Oscar Westover. April 27, 1935, 8p. Talk before U.S. Chamber of Commerce.

C 71.7/3. Instructions for practice, anti-aircraft artillery, Great Britain, War Office. 1935. 27p.

C 71.6 U.S. 66. Promoting and regulating aviation safety, by Eugene L. Vidal. 1935. 5p. Presented at the aeronautical session, 6th Annual Greater New York Safety Conference.

D 52.41/45. Installation of steam turbine plants on airplanes, by S. Shapiro, May 21, 1935. 15p. Takes up altitude, super airplanes, economy, dependability, safety, noiselessness and simplicity.

D 52.41/52. The Winter Operation of Aero Engines, by Alan Ferrier. April, 1935. 9p. Reprint from S.A.E. Transactions.

616.97/G98. The residual effects of warfare gases, by H.L. Gilchrist, 1933. 93p. Takes up Chlorine and Mustard gases.

621.43 J89h. High Speed Diesel Engines, with special reference to automobile and aircraft types; an elementary textbook for engineers, students and operators, 1933. 248 p.

629.142 K 45. Mechanics of Flight, by A.C. Kermode, 1932. 207 p.

629.18 Al 8. Aluminum in aircraft, by Aluminum Company of America, 1930. 159 p.



TECHNICAL INFORMATION
and
ENGINEERING NEWS

INSPECTION DIVISION, OFFICE OF THE CHIEF OF THE AIR CORPS

The following difficulties have been reported in recent Unsatisfactory Reports:

Airplane Type P-26A: Tube Assembly. Blast, .30 caliber, Part No. 3-4729.

Breakage of Support Assemblies, blast tube, Part No. 21-4328, is occurring after approximately 5 hours flying time with blast tubes installed.

Caused by vibration of the blast tube due to the loose fit of this tube over the barrel jacket.

A "vee" shaped slot, $\frac{1}{4}$ " at open end and approximately 2" long was cut in a blast tube at the barrel jacket end. On each side of this slot, a small piece of $\frac{3}{16}$ " tubing was welded to receive a #10 bolt to secure the blast tube to the barrel jacket.

This blast tube was installed in P-26A airplane No. 33-122 and has been installed for approximately 35 hours. A burst of 65 rounds has been fired through the gun. Thus far, this installation has proven satisfactory.

YB-10 Martin Bomber. Linen on leading edge of left center panel has pulled out of the wire due to the deterioration of the linen. This was evidently caused by oil and gas being spilled when servicing and oil getting on the panel in flight.

It is recommended that a light strip of aluminum be extended from the trailing edge of the metal panel to about the first row of stitching on the linen panel.

Note by Station Engineering Officer: This office recommends that change outlined in this Unsatisfactory Report be prescribed for installation on all airplanes of this type. It is believed that this should be accomplished as a temporary measure only. It is further recommended that the part of the under surface of the fabric covered trailing edge affected should be metal covered throughout with dural sheet of a suitable thickness.

Reply to U.R.: "It has been found that at least a part of this deterioration is due to acid from the battery drain being sprayed on the fabric covering. Instructions and drawings will soon be issued calling for a change in the battery drain which should correct this condition.

In regard to your recommendation that the fabric covering be replaced with steel covering, this change will probably be made when the airplanes are given overhaul. Until the

metal covering is installed, it is requested that the fabric be coated with fire resisting enamel to reduce the possibility of fire from overflowed gasoline and accumulated oil.

In cases where the fabric becomes deteriorated to the extent that replacement is necessary, care should be exercised to allow two inches of cloth to overlap as shown on Section F-F of Drawing P-103017."

Douglas O-38 Airplane: The alomite filler and the drain cock which is used to test the level of the fluid in Oleo Strut, Part #085525-1 on airplanes of the O-38 and O-38B series have given considerable trouble at this station by leaking.

The mixture of castor oil and alcohol has been extremely detrimental to painted and doped surfaces and it has been found practically impossible to remove this from lacquered and doped surfaces without removing the lacquer and the dope.

This trouble has been corrected at this station by installing a Zerk filler with a screw cap which cannot leak, and a level tester made out of a union with a positive screw cap made from the cone and nut of the union. Both caps have been built to a round nose by braising and have been drilled and safetied together.

Reply to U.R.: "The changes made to prevent leaks at the points in question are satisfactory.

As a matter of information, a quantity of leak-proof alomite lubricators will soon be procured."

P-26A Airplane: Aileron Swing Support Assembly, Part No. 21-2095, and Aileron Swing Spacer, Part No. 21-2478.

Spacer appears to be turning in bracket and wearing, resulting in excessive play.

Airplane new. Time in service, 303 hours. Cause of this condition undetermined. No repairs or modifications made. No recommendations. Parts continued in service.

Reply to U.R.: "The design of the mechanism in question is such that the spacer is staked at manufacture to the aileron swing support assembly. This practice appears to be satisfactory, and since no previous trouble with rotating has been encountered, it is considered logical to assume that the trouble is due to faulty staking at manufacture. It is requested that the spacer in question be se-

curely staked to the support assembly without removing the assembly from the rear spar hinge if this is possible. If additional reports on this trouble are received, consideration toward changing the staking method to a more positive means of attachment will be given consideration."

Hub Assembly, Propeller.
AC - 31-428-P.

C-24 Airplane,
Air Corps No.
32-287.
R-1820-E Engine,

Air Corps No. 32-384.

During 40-hour inspection, propeller was found to be slightly loose, by the 56th Ser-vice Squadron. Propeller could not be tight-ened with or without spacer installed, so it was turned over to the Propeller Department for inspection.

Inspection of propeller hub, Part No. 30-707, revealed that splines were .019" larger than hub which was drawn from stock.

Propeller shaft was not damaged and replace-ment hub tightened without difficulty.

The following defects were noted during re-cent technical inspections:

- Y10-40B - Carburetor line drain loose at fit-ting. Excessive play, left eleva-tor flettner.
- PT-3A - Hole in cowling which supports air intake stack worn oversize. Screen in air intake stack is torn. All aileron control linkage pins worn. Rubber grommets on oil line drain worn. Defective hose on oil pres-sure line.
- O-43A - Radius of bend, Prestone tempera-ture line too small. Battery drain line disconnected. Flettner con-trol linkage worn. Loose connec-tion, main line switch. Play in front control stick assembly. Side play, wobble pump handle.
- O-43A - Technical Order 01-1-4 not complied with at solenoid switch on starting motor. Lock nut loose, shutter control rod.
- O-43A - Fuel line from rear carburetor not marked. Fuel line from main tank to fuel cock shut-off defective. Technical Order 08-5-1B not fully complied with.
- O-43A - Fuel line from carburetor to C-1 strainer not marked as required by Technical Order 01-1-51.
- PT-3A - Elevator control cables too loose.
- PT-3A - Aileron control cable slightly loose. Horizontal stabilizer rear support loose.
- BT-2A - Propeller badly nicked.
- O-25C - Horizontal stabilizer trunnion worn.
- PT-3A - Right gas gauge leaks. Oil tank cover soaked with oil (tank appar-ently leaking). Vertical stabilizer loose.
- O-35 - Carburetor drain line, left engine, badly bent. Hose connection on

Prestone line from expansion tank to right bank outlet, on left engine, defective. Oil radiator cowl on left engine cracked. No tags on fire extinguisher showing date of inspection.

- O-35 - Oil line hose connections defective. Fire extinguisher leaking.
- O-35 - Safety wire of Cuno strainer broken. Carburetor screen on left engine brok-en. Fuel line from carburetor to C-1 strainer, left engine, not marked. Technical order 08-5-1 not fully com-plied with.
- O-35 - Battery mountings not painted with acid proof paint. Weld cracked on member housing, upper end of right oleo leg. Hose connection on fuel line from C-1 strainer to fuel pump defective.
- B-7 - Technical Order 01-1-25 not fully com-plied with. Zerk fitting missing on right engine. Lower retaining nut on fuel pump, flexible drive shaft on left not properly safetied.
- P-26A - Sediment and flakes in gas tank.
- P-26A - Ring cowl loose and not safetied prop-erly.
- C-14 - Sediment in gas tanks.
- OA-4 - Elevator stop adjustment not set.
- B-5A - Compass not swung with radio on. Lens broken, left landing light.
- BT-2B - Inner aileron strut fitting loose.
- BT-2B - Stabilizer adjusting mechanism badly worn. Inner aileron strut fitting worn.
- BT-2B - Rubber tubing, battery box drain, de-teriorated.
- BT-2A - Sediment in main fuel tank.
- BT-2A - Leaking gas around carburetor butter-fly valve shaft.
- BT-2C - Leaking gas around carburetor butter-fly valve shaft.
- A-12 - Flare door latch broken. Left rear wing butt strut cuff cracked.
- A-12 - Rudder control cable frayed.
- A-12 - Tail wheel control cables frayed. Screw out of vertical fin fairing, right side.
- A-12 - Rear rudder stop needs adjustment.
- BT-2BI - Slight leak in fuel relief valve and 3-way valve.
- A-12 - Starter terminal loose. Ears broken, filler and cap (oil cap safetied).
- A-12 - Ball socket, stick control, loose.
- A-8 - Gas leak at fuel pump (2 reports).

The following difficulty has been reported in recent Unsatisfactory Report:

Type D-2 Batteries: It is very difficult to remove Type D-2 batteries from battery con-tainers, Drawing #0168774 without tearing the name-plate off the side of the battery. The name-plate is secured to the side of the bat-tery with round head screws which catch on the 1/8" wood liner of the battery box. It is recommended that Specification 70-22, be revised to specify that the name-plates be fastened to the end of the batteries instead of the side. Since the handles are fastened on the ends no loss of space will be encount-

ered by mounting the name-plates below the handles.

Reply to U.R.: "Action is being taken to revise Specification 70-22-B to specify the nameplate be attached to the end of the battery instead of on the side. If desired, the name-plate on the batteries installed in aircraft and in stock, may be removed and reinstalled on the end, as it is merely secured in its present location by four screws."

The following difficulty had been reported in recent Unsatisfactory Report:

Throwing Oil from Breather, No Compression, & Excessive Oil Consumption, P-1690-11 Engines. AC No. 33-856:
Engine throwing oil out at both breathers and had absolutely no compression on No. 9 cylinder, rasping

noises in Nos. 3 and 4 cylinders.

This engine has been in service 105:10.

Cause of unsatisfactory condition undetermined.

No recommendations.

AC No. 33-639:

Engine throwing oil from both breathers, lost approximately 400 R.P.M. in flight. Ground test showed no compression on Nos. 2, 6 and 9 cylinders.

This engine had 84:35 flying time.

Cause of unsatisfactory condition undetermined.

No recommendations.

AC No. 33-631:

Replacement of P-1690-11 engine AC. No. 33-631, installed in YB-12 airplane, A.C. No. 33-161, due to excessive oil consumption of the engine. Excessive amount of oil was passing through oil cylinders and causing misfire of the engine.

Reply to U.R.: "The five piston and ring assemblies forwarded by the Rockwell Depot in connection with these reports have been examined. All the pistons were found to be slightly scored and a number of the rings stuck. One of the pistons was found to be badly burned under the compression rings. It is believed that the increased ring clearances now recommended, together with the increase in the size of the crankshaft oil jet, should tend to reduce the number of failures of this type.

"It is imperative, however, that the operating limits on manifold pressure and cylinder temperatures be carefully observed during ground and flight operation of these engines as no piston and ring assemblies yet devised will stand up when high-output engines of this type are operated above their normal rating. It is also highly important that current instructions regarding the use of the mixture control be carefully observed at all times and particularly that the mixture control must not be leaned out to the point where reduction in R.P.M. is noted.

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MATERIEL DIVISION, WRIGHT FIELD, OHIO.

Take-off and Landing Characteristics Recorded by New Method

A photographic method for recording the take-off and landing characteristics of an airplane has been developed. The take-offs and landings are made over a carefully laid out course, and an especially appointed moving picture camera is used to record the successive positions of the airplane at certain intervals of time, simultaneously recorded. The picture obtained gives the history of the distance in height in relation to time from which all the characteristics pertaining to the take-off and landing can be determined. The practicability and accuracy of this method have been demonstrated on many occasions. It is intended that this become a standard method for the determination of these characteristics in experimental and service type airplanes.

Float for B-12A Airplane

A representative of the Engineering Section is now at the plant of the Edo Aircraft Corporation, College Point, Long Island, New York, to supervise the installation of floats containing gasoline tanks of 600 gallons capacity on a B-12A airplane. Part of the landing gear mechanism will be reworked to make it suitable for operating the retractable float water rudders, and the fuel system will be tested for its ability to supply the main

tanks with gasoline from the float tanks. When the installation is completed, Materiel Division officers will flight test the airplane at North Beach. If these tests are successful, the airplane will be assigned to Langley Field for service test of the equipment.

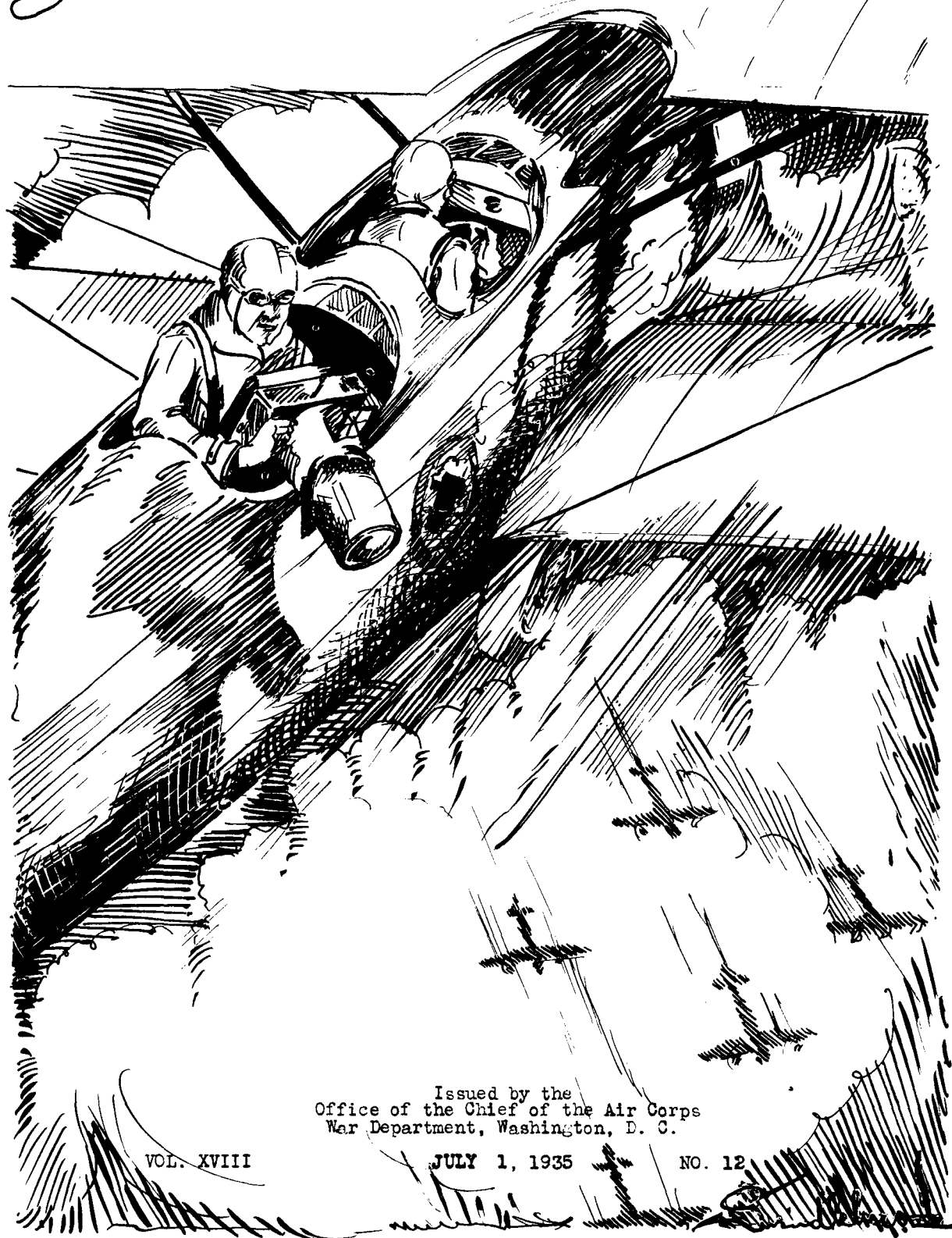
Synchronized Gun Installation Difficulties

In an effort to overcome difficulties previously experienced with synchronized gun installations in P-26 series airplanes, the Materiel Division representative now at Barksdale Field in connection with A-11 airplanes, will revise the synchronized gun installation in P-26's and conduct sufficient firing operations under service conditions to determine corrections necessary.

Engine Gauge Unit

An engine gauge unit, incorporating an electrical resistance type thermometer, has been submitted for test by the Weston Electrical Instrument Company, Newark, New Jersey. If this type of instrument proves satisfactory, it will eliminate the unsatisfactory conditions which have arisen due to breakage of thermometer capillaries.

NEWS LETTER



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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 CLASS GRADUATES FROM ADVANCED FLYING SCHOOL

 BRIGADIER General Oscar Westover, Assistant Chief of the Air Corps, was the principal speaker at the commencement exercises of the Class of 68 students graduating from the Advanced Flying School, Kelly Field, Texas, on Saturday morning, June 22nd. General Westover's presence at Kelly Field was literally a flying visit.

The student class comprised two Air Corps officers, three officers from other branches of the Regular Army, and 63 civilians and enlisted men who pursued the intensive one-year flying course at the Air Corps Training Center under the status of Flying Cadets. Among other officers attending the exercises were Brigadier-General James E. Chaney, Assistant Chief of the Air Corps and Commandant of the Air Corps Training Center; Brigadier-General Robert C. Foy, commander of the Second Field Artillery Brigade, Fort Sam Houston, Texas; Colonel Jacob E. Fickel, Commandant of the Advanced Flying School, and Lieut.-Colonel H.H.C. Richards, Assistant Commandant.

The exercises were held in the post theater, following the aerial review in which all of the graduates participated. After the introductory remarks by Col. Fickel, General Westover addressed the assemblage, as follows:

"General Chaney, Colonel Fickel, Colonel Harms, members of the graduating class, ladies and gentlemen:

I come before you today as the representative of the Chief of the Air Corps, who sincerely regrets his own inability to be present on this occasion and who wishes me to convey to the Commanding General of the Air Corps Training Center, to the Commandants, staffs and faculties of the Primary and the Advanced Flying Schools, and to the members of this graduating class particularly his hearty congratulations upon the completion of the training of this class. He wishes me also to convey his greetings to the officers on duty with the School of Medicine, and to all the officers on duty at the Training Center and to their families.

I, personally, regret that the Chief of the Air Corps cannot be present on this occasion. It would be particularly appropriate, and for each of you a memorable circumstance, to receive your certificate from the hands of one who is not alone the Chief but who also holds the distinction of being our first mili-

tary aviator. Then, too, I regret that the Chief of the Air Corps cannot be present on this occasion, since it means that I must come to you on such short notice that I have no specially prepared address to give you. I must confess, however, that I am happy to be here and I cherish the opportunity of making some remarks, which I hope may be of interest and value to you.

Whenever I return to Texas, and especially the Training Center, I am forcibly reminded of our pioneer period of development in aviation, because Texas is inseparably connected with those early days of flying. It is a long flight from the 'stick and wire' Jennies to our present ships of steel. In those days flying was starting; today you are starting flying.

My contact with the Air Corps Training Center has been sufficient to acquaint me with the high standards and efficiency of administration and training which mark it today as the best training establishment of its kind in the world. Therefore, it is appropriate that my first remarks and expression of official appreciation should be addressed to the commissioned, enlisted and civilian personnel who have contributed their wholehearted efforts to achieve this result. The Air Corps is, indeed, very proud of the results continually being accomplished at the Training Center, and as Assistant Chief of the Air Corps I desire to praise highly and sincerely those whose leadership and initiative, regardless of official capacity, have made this possible. To the Directors of Training and their stage, section and flight commanders and instructors I especially extend official appreciation of the Chief of the Air Corps of their consistently good, though hard, work in carrying on the training with that marked thoroughness and efficiency which has characterized the high standard set for qualification in flying at these schools. On the manifest results of their endeavors, I also congratulate the Commandants of the Flying Cadets, to whose leadership we entrust the responsibility of inculcating in students those essential traits of military character and discipline from which we build the future adaptability and usefulness of graduate flying cadets and reserve officers.

A successful completion of a year's

training at this school is indicative of that teamwork which is so essential to successful academic and practical training. Particularly is this teamwork necessary among the instructor personnel, without whose thorough coordination and wholehearted effort there could be no high standard, and it is only high standards that we try to achieve. I am aware, too, of the many handicaps with which the Training Center and School authorities are faced throughout each year of these times of aviation depression. Shortage of personnel, shortage of equipment impose additional problems of administration and additional hours of work in order to insure that degree of safety in flying training which is correlated with efficiency of training. So it is with full appreciation of the efforts of all personnel connected with the Training Center that I express congratulations of the Chief of the Air Corps and his commendations for work well done.

I congratulate particularly the members of the Graduating Class who, by completion of this course, have demonstrated not alone their ability as pilots, but the possession by them also of those essential qualities which make a good officer. You have acquired a knowledge and appreciation of the fundamental traits of military character - loyalty, obedience to orders, respect for superiors of the military service, promptness, frankness, attention to duty, maintenance of good physical condition, etc., and the training and technique of flying is without parallel, as evidenced by the perfection of your review this morning.

Reviewing the kind of training which you have undergone here, it is evident that each of you have been under the closest supervision both personal and professional. Every fault has been pointed out and corrected. Yours has been a life of orderly regulation, both in your work, your play and your flying, and whether in barracks, mess halls, drill periods or other formations.

When you join your organizations, mostly with the General Headquarters Air Force, you will still be supervised but permitted greater freedom. Remember then what you have been taught here both in the air and on the ground. As expressed by an old instructor after giving his students the final check, 'when you start to do something and your feet start "patting on the rudder bar," don't do it.' This quotation applies both to your professional and personal conduct.

It is always sad to refer to those who commenced the course with you but were unable to complete same. It is particularly unfortunate that Major Zablan of the Philippine Constabulary should have suffered such an untimely death in an airplane accident just about the time he was due to receive his coveted wings and

certificate of graduation from this School. So, too, is it sad to refer to others who have failed to complete the course, some through faults of their own, and others through no fault of their own. Yours has been a hard course, a long course, a course which has tested your determination and your morale, undoubtedly, on many occasions. I have no doubt that many of you, upon receiving your appointment as flying cadets, felt that you had overcome the greatest obstacle, namely, your appointment, and that your progress thereafter would be a matter of course. Undoubtedly after a month you found that to be an elusion and that you were up against a tough proposition, and I imagine each month since then has confirmed that fact. You are, so to speak, the survival of the fittest, and the test which you have survived was made both thorough and difficult for your protection in the future. The fact that you have overcome doubt and tendencies to quit, all evidence your determination to succeed in the flying game and, as a result, you have survived the test with flying colors. You have won your flying insignia, and looking ahead to a real flying future. Bear in mind, however, that the flying man's test is a continuing one, and every flight and every new plane presents some test of ability and technique.

From now on, judgment becomes of particular importance, and that can be acquired only through experience. The fact that you have been well trained in the art of flying, including instrument- and blind flying, may give you a false sense of security, and particularly confidence in the performance of flying missions. School yourself in proper judgment. It will take years of practical experience to round out your judgment. For instance, take the question of flying in bad weather. No one can withstand the fury of the elements. Recent tornadoes, floods, dust storms, and other destructive meteorological disturbances are clear evidence of this. Therefore, it is always the better part of wisdom for you to seek a safety haven under such conditions, thus insuring the safety, not only of your own life, but also the lives of others.

Curb absolutely any tendency to free flying or grandstand flying. Make it a fixed rule to stick with the plane to the efficient accomplishment of any assigned mission; to do otherwise varies from the intent of the order and may jeopardize your career and the rights and benefits of your dependents. Develop forethought and plan carefully all your flying. You will have plenty of opportunity for initiative and development. Your careers will be watched both during your years of service as a flying cadet of the tactical unit and during such subsequent active duty which you may perform as Reserve officers. There is legisla-

tion in prospect which may make it possible for you finally to enter the Regular Army Air Corps, and I hope that you may be successful in doing so.

I envy the opportunity of embarking on a flying career at a time when aviation developments are as rapid and as broad as they are today. When I recall the development of heavier-than-air aviation, which all occurred in my life time, I can appreciate the tremendous advances already made and predict even more marked advance for the future.

Again I congratulate you gentlemen, and before I close I wish to especially congratulate the officers who have just completed the course. To those who have come from other branches of the service, I wish to assure a hearty welcome in the Air Corps, for you have met the initial requirement for a successful career therein.

To Major Sorenson and Captain Hill, with whom I have served in the lighter-than-air branch of aviation, I wish to express my personal congratulations - to them and to the service - the former upon his possession of so many of the coveted ratings of the Air Corps, and the latter upon just having completed the primary flying course at Randolph Field.

My best personal wishes and official felicitations accompany each of you upon your graduation from this School. We will watch your progress and trust each may be fully successful in this future service."

The list of graduates and their station assignments appear elsewhere in this issue of the News Letter.

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SIXTH PURSUIT SQUADRON IN TRAINING CAMP

The 6th Pursuit Squadron, stationed at Wheeler Field, T.H., conducted its annual training in Field Exercises, Ground Gunnery, Aerial Targets and Bombing at Bellows Field, Waimanalo, T.H., during the period from May 2nd to May 25th, inclusive. During this period, except for a week's intermission when the squadron participated with the various units of the 18th Composite Wing in the Joint Army-Navy-U.S. Fleet Exercises, each pilot completed the War Department Training Directive requirement in Field Exercises, Gunnery and Bombing, and averaged approximately 40 flying hours.

Results obtained were most gratifying, every pilot firing for record attaining "Expert," and in most cases making sufficient scores in one event to qualify them for all three events. All pilots were not required to fire for record this year, having qualified during the past three years.

First Lieut. Curtis E. LeMay, Group Communications Officer (attached to the

6th Squadron for flying), fired all events and recorded the fine score of 1304 out of a maximum 1500. First Lieut. Mark E. Bradley, Jr., Squadron Engineering Officer, made the highest score in the record events with the splendid mark of 1033.5.

The enlisted personnel fired ground machine guns at a towed sleeve target and at ground targets, and were afforded excellent experience in the utilization of these arms. The noncommissioned officers of the first four grades fired the 45 cal. automatic for record.

Commissioned personnel who attended the Field Exercises, in addition to Major Early E.W. Duncan, Commanding Officer, were: Captains Ray H. Clark, Flight Commander and Squadron Adjutant; Morris R. Nelson, Operations and Intelligence Officer; B.L. Boatner, Flight Commander; 1st Lieuts. L.O. Ryan, Armament Officer; M.E. Bradley, Jr., Squadron Engineering Officer; C.E. LeMay, Group Communications Officer; R.H. Griffity, Communications Officer; 2nd Lieuts. J.B. Shields; B.J. Webster, Assistant Adjutant, and S.J. Grubbs, Jr., Assistant Engineering Officer.

Recreational activities, comprising such popular sports as baseball, playground ball, volley ball, horse-shoe pitching and swimming, occupied the leisure hours of the organization and, as a result, the 6th Pursuit Squadron's encampment for the Fiscal Year 1935 was most enjoyable in every department.

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SUBMERGED SUBMARINES SEEN FROM ALOFT

The 19th Pursuit Squadron, stationed at Wheeler Field, T.H., participated with the other Squadrons of the 18th Pursuit Group in the Joint Army-Navy-U.S. Fleet Exercises in connection with the recent fleet operations. The mission was to locate submarines that might attack the fleet being supported. It was found that, except when the sun was very low and light values were much reduced, it was possible to locate submerged submarines from an altitude of between 750 to 1,000 feet. Many submarines were located and reported by radio and visual signals. Missions of about three hours' duration were flown. These operations presented an opportunity for many Air Corps officers to make their first official contact with the Navy in joint operations, and the experience was very valuable professionally.

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The Second Bombardment Group in 26 B-6A's, 2 BT-2's and 2 PT-3's, and led by Colonel Oldfield, departed from Langley Field, Va., on the morning of June 11th for Mitchel Field, L.I., New York, for one month's tour of duty in connection with training of West Point Cadets. Practically every officer and enlisted man of the Group made the trip.

ATTACK AVIATION TACTICS IN THE HAWAIIAN DEPARTMENT

BECAUSE of it being stationed at Wheeler Field, adjacent to the Hawaiian Division at Schofield Barracks, the 26th Attack Squadron has been afforded, in cooperative missions, opportunities to gain a great amount of valuable information and experience in the performance of tactical problems that must necessarily fall to the lot of Attack Aviation in its mission of offense and defense.

A cooperative problem of beach defense was recently worked out with the aid of the 13th Field Artillery and a searchlight section of the 64th Coast Artillery. This problem was to determine the effect of machine gun fire against small water borne craft, attempting to make a landing, illuminated from defensive positions ashore.

The target was a 6' x 10' x 4' structure covered with target cloth, mounted upon floats and drawn shoreward from 3,000 yards by means of cable and winch at approximately five miles per hour.

The illumination in the first phase was by two standard Coast Artillery Corps 64" searchlights, 1,000 yards apart, laid on the target. The range in this phase was from 2,000 to 3,000 yds., and the attack was made by 6 A-3B airplanes in column. No tracer ammunition was used. The results were extremely satisfactory. The greatest deflection noted was approximately 10 yards, and the coverage and shortage were extremely small. Difficulty in aligning sights, due to darkness, was reported by some pilots, but it is thought that further practice along this line of firing will solve that problem. The firing will also be aided by the use of tracer ammunition.

In the second phase, the same target and range was used, but the illumination was furnished by the airplane dropping M III flares over the target. The attack was made in the same manner as in the first phase. Difficulty was experienced by the flare ship in locating the target, and the illumination was poor, with consequently poor results in firing. A study of the question of illumination leads to the following conclusions which, however, must be tested and proved: Flares must be dropped close to the surface of water and to the rear of target, altitude of dropping about 200 to 300 feet. The present type of flare is not suited for this work. A flare which would ignite upon contact with water and float upon the surface while burning would seem to be ideal.

In this problem the communication was found to be very poor, both panels and Very Pistol lights proving unsatisfactory. "It would seem," says the News Letter Correspondent, "that we must come

to the use of voice radio between ground and air for such work. The above statement may seem vague, unless it is understood that such communication is very necessary due to surface craft straying past the boundary lights and causing many interruptions."

The News Letter Correspondent goes on to say that it is interesting to note that, with the loading equipment available at the station, it required 75 man hours to load the ammunition for this flight and, had bombs been used, an additional 40 man hours would have been required.

Due to the small size of the auxiliary fields in the area and the absolute necessity of dispersion of aircraft for defensive purposes, the problem, especially at night, of take-off and landing control has caused a good deal of discussion among the personnel of the 26th Attack Squadron. Various methods have been tried, the most satisfactory of which has been the Air Traffic Control Lamp, Type B-I-A. This lamp was used to signal ships when to take off, direction, and when to land. It is extremely simple to operate, and the results obtained were all that could be desired. In a recent night test it was found that from dispersed defensive positions the airplanes could be dispatched at 30 second intervals. Landing of airplanes was accomplished at 45-second intervals by the same method. Further tests are under way to determine the value of this device for daylight dispatching from dispersed positions.

The 26th Attack Squadron is organized under Table of Organization 279-P, War Department, 1925, and consists of 90 men, 12 officers assigned and 6 attached, and 15 A-3B airplanes. Forty percent of the aircraft are normally at the Hawaiian Air Depot undergoing overhaul. The Squadron is organized into: Flight "N," with Captain Harvey F. Dyer as commander, and Flight "R," with Captain Homer L. Sanders as commander.

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50TH OBSERVATION SQUADRON WINS TROPHY

Members of the 50th Observation Squadron, Luke Field, T.H., were pleased to learn recently that they had been awarded the Annual Aircraft Efficiency Trophy for the Training Year ending June 30, 1934.

This Trophy is awarded annually by the H.F. Wickman Company, Ltd., of Honolulu, to the squadron demonstrating the highest efficiency in the operation and maintenance of aircraft.

In commenting upon this award, the News Letter Correspondent of the 50th, says: "We feel pretty good - thanks - and we are out to win it for the second consecutive year."

NEW PHYSIOLOGICAL RESEARCH UNIT AT WRIGHT FIELD

By Marguerite Jacobs Heron



DURING the War and until 1920 there existed at Mineola, Long Island, under the direction of E.C. Schneider, Ph.D., well known in Army circles as author of the "Schneider Test," an "Air Service Medical Research Laboratory," established for the purpose of ascertaining the various effects of flight upon personnel and of devising equipment to obviate those effects which proved adverse to health and comfort. In the World War, the American pilot had, except in isolated instances, been subjected for the first time to flight at high altitudes. The whole problem of oxygen, the amount needed and equipment for supplying it, was so new that it engrossed the concentration of the research group virtually to the exclusion of all other considerations. By 1920, however, the development of aircraft itself was moving forward at such a rapid pace that it demanded the full attention of the Air Corps, and the Medical Research Laboratory, studying pilots' equipment was permitted to pass quietly out of the picture.

For fifteen years this aircraft development has held the center of the stage. Speed of normal flying has been greatly stepped up. Flight at altitudes demanding additional oxygen has increased, and higher altitudes for normal cross-country work promise to become more or less common in usual practice. This progress has been so heartily accepted by the air personnel that, although now and then some pilot has complained of his teeth breaking off or loss of fillings after altitude work with oxygen, or mentioned a "blacking out" experience in high speed turns, it has scarcely been realized that for fifteen years no work has been done toward studying the changed effects of modern flying upon pilots with a view to supplying equipment that would normalize those effects for his physical comfort and well being.

The School of Aviation Medicine, while active in its research along the lines of "occupational" influences and illnesses and their cures, except in the instance of goggles, has had no tie-in with the equipment angle of the problem.

With these considerations in mind, the need of some such research laboratory as was operated during the War and until 1920 became increasingly clear to Major Malcolm Grow, Chief Flight Surgeon of the Air Corps, who placed the matter before the proper authorities. At a conference between the Chief of the Air Corps and the Surgeon General of the Army, in April, it was decided to establish at Wright Field as part of the Engineering Section, a Physiological Research Unit "to conduct

research in connection with the development of flying equipment and accessories to the end that the efficiency, health, and lives of personnel be protected." The Materiel Division with its engineering facilities and personnel was considered the logical locale for the new laboratory, and a medical officer, Captain Harry G. Armstrong, was ordered to Wright Field to make a thorough study of needs and possibilities and to line up the organization and work.

In attacking the problem, it was surprising to find how little data on the subject were in existence. Concerning oxygen, for instance, knowledge of which is of immediate importance, a survey of all the relevant literature available, including abstracts from 92 periodicals and 22 books, failed to cover conclusively such points as the most favorable amount to be inhaled by the individual, the effect of its frequent use, its effect if used for long periods at a time, the cause of its apparently destructive influence upon the teeth, the matter as to whether the gaseous or liquid form is preferable for human consumption, the degree of concentration at which it becomes poisonous to the system, the oxygen requirements of a sealed cabin and a supercharged pressure cabin, the effect of oxygen and carbon dioxide mixtures at high altitudes.

Research in this field will have to start with the fundamentals. A skull is being fitted with human teeth, some with gold and amalgam fillings, and this will be subjected to oxygen in both forms and under all varying temperatures and amounts. Results of the use of oxygen upon the systems of animals are being studied. With various other methods of attack, it is expected that information will be gained which will make equipment possible to meet all requirements, from the flying as well as the comfort and health standpoints of the individual.

In starting research on the physical reaction called "blacking out," a centrifuge is being constructed. By means of this equipment it is hoped to discover the amount of centrifugal force required to bring about the "blacking out" sensation. A German scientist in experimenting with dogs finds that upon being subjected to these high forces, small hemorrhages of the brain result, and it is possible that definite physical damage may be the penalty for the human being also. The new laboratory will endeavor to determine these things definitely.

The question of the endurance of cold in open cockpits will also be gone into thoroughly. Without doubt an uncomfortable-

able pilot is operating at a tremendous disadvantage and nothing has a more dis-integrating effect upon his morale or efficiency than the cold that heavy, bulky clothing cannot keep out. For years it has been known that heavy clothing cannot keep a flyer warm in open cockpits which are full of drafts. Open cockpits must be designed so that drafts through the floor and sides are shut out, and they must be heated. It is only through this method that an approximation of normal body heat can be maintained. The frosting of goggles and moisture under face masks have always been causes of complaint. Heating of cockpits would eliminate these difficulties as well as the wearing of electrically heated or too bulky gloves, which pilots find extremely awkward and bothersome in operating an airplane.

A pilot suffering from cold has but one idea - to land as quickly as possible and regain comfort. He will not make his usual leisurely circle of the landing field to look things over before coming in, and so may experience a crack-up as a result of his haste and dulled perceptions. From studies recently completed, it has been shown that the efficiency of the average pilot at the temperatures prevalent at 10,000 feet in continental United States is reduced 23 per cent.

A study of the escape of carbon monoxide gas into cockpits will also be undertaken, to determine the increased amount of absorption into the blood at low temperatures and high altitudes with the development of protective equipment in view.

These are but a few of the problems set forth for immediate research. By July first, it is anticipated that the laboratory will be fully established.

If the flight surgeon's feeling is justified, that in considering the aerodynamic and construction characteristics of an airplane the designer has been apt to forget that a man has to fly it, then the new laboratory group is there in the interest of the "forgotten man." Nor is it desired to have the laboratory in any sense a closed corporation. It is above all things for the use of the service. Those interested in its development hope to make it first and foremost a clearing house of ideas, and flight surgeons and Air Corps officers and personnel are invited to cooperate. Suggestions are wanted, and any solutions that are submitted will be given respectful consideration.

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Among prominent visitors to the flying field utilized by the 119th Observation Squadron, New Jersey National Guard (Newark Airport), were President Roosevelt, Secretary of War George H. Dern, and Secretary of the Treasury Henry Morgenthau, Jr.

RESCUE METHODS PRACTICED IN HAWAII

An interesting test and demonstration of the use of the Douglas Amphibian for rescue purposes was recently carried out at Pearl Harbor by personnel of the 75th Service Squadron stationed at Wheeler Field, Schofield Barracks, T.H.

Practice in the rescue of personnel from water-wrecked aircraft is highly desirable in Hawaii. Major R.C. Wriston, Air Corps, as pilot, with Staff Sergeant Jerome B. McCauley as co-pilot, and with the entire crew of the Amphibian as passengers, made several landings and approaches to "three men in a boat" which simulated a wrecked airplane. By the method of trial and error, a good deal of valuable information was obtained as to the best method of approach and rescue of personnel. This information is being prepared for the instruction of pilots and crews assigned to alert duty with the amphibian.

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SAN ANTONIO DEPOT AIDS FLOOD SUFFERERS ✓

As an incident in connection with the recent heavy and unprecedented deluge of rains in this part of Texas, causing disastrous floods in an extensive area surrounding San Antonio, food supplies were ferried on June 15th to sixty youths of the Citizens' Military Training Camp at Medina City, marooned by high water, in a Bombardment plane piloted by Master Sergeant C.P. Smith, on duty with the air transport service at the San Antonio Air Depot. Lieut.-Colonel C.P. George, of the Eighth Corps Area Inspector's Office, accompanied this flight in another plane, piloted by Captain E.D. Ferrin, of this Depot.

It was necessary to drop the supplies from the ship while in flight, as a landing was impossible.

On the morning of June 18th, Mr. Wm. M. Cason, Civil Service employee of the Engineering Department of the Depot, who is a well known pilot in San Antonio (as a private avocation), and who was then on leave of absence, flew a commercial plane, chartered by the Pioneer Flour Mills of San Antonio, and loaded with flour and cereals furnished by that company, on an emergency relief mission to families isolated by floods near the towns of Camp Wood and Barksdale, west of San Antonio. He also carried newspapers to them and brought back mail which it had been impossible to dispatch previously. Mr. Cason also made other private emergency flights in the flooded areas, ferrying an electric repair man to restore light service and other men to make a survey of the property damage, etc.

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During May, the Engineering Department of the San Antonio Air Depot overhauled a total of 33 airplanes, 48 engines, and repaired 38 planes and 47 engines.

V-6817, A.C.

SIXTH COMPOSITE GROUP RETURNS FROM CENTRAL AMERICA ✓

The 6th Composite Group, Air Corps, returned to France Field, Panama Canal Zone, from an extended navigation flight through Central America, on May 19th. The flight equipment consisted of 7 O-19C Observation planes and 2 B-2A Bombardment planes. The personnel participating in the flight were: Lieut.-Col. L.H. Brereton, Majors W.R. Taylor, W.B. Mayer, R.H. Ballard, J.P. Sullivan (QMC), Captains C.W. Cousland, W.M. Scott (M.C.), H.R. Baxter, J.F. Guillett, F.H. Robinson, 1st Lieuts. J.W. McCauley, E.P. Rose, G.C. Northrup, P.E. Gabel, W.A. Tunner, C.T. Mower, W.S. Graham, D.F. Callahan, Jr., Master Sgt. C. Haymes, Sergeant J.S. Welch, Corporal H.T. Swanson, Privates J.F. Curry and J.M. Bourke.

The itinerary of the flight was as follows:

France Field, Canal Zone, to David, Republic of Panama, where a servicing stop was made; thence to San Jose, Costa Rica, where an overnight stop was made. San Jose, the capital of Costa Rica, with a population of 150,000, is at an elevation of 4,000 feet. Mr. Gerald Drew, Charge d'Affairs of the American Legation, entertained the members of the flight.

On the following day the flight proceeded to Managua, Nicaragua, where a servicing stop was made. The American Minister, Mr. Lane, gave a luncheon for the personnel of the flight. The flight then proceeded to San Salvador, El Salvador, and en route passed over the active volcanoes of Momotombo and San Miguel. A 3-day stop was made at San Salvador, and during the stay of the Army airmen, the American Minister, Dr. Frank P. Corrigan, gave a luncheon for the members of the Salvadoran cabinet and the Commanding Officer and field officers of the flight.

The President of El Salvador, Senor General don Andres de Menendez, gave a reception for all the members of the flight. The American colony in San Salvador also gave a large dinner and dance for the visitors. At the San Salvador Country Club, the President and his Cabinet gave a dance in honor of the visiting aviators. During the stay in San Salvador, several members of the President's Cabinet were taken for flights.

After leaving San Salvador, the flight returned to Managua, Nicaragua, where an overnight stay was made. A luncheon was given at Casa Colorado, a beautiful place in the mountains some 17 miles out of Managua. This luncheon was given by the staff of the Nicaraguan Army. On the way out, a very unusual sight greeted the visitors - numerous coffee plantations or "fincas" in bloom. The coffee plants bloom only once a

year, and only for about three days. That afternoon the Commanding Officer of the flight, Lieut.-Col. Brereton, and his field officers, were given a reception by President Sacasa at his palace. In the evening, the American Minister, Mr. Lane, gave a buffet dinner.

The flight left Managua early the next day and proceeded to San Jose, Costa Rica, where an overnight stay was made. The personnel were entertained by Mr. Drew, the American Charge d'Affairs, and in the evening attended a dance at the Grand Hotel, Costa Rica. The flight returned to France Field, via David, R.P., the next day on schedule.

From a training viewpoint the trip was a great success. From a social viewpoint it was even more of a success. Many friends were made, and it is believed that from an official viewpoint friendly and cordial relations between the United States and various Central American countries were more firmly cemented.

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WING MANEUVERS NEAR LOS ANGELES ✓

Lieut.-Colonel Clarence L. Tinker, Commanding Officer of the 7th Bombardment Group, Hamilton Field, Calif., led a flight of 16 Martin Bombers to the maneuvers of the 1st Wing, near Los Angeles, Calif., on June 18th. This contingent represented the 7th Bombardment Group, less the 9th Bombardment Squadron, whose planes had been divided between the 11th and the 31st Bombardment Squadrons. The 11th flew to an encampment at Mines Field, Los Angeles, while the 31st flew to Long Beach.

In conjunction with the 17th Attack Group; the 88th Observation Squadron from Brooks Field, attached to the 7th Bombardment Group, and the 19th Bombardment Group from Rockwell Field, the program before the 11th and 31st Bombardment Squadrons was to work out war problems in the vicinity of Los Angeles at a radius of 500 miles. These war problems were to cover the period from Tuesday, June 18th, to Thursday, June 20th, inclusive. Tuesday, Wednesday, Wednesday night, and Thursday morning were to be consumed in the solution of these problems, with the wing concentration taking place on Thursday night at Rockwell Field. The 11th and 31st Bombardment squadrons were scheduled to leave San Diego at noon on Friday for their home station, Hamilton Field.

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A new \$5,000 X-Ray machine was installed in the Station Hospital at Hamilton Field as a diagnostic aid. Lieut.-Col. Glenn I. Jones, Post Surgeon, has appointed Captain Junius P. Smith, Medical Corps, as the X-Ray Officer.

MARSHALL FIELD INUNDATED BY FLOOD

Flight D, 16th Observation Squadron, stationed at Marshall Field, Fort Riley, Kansas, is working every day, including Sundays and holidays, removing mud from the buildings and cleaning equipment, caused by the recent flood which inundated the entire airdrome, writes the News Letter Correspondent as of June 15th. He goes on to say that all activities have been suspended at Marshall Field since the third of this month. A temporary air base has been established, however, about 5 miles northwest of Fort Riley proper. The planes were ferried to this field and are located and operated there. The servicing facilities are somewhat limited and our gasoline supply is practically exhausted. We have partly solved the problem of maintaining a limited amount of fuel on hand by servicing the gas tanks to capacity whenever our planes stop, en-route here, at Fort Leavenworth. In this manner we have been able to have sufficient fuel for local flights.

Flights were made over the flooded areas all along the rivers emptying in to the Kaw, the latter being adjacent to the flying field and the one that caused all the damage, to determine the extent of overflow and damage done wherever they went over their banks.

The commissioned and enlisted personnel are temporarily quartered on the main post at Fort Riley. We hope to move back to the field in the near future, possibly one week.

The flood arrived much sooner than was anticipated, and came in a torrent. There was hardly sufficient time to move the immediate personal effects and complete evacuation of the equipment was utterly impossible. All major items, however, were elevated to places where the water did not reach, and were not seriously injured. We have, with but a few exceptions, restored most of the equipment to a serviceable condition, and this work is still in process.

Marshall Field is, unfortunately, located on the bend of the Kaw River, and some of the old inhabitants in this vicinity state that this place was entirely inundated in the year 1903 and again in 1915. It appeared as though the river tried to change its channel and follow a straight course through the center of the field. This it virtually succeeded in doing, at the same time flooding the entire surrounding area.

The depth of the water on the field varied from three to six feet. The hangar, having the lowest floor on the field, had the maximum. The damage to the quarters was the heaviest. Basements of officers' quarters were filled with mud and water, and in one of the quarters the water reached and covered the first floor. There are cave-ins around

the quarters with depths of from 3 to 10 feet. In all probability this will cause the quarters to settle to a considerable extent.

In the noncommissioned officers' quarters the water reached a level of from 9 to 12 inches above the first floor and, of course, filled all basements. The floors were warped and bulged in all quarters that were covered with water.

All wooden structures were moved to some degree. The paint house, with all the paints and allied material, was moved approximately one-half mile from its original location, and is now standing on the flying area near the north floodlights.

To illustrate the high velocity of the current, a container full of .30 caliber cartridges was carried about four or five blocks from the place where it was stored. Some of the National Guard buildings were rammed into our Transportation hangar. Old dilapidated shacks, not belonging to the field, are strewn all over the airdrome. The transportation hangar is stripped of part of its wall and roof, and its interior is in a ravaged condition.

The Aqua gasoline system and the field lighting equipment are out of commission. The extent of the damage to this equipment has not yet been determined. In the case of the gasoline storage tank, the river has moved within approximately 10 yards from it, where previously the bank was about 70 yards distant. If we should experience another flood, even though not as severe as this one, the gasoline storage system will be completely wiped out. Further, if there should be a repetition of the river going on a rampage, the barracks and officers' quarters will be completely carried or washed away. We are hoping that the elements of the weather will stay kind to us, as another flood would prove exceedingly disastrous. The main channel of the river has moved to within about 35 yards of the officers' quarters, whereas prior to the flood the bank was between 150 to 200 yards away.

During the past week the river receded to some extent, but at this writing is fluctuating, due to heavy rains west of here and swollen small tributaries still emptying large bodies of water into the Smoky Hill and Republican rivers. These two rivers join the Kaw a short distance from the field, and it was somewhat difficult to determine the exact location of the junction of these rivers by aerial observation.

It is almost unbelievable how such small rivers, creeks and even tiny brooks, that barely had enough water to flow, could ever become so swollen with water and go on a rampage as they did in this locality. The flow of most of the small streams was reversed. Towns all along the main rivers were inundated, and several casualties and considerable damage to pro-

erty were reported by the rescue parties. All troops were held in readiness for rescue work.

Whatever fell in the path of this furious torrent was practically doomed, and a scene of devastation marked its wake. A hint of comedy, mingled with slight sentimentality, emanated from some outside parties, who asserted that "perhaps we should have been equipped with seaplanes, or at least amphibians." The writer believes the suggestion somewhat unwarranted, especially in the face of our present sad plight.

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THE COUPE DEUTSCHE DE LA MEURTHE

The contest for the Coupe de la Meurthe, which has become more or less an Inter-Caudron Trophy, was won at Etampes, France, on May 19th, by Mr. Raymond Delmotte, piloting a Caudron C.460-Renault-456, who covered the 2,000 kilometers (1,242 miles) in 4 hours, 30 minutes, 17 seconds, and averaged 276 m.p.h. France has now won the Trophy three times and holds it for good.

All five entrants who qualified this year were French and flew Caudron machines. M. Arnoux (Caudron 460-Renault-456) broke the world's record over 100 kilometers (62.14 miles) with a speed of 291.5 m.p.h., when he flew it in 12min. 17 seconds, during the contest.

The winning machine was fitted with a 330 h.p. 6-cylinder Renault motor and a retractable undercarriage.

It is interesting to note the considerable advance in average speed attained in this year's race over that recorded in the two previous contests. In the first race in 1933, the winning airplane, a Potez, was flown at an average speed of 200.57 m.p.h. In 1934, a Caudron plane averaged 217.2 m.p.h.

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NEW DESIGN OF LIGHT AIRPLANE

A Frenchman, M. Henri Mignet, has recently designed an entirely new type of plane which he has termed the "Sky Louse" or "Pou-du-Ciel." The plane is so simple in design that the inventor claims to have solved the problem of supplying to the general public a plane which is non-spinning and non-stalling; which flies itself with the absolute maximum of safety and renders flying training unnecessary. Mr. Mignet has published a hand-book wherein he has laid down the fundamentals of his plane as well as his aims for the future. The book gives a full and complete description of the apparatus and the method whereby any person may build the plane within his own backyard. The specifications of this plane are as follows:

Span, front wing, 19½ ft.; rear wing, 13 ft. 1 in.; chord of both wings, 4 ft.

7 in.; length, 11½ ft.; weight, empty, 220 lbs.; take-off run, 328 ft.; clears 40 ft. obstruction after an 800 ft. run; climbs to 3,280 ft. in 19 minutes.

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PARACHUTE FOR LOWERING AMBULANCE LITTER

A model of an ambulance litter with parachute attached, for the purpose of lowering a patient from an airplane to the ground in case of emergency, is on display in the Army Aeronautical Museum at Wright Field, Dayton, Ohio. This equipment, developed by Air Corps engineers, shows a means of holding a patient in a litter in the event necessity demands a descent by parachute.

Knowing the patient would be helpless, the position of landing had to be considered so that patient would not land on his head and sustain further injury.

The idea of a parachute with a litter is not entirely new, as it has been used as a "stunt" novelty. For actual use, the shock of landing would have to be reduced as much as possible. The proposed scheme on the model was to have the feet of litter protector stick into the ground, which would prevent dragging, also to have a pneumatic shock absorber in the litter protector.

A series of spring rods around the protector would prevent the litter from striking the ground in flat position and further injuring the patient.

The parachute canopy is contained in the upper end of litter protector, the top being attached with a breakable static line to some part of the aircraft, thus assuring proper deploying of canopy after launching of the patient, since, presumably, no aid could be furnished by the patient himself.

The usual Air Corps parachute measures 24 ft. A 28 to 30-ft. canopy was proposed for this model.

Several tests were made, attaching a litter to a 30-ft. canopy to determine the proper size. This development never progressed beyond the small model, as it belongs distinctly to war times, and the priority of other more immediate engineering developments has caused a postponement of further experiments for the present.

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A CORRECTION

In publishing in the April 15th issue of the News Letter the report of the Engineering-Supply Conference, held at the Materiel Division last November, an error was made on page 182, under the heading "4. IGNITION," paragraph "e. Ignition Cable." This paragraph should read:

"Experience has shown that the standard ignition cable is definitely unsuitable for pressure baffled air-cooled engines. The new high temperature cable appears to be satisfactory for all installations."

NEW CLASS TO BEGIN TRAINING AT RANDOLPH FIELD, TEXAS

A total of 159 students, comprising 8 Air Corps officers, holding lighter-than-air flying ratings; 6 officers from other branches of the Army, 11 enlisted men from the Army Air Corps, one from the Infantry, one from the Signal Corps, and 132 candidates from civil life, will report to the Commandant of the Air Corps Primary Flying School, Randolph Field, Texas, during the latter part of June, and will constitute the July class to begin the year's course of flying instruction at the Air Corps Training Center.

The eight months' course at Randolph Field is divided into the Primary and Basic stages, each of four months' duration. During the Primary Stage, students fly the primary training airplane, and the probability of their successfully completing the entire flying course generally hinges upon the progress they make during these first four months. Upon being transferred to the Basic Stage, students fly the Basic Training plane, the controls of which are more delicate. This airplane serves as the medium of transition to the regular service types of airplanes which are used when graduates of the Primary Flying School are transferred to the Advanced Flying School at Kelly Field, Texas, for their final four months of the flying course.

Those Air Corps officers graduating from the Advanced Flying School will go through the formality of annexing two additional flying ratings, those of "Airplane Pilot" and "Airplane Observer" to the two they already hold, namely, "Airship Pilot" and "Balloon Observer." Other graduates will also receive the two above named heavier-than-air ratings. The successful officers of other branches of the service will be transferred to the Air Corps, while the 11 enlisted men and 132 civilians, training under the status of Flying Cadets, will be assigned to duty with Air Corps tactical squadrons for the period of one year. At the end of that time, provided their services have proven satisfactory, they are commissioned second lieutenants in the Air Reserve and, if the necessary funds are available, they are assigned to tactical squadrons for another year of active duty, this time under their status as Reserve officers.

In the matter of representation among the various States of native sons in the entering class of Flying Cadets at the Air Corps Training Center, the keen rivalry heretofore always existing between the States of California and Texas, still prevails, although a formidable contender - the State of Washington - has now entered the field. In the forthcoming July Class, Texas contributes 21 students, closely followed by California with 20 and Washington with 11.

The cities of Seattle and Los Angeles are tied for first place in contributing "local boys" to the new class, each having 5. Dallas and San Antonio, Texas, each have 4 representatives.

Roster of July Class at Primary Flying School

OFFICERS, AIR CORPS

Captain Karl S. Axtater	Osborn, Ohio
Captain Courtland M. Brown	Natick, Mass.
Captain Douglas Johnston	Alton, Ill.
1st Lieut. Uzal G. Ent	Northumberland, Pa.
1st Lieut. Reginald R. Gillespie	Spencer, Iowa
1st Lieut. Ralph E. Holmes	Walnut Creek, Calif.
1st Lieut. Wilfred J. Paul	White Plains, N.Y.
1st Lieut. John G. Salsman	Madison, Wis.

OFFICERS - OTHER BRANCHES

Second Lieutenants

Stephen O. Fuqua, Inf.	Washington, D.C.
Donald F. Buchwald, Inf.	Marshalltown, Iowa
Richard T. Coiner, Cav.	Washington, D.C.
Wm. J. Holzapfel, F. A.	Racine, Wis.
Charles E. Brown, Inf.	Cordele, Ga.
Edward G. Winston, Inf.	Maryland

FLYING CADETS - CIVILIANS

Howard F. Pringle, Jr.	Mobile, Ala.
John Clinton Williams	Sylacauga, Ala.
Beverly Pierce Head, Jr.	Tuscaloosa, Ala.
Albert N. Kluthe	Ansheim, Calif.
Jo K. Warner	Berkeley, Calif.
Clifford D. Maddux	Brawley, Calif.
John P. McClimont	Cambria, Calif.
James Lee Bledsoe	Los Angeles, Calif.
Burton Rolland Ellison	Los Angeles, Calif.
Lee M. Greenleaf	Los Angeles, Calif.
Gordon H. Pierce	Los Angeles, Calif.
Lawrence F. Converse	Glendora, Calif.
Hadley Vincent Saehlenou	Hollywood, Calif.
Frank E. Mears, Jr.	Monrovia, Calif.
Herman V. Estes	Palo Alto, Calif.
Paul Howard Dane	Pasadena, Calif.
William Waring Miller	San Diego, Calif.
Milton Scott Adair	San Francisco, Calif.
Thomas Kerne Hampton	San Marino, Calif.
Roy A. Seaver	Santa Ana, Calif.
Howard L. Buller	University, Calif.
Adam Joseph Heintz	Greeley, Colo.
H. L. Jackson	New Britain, Conn.
William George Graff	Washington, D. C.
Alton B. Moody	Washington, D. C.
Whitfield T. Scarboro	Tifton, Ga.
Winston Irving Jones	Moscow, Idaho
Donald Ellis Ridings	Moscow, Idaho
Homer Peterson	Potlach, Idaho
Vernon Donald Hansen	Chicago, Ill.
Charles F. Mudgett, Jr.	Chicago, Ill.
William James Pinkerton	Rushville, Ill.
Oscar H. Bizzelle	Urbana, Ill.
Charles Wesseler Bicking	Evansville, Ind.
Forrest Edmund Beeson	Indianapolis, Ind.
Gilbert Buren Baird	Kokomo, Ind.
John Oliver Bradshaw	West Lafayette, Ind.
Gordon Russell Kennel	Ames, Iowa
Norman C. Osher	Graettinger, Iowa
Bernard A. Te Paske	Orange City, Iowa
Elwin Lohse	Schleswig, Iowa
John L. Matthews	Kansas City, Kans.
William G. Montague	Ashland, Ky.
Charles W. Anderson	Louisville, Ky.
Robert Wilton Fausel	Louisville, Ky.
John William Glynn	Alexandria, La.

Cecil M. Hill	Columbia, La.	R. Rodney Massie, Jr.	Clifton Forge, Va.
John Bauer O'Brien	Cumberland, Md.	James W. Lindsay	Lovettsville, Va.
Aaron Hardy Ulm, Jr.	Brookline, Mass.	Harry Spack	Richmond, Va.
Robert Franklin Hardy	Flint, Mich.	George William Hogg	Bremerton, Wash.
Russell W. Luzius	Lincoln Park, Mich.	John Allison Pechulis	Pullman, Wash.
Herbert A. Peschel	Breckenridge, Minn.	James M. Erwin	Pullman, Wash.
Jack E. Hamilton	Duluth, Minn.	Joe Francis Radek	Puyallup, Wash.
George Edward Clausen	Minneapolis, Minn.	Ted Sinclair Faulkner	Seattle, Wash.
Paul John Gilloth	Minneapolis, Minn.	Paul J. McMahon	Seattle, Wash.
Maurice Dale	St. Cloud, Minn.	Robert Becke Powers	Seattle, Wash.
Vern L. McMurrin	St. Paul, Minn.	Vernon B. Thatcher	Seattle, Wash.
Vernon Alton Kelly	Anding, Miss.	Charles Richard Wheeler	Seattle, Wash.
Melville Whitnel Beardsley	Kansas City, Mo.	Willard Dudley Griffith	Spokane, Wash.
Blake Workman	St. Louis, Mo.	Thomas Eastman Sandegren	Tacoma, Wash.
Lloyd Eyre	Augusta, Mont.	Paul Frederick Fisher	Charleston, W. Va.
Edward F. Cullerton	Butte, Mont.	Lawrence E. Stewart	Montgomery, W. Va.
Richard Caldwell Shaw	Missoula, Mont.	Raymond T. Snider	Sharpless, W. Va.
George T. Richardson	Kearney, Neb.	Roy L. Thompson	Frederic, Wis.
George L. Gottschalk	Dayton, Nevada		
George Boyd Adamson	Reno, Nevada	FLYING CADETS - ENLISTED MEN, A.C.	
J. Robert Adams	Lincoln Park, N. J.	Pvt. 1st Cl. Clyde R. Russell	Chandler, Ariz.
Kevin Burke	Buffalo, N. Y.	37th Attack Squadron, Langley Field, Va.	
Lawrence K. Brooks	Clayton, N. Y.	Pvt. James Ferguson	Whittier, Calif.
Howard E. Jackson	New York, N. Y.	Station Complement, March Field, Calif.	
Anthony Abbatiello	Schenectady, N. Y.	Pvt. John N. Reynolds, Jr.	Los Angeles, Calif.
James G. Blair	Yonkers, N. Y.	53d School Squadron, Randolph Field, Texas	
William Lewis Curry	Raleigh, N. C.	Pvt. Walph W. S. Catlin	Bay City, Mich.
Roy William Osborn	Sanborn, N. D.	Pvt. Fritz Krueger	Mt. Vernon, Ky.
Irwin W. Wander	Ashland, Ohio	A.C. P.F.S. Det., Randolph Field, Texas	
Francis Horace McCrory	Bowling Green, Ohio	Pvt. Oscar Cohen	Orange, N.J.
Robert Daniel Armstrong	Cincinnati, Ohio	Hqrs. Squadron, Randolph Field, Texas	
Paul Weitzel Zehrung	Dayton, Ohio	Pvt. Claude C. Moose	Allentown, Pa.
George E. Schaetzel	Mt. Healthy, Ohio	Station Complement, Langley Field, Va.	
Roy M. Long	McAlister, Okla.	Pvt. Homer C. Ellette	Sturgis, S.D.
Paul Franklin Helmick	Corvallis, Ore.	75th Service Sqdn., Wheeler Field, T.H.	
Royce G. Kunze	Detroit, Ore.	Pvt. Rhoe E. Harris	Cleburne, Texas
Richard Charles Merrick	Portland, Ore.	62d Service Sqdn., Brooks Field, Texas	
Howard F. Bronson, Jr.	Harrisburg, Pa.	Pvt. Charles T. Chapman, Jr.	Corpus Christi, Tex.
Richard Dale McCloskey	Lancaster, Pa.	53rd School Sqdn., Randolph Field, Texas	
Paul Stefan Balas	McKeesport, Pa.	Pvt. Robert Leslie Grove	Dallas, Texas
Charles Milton Merriman	Wilmerding, Pa.	53rd School Sqdn., Randolph Field, Texas	
Halbert Hammond Acker	Anderson, S.C.	FLYING CADETS, ENLISTED MEN, OTHER BRANCHES	
Robert LeRoy Stroud	Chester, S.C.	Pvt. Albert J. Baumler	Trenton, N.J.
Thomas Jefferson Craig	Columbia, S.C.	Co. B, 51st Sig. B'n, Fort Monmouth, N.J.	
Wilkes S. Barnett	Greenville, S.C.	Pvt. Wiley G. Wells	Morehead City, N.C.
Edward W. Ketcham	Madison, S.D.	26th Infantry, Plattsburgh Bks., New York	
Morris Gould Harrison	Chattanooga, Tenn.		
Christopher G. Hopkins	Nashville, Tenn.	---	
Frank Van Noy	Amarillo, Texas		
Charles L. Caldwell	Austin, Texas	Major Carlyle H. Fidenour, Group Operations	
Ray Hamilton Martin	Austin, Texas	Officer, Hamilton Field, Calif., is pushing the	
Hugh Ruther Hall	Dallas, Texas	100-hour recommendations of the War Department,	
Wonderful Agib Trembly	Dallas, Texas	as laid down in Circular No. 6. All pilots of	
John Clark Wilder	Dallas, Texas	the 11th Bombardment Squadron have qualified,	
Wilbur Ralph Mahan	Denton, Texas	and the pilots of the other organizations will	
William Renwick Nevitt	Houston, Texas	be qualified before the end of the Fiscal Year	
Harvey Haydon Whitfield	Houston, Texas	1935. Major Ridenour selected Captain C.B.	
James Harvie Patman	Hughes Springs, Texas	Stone, III, and Lieuts. William Ball and	
Alton B. Williamson	Pearsall, Texas	Richard C. Lindsay to act as his assistants in	
Glenn S. Fikes	San Antonio, Texas	this flying training schedule.	
John Melvin Hansell	San Antonio, Texas	---	
Hilmer Luetcke	San Antonio, Texas		
Chester Lee Sluder	San Antonio, Texas		
Robert L. Bullock, Jr.	Taylor, Texas	Effective July 1, 1935, there will be formed	
James Marion Jones	Temple, Texas	in the Office of the Chief of the Air Corps as	
Edward Miles Strieber	Yorktown, Texas	additional division, to be known as the Reserve	
James William Haws	Provo, Utah	Division, which will handle all affairs now	
		handled by the Reserve Section, which is discon-	
		tinued, and, in addition, all Reserve Training	
		affairs now under the Training and Operations Div.	

B I O G R A P H I E S

Colonel Gerald C. Brant

Colonel Gerald C. Brant, Air Corps, Wing Commander, 3rd Wing, GHQ Air Force, was born at Chariton, Iowa, June 29, 1880. Appointed to the United States Military Academy, he graduated therefrom in June, 1904, was commissioned a second lieutenant, and assigned to the 9th Cavalry.

After serving 14 years in the Cavalry, he applied for transfer to the Aviation Section, Signal Corps, and was appointed Major, Signal Corps, August 5, 1917. Touching on his transfer to the Aviation Section, when interviewed several years ago by a newspaperman in Hawaii, he drily remarked that he did so in order to get into a "safe" branch of the service.

Immediately following his appointment in the Signal Corps, Colonel Brant was ordered to Kelly Field, Texas, for flying training, which was interrupted in December of that year by the influx of more than 30,000 troops, for whom no accommodations were available. Everyone had to turn to and see that they were sheltered, fed, inoculated, trade-tested, uniformed and organized into squadrons. In connection with this work he became successively Adjutant of the 2nd Training Brigade, Executive Officer of Kelly Field No. 2, and Executive Officer of the Southern Training District which comprised all the flying schools in the South.

In April, 1918, having completed his flying training, he was appointed Commanding Officer of Kelly Field No. 2. In June of that year he was ordered to Washington and became Chief of Operations, Office of the Director of Military Aeronautics. During the months of October and November, he held the position of Assistant Director of Military Aeronautics. He received the rating of Junior Military Aviator as of November 15, 1918, and the rating of Airplane Pilot as of October 5, 1920.

Following the signing of the Armistice, Colonel Brant was named Chairman of the committee appointed to organize the Air Service on a peace-time basis.

Transferred from Washington early in 1919, for station at Ellington Field, Houston, Texas, he served as commanding officer of that field from February 6 to May 17, 1919, when he was assigned to duty as Department Air Officer, Eastern Department.

In the New York to Toronto Air Race in the Fall of 1919, Colonel Brant finished in second place. He also participated that year in the Transcontinental Reliability Test Race, but a broken oil pump caused him to crash in the Catskill Mountains, as a result of which he suffered several broken ribs.

Colonel Brant graduated from the Army School of the Line in 1921, from the General Staff School in 1922, and from the Army War College in 1923. From June 29th of the latter year until September 8, 1926, he served as a member of the War Department General Staff. His next assignment was that of Executive Officer in the Office of the Assistant Secretary of War for Aeronautics, a position he occupied until November 10, 1927, when he assumed command of Crissy Field, Presidio of San Francisco, Calif. He was promoted to Lieut.-Colonel, September 27, 1928.

In February, 1930, Colonel Brant was transferred to Mitchel Field, L.I., New York, where he served as Executive Officer of the 9th Observation Group. In September, 1930, being due for foreign service, he was transferred to the Hawaiian Department, where he served as Commanding Officer of the 18th Composite Wing and as Air Officer of the Hawaiian Department. This constituted his second tour of duty in Hawaii, although his first tour was of brief duration, he having been sent to the Islands from Washington in 1925 to command the defending Air Forces during the joint Army and Navy Maneuvers in that year.

Colonel Brant's tour of duty in Hawaii was extended to August, 1934, when he was assigned to Brooks Field, San Antonio, Texas, as Commanding Officer of the 12th Observation Group. In February, 1935, he was transferred to his present station, Barksdale Field, Shreveport, La., as Commanding Officer of the 3rd Wing, GHQ Air Force, with the temporary rank of Colonel.

Lieut.-Colonel Follett Bradley ✓

Lieut.-Colonel Follett Bradley, Air Corps, Assistant Chief of Staff, G-2, GHQ Air Force, Langley Field, Va., was associated with military aviation in its early days for, as far back as 1912, he made several flights in the early Wright biplane at Fort Riley, Kansas, in connection with experiments in the conduct of Field Artillery fire. He was deeply interested in Army aviation practically at its very inception, and on several occasions made application for detail in the Aviation Section, Signal Corps, but the exigencies of the service were such that, while he served with this branch for some months during the course of his duty with the A.E.F. overseas, it was not until July 1, 1920, that he was permanently transferred to the Air Service with the rank of Major.

Col. Bradley was born at Omaha, Nebraska, February 12, 1890. Graduating from the United States Naval Academy, June 4, 1910, he was commissioned Ensign, and served in the Navy until January 24, 1912, when he accepted a commission as second lieutenant of Field Artillery, U.S. Army. He

was promoted to 1st Lieutenant, July 1, 1916, and to Captain, May 15, 1917. From June 20, 1914, to August 13, 1917, he served a detail in the Ordnance Department, during the course of which time he graduated from the Ordnance School of Application.

In the World War, Col. Bradley held the temporary rank of Major, Field Artillery, National Army, from July 9, 1918, to August 30, 1918, and that of Lieut.-Colonel from the latter date to February 13, 1920, when he reverted to his regular rank.

During the year 1916, Col. Bradley learned to fly at Mineola, L.I., New York, in his own time and at his own expense. In August, 1917, he was ordered to duty overseas, serving under the Air Commander, A.E.F., Zone of Advance, on duty connected with the armament of airplanes and aerial gunnery. During his service overseas, he piloted Curtiss, Nieuport, Spad and DeHaviland type airplanes. On November 26, 1917, he passed the examination for the rating of Junior Military Aviator, and he received this rating as of that date.

Relieved from duty with the Air Service on January 10, 1918, Col. Bradley was assigned to the 17th Field Artillery. In September, 1918, he returned to the United States and was placed on duty as Instructor at the Artillery School of Fire at Fort Sill, Oklahoma. During the course of his service at this post, he held at different times the positions of Director, Artillery School of Fire; Officer in Charge of Flying; Commandant, Air Service Observation and Communications School, and Executive Officer of that School. In the meantime, he availed himself of every opportunity to keep in flying practice, and passing the examination for the rating of Airplane Pilot, he received this rating on August 12, 1920.

In August, 1921, Col. Bradley was assigned to duty as student at the Air Service Engineering School at McCook Field, Dayton, Ohio, and upon his graduation therefrom in August of the following year, was transferred to Chamute Field, Rantoul, Ill., for duty as Assistant Commandant of the Air Service Technical School.

Transferred to duty in the Panama Canal Department in August, 1923, he served in the dual capacity of Commanding Officer of France Field and the 6th Composite Group. He also served for a time as Air Officer of the Panama Canal Department. Upon the completion of his tour of duty in Panama, he was, in September, 1926, assigned as student at the Air Corps Tactical School, then at Langley Field, Va. Graduating the following year, he continued in the capacity of student for another year, this time at the Command and General Staff School at Fort Leavenworth, Kansas. He then returned to Langley Field for duty as Instructor at the Tactical

School, and held also the position of Director of Instruction.

While stationed at Chamute Field, Col. Bradley participated as pilot in the Pulitzer Air Races held in the Fall of 1922 at Selfridge Field, Mt. Clemens, Mich., and took second place in the contest for the Liberty Engine Builders' Trophy.

During the period from August, 1931, to June, 1933, he was again on duty as student, completing the one-year courses at the Army War College, Washington, D.C., and the Naval War College at Newport, R.I.

In June, 1933, Col. Bradley was assigned to duty at Mitchel Field, N.Y., as Commanding Officer of the 9th Observation Group. When the Army Air Corps took over the operation of the Air Mail, February - June, 1934, he served in the capacity of Chief Inspector. In June, he was detailed as a member of the War Department, General Staff, and assigned to the War Plans Division, remaining on this duty until March 1, 1935, when he was assigned to duty at the Headquarters of the GHQ Air Force, Langley Field, Va., as Assistant Chief of Staff, G-2, with the temporary rank of Lieut.-Colonel.

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PHOTOGRAPHIC RECORD OF AERIAL BOMBING ✓

The 11th Photo Section, stationed at Wheeler Field, T.H., made a photographic record of the high altitude bombing recently conducted at Waimanalo. The photographic plane took off from Wheeler Field at 7:00 a.m., and arrived at Waimanalo 30 minutes later. The final bombing schedule was obtained, and contact was maintained with the radio station at Bellows Field, so that the photographic flights were coordinated with the bombing. Photographs of the actual explosions were obtained of every bomb dropped during each phase. After the phases were completed, a vertical photograph of the target was taken, showing the disposition of the various bombs.

During the entire bombing, men stationed on the observation hill took a complete record of the test with a 16 millimeter movie camera. These films are on file with the 11th Photo Section.

During the complete test, the total time flown was 5 hours, 55 minutes, in 5 flights. The total number of aerial exposures made was 50, and 45 prints were made of the results for file and future use.

No trouble was experienced in catching the bursts on the target. The distance flown from the target varied with the size of the bombs. On some of the smaller bombs the airplane was so close to the actual detonation that blurring of the photographs resulted. Had a photographic airplane of the Fairchild C-8 type been available, a longer focal length camera could have been used with much better results as to clarity and size.

INCREASE IN ENLISTED STRENGTH OF THE AIR CORPS

As a result of the provision in the Army Appropriation Bill, for the Fiscal Year ending June 30, 1936, increasing the enlisted strength of the United States Army by 46,250 enlisted men, there was allotted to the Air Corps, effective July 1, 1935, a total of 1442 additional privates to bring up its total enlisted strength to 16,000, including 365 Flying Cadets. Provision was also made by the War Department for the allotment of 344 additional Quartermaster and Signal Corps men to Air Corps stations.

The distribution of these additional enlisted men to Air Corps fields and stations is given below, as follows:

<u>FIRST CORPS AREA</u>	
<u>Boston, Mass.</u>	<u>Increase</u>
1st Corps Area Air Corps Det.	4
<u>SECOND CORPS AREA</u>	
<u>Mitchel Field, N.Y.</u>	
Det. 4th Sig. Service Company	7
Detachment, Quartermaster Corps	12
97th Observation Squadron	1
9th Bombardment Group Headquarters	4
Station Complement	75
<u>Governors Island, N.Y.</u>	
2nd Corps Area A.C. Detachment	3
<u>THIRD CORPS AREA</u>	
<u>Bolling Field, D.C.</u>	
Det. 16th Signal Service Company	7
Detachment, Quartermaster Corps	11
100th Service Squadron	50
Station Complement	80
<u>Burgess Field, Pa.</u>	
Det. 16th Signal Service Company	1
<u>Fort Humphreys, D.C. (A.W.C.)</u>	
Det. 16th Signal Service Company	3
<u>Langley Field, Va.</u>	
Det. 16th Signal Service Company	12
Detachment, Quartermaster Corps	20
Hq. and Hq. Sqdn. GHQ Air Force	100
2nd Bombardment Group Hqrs.	4
33rd Pursuit Squadron	4
35th Pursuit Squadron	4
36th Pursuit Squadron	4
37th Attack Squadron	4
Station Complement	93
<u>Aberdeen Proving Ground, Md.</u>	
Air Corps Detachment	5
<u>Middletown Air Depot, Pa.</u>	
2nd Transport Squadron	15
<u>Baltimore, Md.</u>	
3rd Corps Area Air Corps Det.	5
<u>FOURTH CORPS AREA</u>	
<u>Barksdale Field, La.</u>	
Det. 5th Signal Service Company	4
Detachment, Quartermaster Corps	15
8th Attack Squadron	4
13th Attack Squadron	4
90th Attack Squadron	4
55th Pursuit Squadron	4
77th Pursuit Squadron	4
79th Pursuit Squadron	4
Station Complement	51
<u>Fort McPherson, Ga.</u>	
4th Corps Area Air Corps Det.	8

<u>4TH CORPS AREA (Cont'd)</u>	
<u>Maxwell Field, Ala.</u>	<u>Increase</u>
Det. 5th Signal Service Company	4
Detachment, Quartermaster Corps	5
A.C. Tactical School Detachment	99
51st Attack Squadron	4
87th Pursuit Squadron	4
<u>FIFTH CORPS AREA</u>	
<u>Fairfield Air Depot, Ohio.</u>	
Flight "A", 1st Transport Squadron	15
<u>Wright Field, Ohio.</u>	
Flight "B", 1st Transport Squadron	15
<u>Fort Hayes, Ohio.</u>	
5th Corps Area Air Corps Detachment	10
<u>SIXTH CORPS AREA</u>	
<u>Chanute Field, Ill.</u>	
Det. 6th Signal Service Company	4
Detachment, Quartermaster Corps	5
98th Service Squadron	2
48th Pursuit Squadron	4
A.C. Technical School Detachment	24
Unassigned Students	250
<u>Chicago, Ill.:</u>	
Det. 6th Signal Service Company	6
Det. Co. A, 3rd M.R. Bn.	22
6th Corps Area Air Corps Detachment	1
<u>Scott Field, Ill.</u>	
Det. 6th Signal Service Company	5
Detachment, Quartermaster Corps	8
Station Complement	105
<u>Selfridge Field, Mich.</u>	
Det. 6th Signal Service Company	5
Detachment, Quartermaster Corps	12
17th Pursuit Squadron	4
27th Pursuit Squadron	4
94th Pursuit Squadron	4
Station Complement	88
<u>SEVENTH CORPS AREA</u>	
<u>Omaha, Neb.</u>	
7th Corps Area Air Corps Detachment	4
<u>EIGHTH CORPS AREA</u>	
<u>Brooks Field, Texas.</u>	
Det., 7th Signal Service Company	6
Detachment, Quartermaster Corps	13
62d Service Squadron	1
Station Complement	49
<u>Dryden, Texas.</u>	
Det., 7th Signal Service Company	1
<u>Kelly Field, Texas.</u>	
Det. 7th Signal Service Company	12
Detachment, Quartermaster Corps	10
<u>Marfa, Texas (Fort D.A. Russell)</u>	
Det., 7th Signal Service Company	4
Detachment, Quartermaster Corps	30
<u>Randolph Field, Texas.</u>	
Det., 7th Signal Service Company	2
Detachment, Quartermaster Corps	8
67th Service Squadron	1
A.C. Primary Flying School Detachment	9
<u>San Antonio Air Depot</u>	
3rd Transport Squadron	15
<u>Fort Sam Houston</u>	
8th Corps Area Air Corps Detachment	15
<u>NINTH CORPS AREA</u>	
<u>Rockwell Air Depot</u>	
4th Transport Squadron	15

NINTH CORPS AREA (Continued)		
<u>Hamilton Field, Calif.</u>		Increase
Det., 8th Signal Service Company		7
Detachment, Quartermaster Corps		20
7th Bombardment Group Headquarters	4	
Station Complement	46	
<u>March Field, Calif.</u>		
Det., 8th Signal Service Company		9
Detachment, Quartermaster Corps		17
34th Attack Squadron	4	
73rd Attack Squadron	4	
95th Attack Squadron	4	
<u>Rockwell Field, Calif.</u>		
Det., 8th Signal Service Company		5
Detachment, Quartermaster Corps		12
19th Bombardment Headquarters	4	
Station Complement	61	
<u>Crissy Field, Calif.</u>		
91st Observation Squadron		25
<u>Presidio of San Francisco, Calif.</u>		
9th Cor Area A.C. Detachment		10
<u>Recapitulation:</u>		
Air Corps Enlisted Men -	1,442	
Signal Corps Enlisted Men -	104	
Quartermaster Corps Enlisted Men -	198	
Motor Repair enlisted men	22	
Total	1,766	
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NEW STUDENT CLASS AT AIR CORPS TACTICAL SCHOOL

The following-named Air Corps officers have been assigned to duty as students in the next class at the Air Corps Tactical School at Maxwell Field, Montgomery, Ala.:

MAJORS

William E. Kepner Raymond E. O'Neill

CAPTAINS

Orvil A. Anderson	Aaron E. Jones
Eugene B. Bayley	Newton Longfellow
Levi L. Beery	Alfred J. Lyon
Hugh A. Bivins	Harold M. McClelland
John K. Cannon	Harold A. McCinnis
Harold L. Clark	George V. McPike
John M. Clark	Richard H. Magee
Samuel M. Connell	Merrill D. Mann
Joseph H. Davidson	Russell L. Maughan
Lewis A. Dayton	Leland W. Miller
Claude E. Duncan	William C. Morris
Ira C. Eaker	Edward M. Powers
Donald D. FitzGerald	Max F. Schneider
Thad V. Foster	Leon E. Sharon
Dale V. Gaffney	Edgar P. Sorenson
Harry A. Halverson	Charles E. Thomas, Jr.
Earl S. Hoag	Bernard J. Toohar
Charles A. Horn	Kenneth B. Wolfe
Cortlandt S. Johnson	

FIRST LIEUTENANTS

Charles H. Caldwell	Thomas M. Lowe
Lawrence J. Carr	Don W. Mayhue
Benjamin W. Chidlaw	Ernest S. Moon
Alden R. Crawford	William D. Old
James T. Cumberpatch	James E. Parker
John H. Dulligan	Donald B. Phillips
Ford L. Fair	Elwood R. Quesada
Homer W. Ferguson	Augustine F. Shea
Carlisle I. Ferris	Ralph A. Snavely
Albert F. Glenn	Nathan F. Twining
Edmund C. Langmead	

COLONEL McCHORD TOURS SOUTH AMERICA

By the News Letter Correspondent

Like the fireman who put on "cits" and spent the day hanging around the engine house, Colonel William C. McChord, Commanding the 19th Composite Wing, Air Corps, Albrook Field, Canal Zone, took 25 days' leave during May and spent the whole period flying.

Cross-country flying in the Panama Canal Department is extremely limited, being confined to frequent short trips over the Panamanian jungles and an organizational flight to some adjoining Central American country. Flights outside of the Republic of Panama require diplomatic authority and they are infrequent.

So Colonel McChord decided to see South America as a passenger on the Pan-American - Grace Airways. During a period of 24 days, the Wing Commander covered approximately ten thousand miles. The itinerary of his flight included stop-overs for very brief periods at Guayaquil, Colombia; Lima, Peru; Antofagasta, Chile; Montivideo, Uruguay, and Buenos Aires, Argentina. Colonel McChord pronounced the trip as most interesting and instructive. He complained bitterly, however, that in order to make his schedules he was forced to arise almost every morning at 4:00 a.m. in a cold hotel room.

The traveler was greatly impressed with the progress already made by commercial aviation in South America. "The people of South America," he said, "are now reaching in a few hours remote sections of the country which a few years ago were reached only after tedious journeys requiring days and sometimes weeks. While the amount of commercial aviation in South America is impressive, the field has been by no means fully developed. Agents of our own and foreign manufacturers are on the job, and the near future is certain to see increased development of commercial aviation throughout South America."

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TEMPORARY PROMOTIONS

To Major

Captain Walter B. Hough, June 30, 1935, as Executive Officer, Station Complement, Hamilton Field, Calif.

Captain Robert Olds, June 30, as Asst. to Asst. Chief of Staff, G-2, GHQ Air Force, Langley Field.

Captain Christopher W. Ford, June 17, C.O., 3d Pursuit Squadron, Clark Field, P.I.

Captain Orlo H. Quinn, C.O., 58th Service Sqdn. Langley Field, Va., June 19, 1935.

Captain Ralph H. Wooten, June 30, as Asst. to Asst. Chief of Staff, G-4, GHQ Air Force, Langley Field, Va.

To Lieutenant-Colonel

Major Henry J.F. Miller, June 18, as Air Officer, Sixth Corps Area.

Major Horace N. Heisen, June 20, as Commander, Station Complement, Rockwell Field, Calif.

To Captain

1st Lt. Thomas W. Steed, Operations Officer, 3rd Pursuit Squadron, Clark Field, P.I., June 17.

1st Lt. Wm. P. Sloan, June 20, Commander, Flt. A, 13th Attack Squadron, Barksdale Field, La.

V-6817, A.C.

ROSTER OF JUNE, 1935, GRADUATING CLASS FROM AIR CORPS ADVANCED FLYING SCHOOL

Officers

Captain Edgar P. Sorenson, Air Corps (Bomb.)
 1st Lieut. John J. Keough, Air Corps (Attack)
 2nd Lieut. John B. Ackerman, Coast Artillery Corps (Obs.)
 2nd Lieut. Clayton E. Hughes, Field Artillery (Pursuit)
 2nd Lieut. Edward H. Hale, Field Artillery (Obs.)

Flying Cadets

Attack Pilots

Robert P. Brush South Pasadena, Calif.
 Moultrie P. Freeman Clinton, S.C.
 George W. Hazlett Tarentum, Pa.
 Charles D. Jones Jackson, Miss.
 Preston P. Pender Hendersonville, N.C.
 Robert G. Polhamus San Marino, Calif.
 Charles T. Raines Vienna, Ga.
 James L. Travis Portland, Ore.
 Don M. Wood Eaton, Colo.

Bombardment Pilots

Claude B. Adair Columbia, S.C.
 Paul E. Amspaugh Cleveland, Ohio
 Frank W. Brendle Dallas, Texas
 Blaine B. Campbell Salt Lake City, Utah
 William E. Davis, Jr. Wilmington, N.C.
 John W. Graham Fort Worth, Texas
 Sam H. Hale Greenville, S.C.
 Mathias F. Junger Cincinnati, Ohio
 Herbert Morgan Jr. Freedom, Pa.
 Benjamin J. Pearson Seattle, Wash.
 Alton T. Peterson Bridgeport, Conn.
 James A. Philpot Pomona, Calif.
 William P. Ragsdale, Jr. McAllen, Texas
 Wilkie A. Rambo Gonzales, Texas
 Robert R. Reed Oklahoma City, Okla.
 Clarence L. Schmid Palo Alto, Calif.
 Emil S. Scott Jourdanon, Texas
 Douglas W. Smith Los Angeles, Calif.
 Thomas S. Terrill Pasadena, Calif.
 James F. Whisenand Los Angeles, Calif.
 Paul B. Williamson Peoria, Ill.

Observation Pilots

Thomas J. Barrett Kenton, Ohio
 William P. Fisher Southern Pines, N.C.
 Victor R. Haugen Seattle, Wash.
 Herbert H. Hoover Knoxville, Tenn.
 Cedric E. Hudgens Athens, La.
 Douglas S. McElwain Ann Arbor, Mich.
 Harry W. Markey Beaverdam, Va.
 John W. Massion Salt Lake City, Utah
 Hilmer C. Wilson Vashon, Wash.
 Abraham D. Olson Little Fork, Minn.
 John N. Rodgers Bellevue, Pa.
 Argyle L. Smith Venice, Calif.
 Lawrence M. Thomas Cooper, Texas
 Walter F. Wilbur Gilbert, Ariz.
 Monty D. Wilson Spokane, Wash.
 Robert B. Wamble, Jr. Baltimore, Md.

Pursuit Pilots

David C. Barrow, Jr. DeSoto City, Fla.
 Earl E. Bates Winnetka, Ill.
 Jack W. Berry Cornwallis, Ore.
 Irving L. Branch Glenbrook, Conn.
 William B. David Calhoun, Ga.
 Donald S. Dunlap North East, Pa.
 Joseph F. Feaganes Wytheville, Va.
 Kenneth W. Lawver Freeport, Ill.
 Frederick C. Long Palouse, Wash.
 Elmer E. McKeoson Richmond, Va.
 Jack S. Marks Los Angeles, Calif.
 William M. Reeder Atlanta, Ga.
 Richard P. Schumacher Los Angeles, Calif.
 Allan J. Sewart, Jr. Murfreesboro, Tenn.
 Charles E. V. Smith Hastings, Neb.
 John C. Ziler Huntington Park, Calif.
 Donald R. Strother Maryville, Mo.

The Attack Pilots among the graduated Flying Cadets were assigned to station at Barksdale Field, Shreveport, La.; Bombardment Pilots to Langley Field, Va.; Observation Pilots to Mitchel Field, N.Y., and Pursuit Pilots to Selfridge Field, Mt. Clemens, Mich. Four Cadets among the Observation pilots, Messrs. Haugen, Hudgens, Wilbur and Wilson, are assigned to the 12th Observation Group at Brooks Field, Texas.

The officer graduates are assigned to stations, as follows: Major Sorenson as student at the Air Corps Tactical School, Maxwell Field, Ala.; Lieut. Keough to Chanute Field, Ill.; Lieuts. Ackerman, Hughes and Hale to Maxwell Field, Montgomery, Ala.





The following items have been published to the personnel of the GHQ Air Force through the medium of Air Force Bulletins issued by the Air Force Headquarters:

NO PEACE AND WAR STRENGTH TABLES OF ORGANIZATION: For the present period of test of the GHQ Air Force, there has been established but one set of tables of organization, - not two, peace and war. This is necessary for an M-day air force. The high technical skill required to perfect the teamwork essential to an air organization in the performance of a mission demands a continuous day to day peace time existence on the same basis as will obtain upon the outbreak of war. The efficiency of any air unit would be seriously reduced if it were required to undergo a violent period of transition from a peace status to a war status.

MOBILITY: a. Mobility for the GHQ Air Force is its capacity to reach the required theater of operations, and operate therein. The degree of its mobility is measured by the shortness of the time required to effect the movement of the tactical units, and to perfect the required logistical organization for shelter, subsistence, supply, maintenance, and communications.

b. Note carefully that the prompt movement of combat units to destination, though important, is but a part of strategic mobility. In addition to this movement of combat units, it is necessary so to establish and develop the service of supply and maintenance as to be ready for the combat units upon their arrival. To do this, it is necessary for all supply services to move their stocks, and establish their labor at the points of consumption required by the combat units concurrently with the movement of these units. Mobility of supply is coequally essential to mobility of combat units.

SHELTER, SUBSISTENCE AND OTHER SERVICES: There are three methods by which shelter, subsistence and other services necessary to GHQ Air Force units in the field may be provided. They are:

a. Case I. Utilization of local civilian agencies. Shelter for personnel to

be contracted for in hotels, boarding houses, warehouses, public buildings, etc. Feeding to be accomplished by restaurants, contract with caterers, etc. Transportation and trucking by contract with trucking companies, hire of boats, automobiles, servicing trucks, airplanes and public carriers. Communications by toll, lease and contract with telephone and telegraph companies. Hospitalization, medical attention, and funerals by contract with civilian hospitals, doctors and undertakers, respectively. Similarly, all other necessary services that can be arranged and paid for locally, should be utilized.

b. Case II. Utilization of facilities normally provided for other arms by the War Department, such as shelter and food by the Quartermaster Corps, communications by the Signal Corps, medical attention and hospitalization by the Medical Corps.

c. Case III. Utilization of special equipment and methods developed by the Air Corps for its own use. Such special equipment includes the lightweight Air Corps tent, the sleeping bag, the gasoline field range, the drum servicing units, the five-gallon gasoline and oil can, the light tractor, the field lighting units, etc., all transportable by air.

DISCUSSION OF CASES: It will probably be seldom that a concentration of the entire GHQ Air Force can be served exclusively by any one of the three cases described above. However, in some situations, squadrons and groups may be served exclusively according to the case most applicable.

a. Case I. The utilization of local civilian agencies where they exist in whole or in part should be the most efficient, satisfactory, and economical. Modern airplanes require hard surfaces for operations. Prepared hard surfaced airdromes are found ordinarily only near civilian communities or at Army permanent stations. These communities and Army stations nearly always have nuclei of most of the facilities mentioned under Case I. These nuclei can be readily adapted or expanded to meet the needs of Air Force units operating therefrom. However, even though service under Case I

may be most efficient and satisfactory, training under the other cases must be secured in peace time so as to be ready to operate thereunder in war when necessity so requires. Furthermore, even though Case I may be more economical, peace time appropriations so far have not been available under appropriate procurement authorities to permit wide application of this method. Accordingly, for the present at least, many of our peace time exercises and maneuvers must be served under Cases II and III, - at least in large part.

b. Case II. To operate under Case II requires cooperation on the part of all Theater and Corps Area Commanders in or through whose areas GHQ Air Force units operate. The staffs of the GHQ Air Force units concerned must anticipate their needs and work in close cooperation with the staff of the commander furnishing the service. Shelter, mess equipment, supplies, transportation, labor, etc., must be furnished by the commanders concerned, and delivered by them to the points of use by the tactical units. As GHQ Air Force units in war will usually operate from prepared bases far removed from ground troops and their service establishments, it seems unwise to complicate their logistical plans by requiring Corps Area commanders to serve GHQ Air Force units unless necessity so dictates. Furthermore, should the Corps Area commanders be required to serve the GHQ Air Force, they must grant it first priority, because it is an M-day force. To do so would probably place an intolerable burden on their facilities, already scarcely adequate to meet the demands of a general mobilization. In the abnormal case where there are no civilian facilities, or where they may have been obliterated by enemy action, Case II combined with Case III must be utilized, and will become normal.

c. Case III. In war, if and when the possibilities of Cases I and II have become exhausted, the GHQ Air Force must depend on such equipment and methods as the Air Corps may develop to permit the use against the enemy of the last airplane that can be flown. To be prepared to meet this situation, and to permit operations under Case III, will require intensive development and modification through actual use in field exercises and maneuvers, of the many items exemplified in paragraph 5c above. While these items will be developed primarily to meet the needs of last ditch resistance, many of them will be used under Cases I and II.

d. As operations under any one or combination of the three cases will present problems to be solved, peace time exercises and maneuvers must be held under all cases and combinations thereof. In that way only will a smoothly

functioning system be developed ready for immediate operation on M-day.

TRANSPORT: a. The Air Force to make maximum use of its inherent mobility must be as free as possible of ground agencies of transport, both for personnel and materiel. To this end the cargo transport has been developed for supply and maintenance purposes. This is strictly an agency of the service of supply and as such is vitally essential to the maintenance of combat units in the field. It therefore should never be diverted from its primary mission, except for brief periods of time to carry a peak load requirement of combat commanders, after which it should revert to its supply and maintenance employment.

b. In addition to the cargo transport airplanes of the supply service, personnel transports are provided to combat units. They normally remain under the control of tactical commanders. These transports are assigned to service squadrons to assist in the operation, supply and maintenance of the groups they support. Personnel transports are normally the same types as the cargo transports.

COMMUNICATIONS: The problem of communications under conditions that require the maximum mobility and/or dispersion is difficult of solution. The Air Force command net will maintain contact between the Air Force commander and the Wings and Groups within the capacity and limitations of radio communication. Augmentation of this means with and between these and lower units will involve wire and messenger. The physical limitations of radio and wire service may compel the liberal use of airplane courier, particularly for the transmission of written field orders.

TRAINING: In order that the Air Force may become welded into a powerful entity, it is essential that it be developed upon a firm foundation of properly trained echelons of command. To this end, field training will be a normal progression from squadron to group, to Wing, and finally to the fully developed Air Force. Each subordinate unit will be required to demonstrate its fitness to become a unit of the next higher organization. Small steps first, and a demonstration of lessons learned will be the method by which this will be accomplished.

INSPECTIONS: a. To make certain that the Air Force is in a state of readiness commensurate with its available equipment and personnel, inspections will be made at the proper times and places. To accomplish this, instructions have been issued which require adherence to existing procedure and a facing of actualities. The object of such inspections will be primarily to discover and remedy shortcomings in training and equipment, rather than to demonstrate how good the organization is. These inspections should not be confused with technical inspections, which will continue as in the past to be made under

the supervision of the Chief of the Air Corps.

b. Field inspections will be conducted in two distinct phases.

(1) By ordering the organizations into the field, as they exist, for the purpose of conducting inspections to determine the status of their equipment upon which they will have to depend for short periods of time while out of touch with their service squadrons;

(2) By pooling the resources of a senior organization to completely organize and equip a junior organization, so that it can take the field at full strength, supported by the service squadron or a suitable section thereof; this full strength organization to maintain itself and operate, for an indefinite length of time, for the purpose of determining the changes required in the tables of organization and equipment.

(3) The first phase can be most expeditiously accomplished either on or in close proximity to the home station. The second phase will require the occupation of an airdrome or area reasonably distant from the home station.

EQUIPMENT: The fact must be kept constantly in mind that the various supply branches of the Army are as vitally concerned in operations, maintenance and inspections as are Air Corps units.

Methods of storage and issue employed by the supply branches will be subject to severe criticism, if they are not capable of executing their supply function without delaying or hampering the operations of combat units. Combat personnel can no longer be called upon to do the great amount of warehousing, inspection, maintenance, etc., of supplies that has been customary in the past. It is essential that the Quartermaster, for instance, have his stock of field equipment so arranged that it can be issued upon 24 hours notice, to any organization requiring it, and be prepared to receive it back for repair and maintenance upon termination of the requirement. Combat units will not retain in their possession the field equipment furnished by the various supply agencies. This equipment will be warehoused by the responsible branches, ready for issue on short notice.

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TEXAS FLOODS

In the past few weeks Texas has experienced record-breaking floods in the central and southern portions of the State. Towns as large as Austin, Del Rio and Uvalde have been seriously damaged by the floods and highways, and railroads have been washed out in almost every direction. Communities and many families have been isolated by the rising waters which have caused scores of deaths and a tremendous amount of damage.

Kelly Field received numerous requests for assistance. On the evening of June 15th, the Mayor of Crystal City, Texas, telephoned to this station requesting that an immediate reconnaissance be made of the south side of the Nueces River, opposite Crystal City, to determine if any families were in immediate danger. Captain O.P. Weyland and 1st Lieut. F.H. Smith, who were practicing instrument flying in two BT airplanes, were recalled to this station by radio and sent on this mission. By the use of drop messages they communicated with those families in the danger area and dispatched a motor boat to their assistance. On the way home they dropped a message to the Mayor of Crystal City, who, using the Red Cross emergency code, replied that their messages had been understood. All of the families thus informed were able to escape without the loss of any lives.

On June 18th, Mr. Cecil Graham requested that an airplane from Kelly Field drop a message to the family of Mr. Charlie Mangum, who were living on

a ranch, 25 miles south of Fowlerton, which was in the path of flood waters of which they had no warning. First Lieut. R.D. Butler was dispatched with the message and, although it was dark before he reached Fowlerton, he located the house and dropped them the information.

Towns in the vicinity of Uvalde, particularly those to the North, were seriously damaged by the flood. Camp Wood was completely isolated, and provisions were badly needed. The necessary food supplies were obtained from the Red Cross agency in San Antonio and hauled to Kelly Field, where they were loaded into the specially designed containers for dropping such foodstuffs. After loading about 500 pounds of these supplies in each of two Bombers, Major R. D. Knapp and 1st Lieut. F.S. Stocks, the pilots, took off to deliver same. Major Knapp was accompanied by Private, 1st Class, W.B. Verbillion as radio operator; Corporal Jack Riley as crew chief, and Staff Sergeant Leo Post, who attended to the work of dropping the parachutes containing the food supplies. Flying with Lieut. Stocks were Staff Sgt. H.L. Chestnut, photographer; Corporal J.L. Crady, crew chief, and Pvt. E.P. Taylor, who handled the parachutes.

Arriving at Camp Wood, they delivered the bread, sugar, beans, potatoes, bacon, and other supplies, which received a hearty welcome from the inhabitants. Since it was impossible to reach Camp Wood except by air, the delivery of these supplies undoubtedly saved considerable suffering and possibly deaths from lack of food.

BIOGRAPHY OF GENERAL WESTOVER ✓

The senior Assistant Chief of the Air Corps, Brigadier General Oscar Westover, will complete his four-year tour of duty as Assistant Chief next December. General Westover was born at West Bay City, Mich., July 23, 1883. After graduating from High School, he entered the Army as an enlisted man on September 4, 1901, and served with Company "K," 3rd Battalion of Engineers, until June 15, 1902, when he entered West Point as a cadet. He graduated from West Point on June 12, 1906, and was assigned to the 14th Inf.

General Westover remained with the Infantry through the grades of Second and First Lieutenant, in each of which he served five years. During this period he served tours of duty in the Philippines and in Alaska, and detached service at the United States Military Academy, where he served first as Instructor and later as Assistant Professor of Drawing. His marksmanship won for him the Distinguished Marksman's Medal, and membership on the Infantry Rifle Team at the National Rifle Matches at Camp Perry in 1911. He was promoted to temporary Major in the Signal Corps on October 20, 1917, and assigned to duty in charge of the Signal Office at the Port of Embarkation, Hoboken, N.J. In June, 1918, he was assigned to the Bureau of Aircraft Production in charge of Storage and Traffic, receiving his promotion to Lieut.-Colonel, Air Service, August 14, 1918. In November, 1918, he was appointed Assistant Executive, Bureau of Aircraft Production, Washington, D.C., which office he held until July, 1919, when he was appointed Executive in the Office of the Chief of Air Service.

General Westover's outstanding service during the World War was recognized by the award of the Distinguished Service Medal, and his promotion to the grade of Colonel (emergency) on May 24, 1919.

In October, 1920, General Westover was assigned to take training at Omaha, Neb., and Ross Field, Calif. Upon graduation from the Balloon School at Ross Field with the rating of Balloon Observer, in 1921, General Westover was reassigned to duty in Washington as Chief, Balloon and Airship Division, Office, Chief of Air Service. While holding this position, he served on detached status for the purpose of participation, as aide, to Col. Lahm, in the National Balloon Race at Birmingham, Ala. He attended the Airship School at Langley Field, Va., from which he graduated in 1922 as Airship Pilot; and participated in the National Elimination Free Balloon Race at Milwaukee, Wis., which race he won by traveling to the vicinity of Lake St. John, Quebec Province, Canada, - a distance of 866 miles (almost twice the distance of the nearest competitor) in 16½ hours. He later represented the United States in the International

Gordon Bennett Balloon Race, which started at Geneva, Switzerland, in August, 1922, and which resulted in his detention in Hungary, where he was forcibly hauled down, while drifting low to obtain favorable winds, by peasants seizing the drag rope, and thereupon investigated by the gendarmes and other Hungarian authorities for violating Admiral Horthy's edict prohibiting the flight of foreign aircraft over Hungary.

In February, 1921, General Westover was appointed Director of Aircraft Production charged with the liquidation of the United States Spruce Production Corporation, a wartime production agency, a position which he has held continuously since that date, except for the period from July, 1928, to 1932.

In 1924 he was Executive Officer at Langley Field, Va., later in the year becoming the Commanding Officer of that Post and the Commandant of the Air Corps Tactical School which was then located there. After two years in this post, he entered the Tactical School as student, graduating in 1927. His next school tour was at the Command and General Staff School at Fort Leavenworth, Kans., from which he graduated in 1928, and he was retained as a member of the faculty there for four years.

In January, 1930, he received his promotion to Lieut.-Colonel, and two years later, December, 1931, his appointment as Assistant Chief of the Air Corps with the rank of Brigadier-General, to succeed Major-General B.D. Foulis, who had vacated that position to assume his duties as Chief of the Air Corps.

General Westover possesses all four aeronautical ratings bestowed by the Air Corps, and has had as well rounded service as any officer in the Corps. In 1933, he commanded the Air Corps maneuvers at March Field, Calif., during which practically all of the modern conceptions of the employment of air forces were tried out. His summary of the lessons learned during this maneuver furnished a valuable contribution to the advancement of the tactics and supply procedure of the Air Corps. He also participated in the Command Post Exercises held in New Jersey, in 1934, in the capacity of Commanding General, GHQ Air Force.

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On Air Corps map No. 2, Washington, D.C. to Uniontown, Pa., dated March, 1934, it is noted that the compass courses between Uniontown and Pittsburgh are reversed. The supply of maps carried by every Air Corps activity with this error should be corrected. It is also noted that the Army field on this map is shown as "Rogers Field." Air Corps activities have been moved from this field to the Pittsburgh Allegheny Airport, located approximately four miles south of Pittsburgh.

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NEWLY COMMISSIONED OFFICERS FOR THE AIR CORPS

The Secretary of War has approved the report of the Board convened to select the successful candidates for appointment as Second Lieutenant, Air Corps, Regular Army.

The final examination was conducted in the United States and foreign possessions, April 2-8, 1935, and approximately 475 candidates underwent examination. All candidates were graduates of the Air Corps Training Center, qualified airplane pilots and members of the Air Corps section of the Officers' Reserve Corps.

Of the 42 candidates selected, 40 are enlisted men of the Air Corps, Regular Army. The names of the successful candidates have been submitted to the U.S. Senate, and, upon confirmation, appointments will be tendered to those candidates, who are listed below in their order of standing, as follows:

<u>Name</u>	<u>Rank</u>	<u>Present Station</u>	<u>Home Address</u>
Clifton, Ray Willard	Staff Sergeant	Maxwell Field, Ala.	Gering, Nebraska
Wood, Randolph L.	Sergeant	Langley Field, Va.	Parksley, Va.
Johnson, Arnold Theodore	Corporal	Scott Field, Ill.	Wilmot, S. D.
Pitman, John David	Corporal	Barksdale Field, La.	Huntsville, Ala.
Stalder, Marvin Frederick	Private, 1st Cl.	Rockwell Field, Calif.	Riverside, Calif.
Parrish, Noel Francis	Private, 1st Cl.	Patterson Field, Ohio	Kingsville, Texas
Muehleisen, Dolf Edward	Private	Rockwell Field, Calif.	San Diego, Calif.
Swyter, Carl	Private	Fort Lewis, Wash.	Fort Lewis, Wash.
Weller, Richard Cole	Private	Mitchel Field, N.Y.	Hudson Heights, N.J.
Gavin, Edward Morris	Private	Maxwell Field, Ala.	Fort Gaines, Ga.
Jarmon, Robert Edward	Private	Crissy Field, Calif.	Los Angeles, Calif.
Crutcher, Harry, Jr.	Private	Randolph Field, Texas	Dallas, Texas
Malone, Jack Mason	Private	Brooks Field, Texas	Durant, Okla.
Moyers, Frank Neff	Private	March Field, Calif.	Highgrove, Calif.
Allee, Edward Schwartz	Private	Langley Field, Va.	Boston, Mass.
Renshaw, Harry Noon	Private	Barksdale Field, La.	Galveston, Texas
Stanley, Joseph Bynum	Private	Mitchel Field, N.Y.	Washington, D.C.
Langben, Thomas Frederick	Private	Barksdale Field, La.	Galveston, Texas
Sartain, Clarence Morice	Private	Brooks Field, Texas	San Antonio, Texas
Price, James Hughes	Private	Maxwell Field, Ala.	Floral, Ala.
Moore, Joseph Caruthers	Private	Kelly Field, Texas	Scooba, Miss.
Fulwider, Lawrence Scott	Private	Scott Field, Ill.	Bloomington, Ind.
Harris, Lester Stanford	Private	March Field, Calif.	Riverside, Calif.
Holteman, Eyvind	Private	Crissy Field, Calif.	San Francisco, Calif.
Wackwitz, Donald Newman	Private	Brooks Field, Texas	Springfield, Mass.
Houston, James H.C.	Private	Langley Field, Va.	Baltimore, Md.
Leitner, Chas. Henry, Jr.	Private	Maxwell Field, Ala.	Ware Shoals, S.C.
Wood, Clair Lawrence	Private	Crissy Field, Calif.	Liberal, Kansas
Harvin, Charles Bennett	Private	Bolling Field, D.C.	Baltimore, Md.
Macintyre, George Henry	Private	Crissy Field, Calif.	Los Angeles, Calif.
Arnold, Bob	Private	Barksdale Field, La.	Denver, Colo.
Armstrong, Burton W., Jr.	Private	Bolling Field, D.C.	Washington, D.C.
Stephenson, Mell M., Jr.	Private	Rockwell Field, Calif.	Athens, Ga.
Neely, Harold Lee	Private	Langley Field, Va.	Huntingdon, Tenn.
Nichols, Erickson S.	Private	Mitchel Field, N.Y.	Rye, N.Y.
Bell, Jasper Newton	Private	Crissy Field, Calif.	Santa Barbara, Calif.
Waldron, Russell Lee	Private	Maxwell Field, Ala.	Montgomery, Ala.
Day, William Foster, Jr.	Private	Mitchel Field, N.Y.	Greenwich, Conn.
Fisher, Robert Strachan	Private	Brooks Field, Texas	San Antonio, Texas
Coursey, Harry	Private	Mitchel Field, N.Y.	Middletown, Pa.
Hooks, Daniel Edwin	2d Lt. A.C. Res.	Not on active duty	Iowa Park, Texas
Todd, Raymond Patten	1st Lt. A.C. Res.	Not on active duty	Cambridge, Mass.

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Major James H. Doolittle, aeronautical engineer and speed pilot, who is now a representative of the Shell Oil Co., recently dropped in on Hamilton Field, Calif., flying a Spartan monoplane. In a 15-minute talk to the assembled pilots of the field, he outlined the present day advancement in motor fuels and oils. An hour later, he took off for Sacramento.

Major Lewis R.P. Reese, Hamilton Field, Calif., conducted bombing practice recently from 15,000 feet on a 100-foot circle in San Pablo Bay. Piloting the B-12A Martin Bomber, 1st Lt. Birrell Walsh climbed directly into the sun, so that spectators shielded their eyes to glimpse the tiny speck in the sky. Bombing is now being done almost daily over the Bay at heights of 5,000, 8,000 and 15,000 feet. Extreme accuracy in direct hits is reported at all these heights.

DEATH OF MAJOR ZABLAN

Major Porfirio E. Zablan, Philippine Constabulary, who was a student in the Observation Section at the Advanced Flying School, Kelly Field, Texas, died at about 11:00 a.m., June 18th, as the result of injuries received in an airplane accident which occurred approximately three miles north of Kendalia, Texas, at about 11:30 on the night of the 17th. Taking off from Kelly Field at 8:00 p.m., on a reconnaissance mission, which included the towns of Sabinal, Pearsall, Pleasanton and Stockdale, Major Zablan checked in at Sabinal, from which point he was to proceed to Stockdale, which is just south of Randolph Field. At the time of his take-off, the weather was good, but later, at about ten o'clock, a light layer of clouds appeared for an hour or two. The clouds were not very thick, but did reduce the altitude at which he could fly. No word was received from him during the night, and preparations were made for a searching party to depart early the following morning. In the meantime, the radio broadcasting stations in San Antonio were requested to ask their listeners to furnish any information they could concerning the lost airplane.

After only a few of the searching party had taken off on Wednesday morning, a telephone call was received through Boerne to the effect that Major Zablan and the airplane had been located about three miles north of Kendalia and a few miles west of Twin Sisters. These towns are about 50 miles due north of Kelly Field. Due to the rugged nature of the country and the flooded condition of streams and fields, it was impossible to ferry him out by air or to land a doctor in the near vicinity. A ground ambulance was immediately dispatched to the scene of the accident, arriving there at about 11:00 a.m. Major Zablan died as the ambulance arrived. Investigation revealed that the wreck was located by Mr. John Kneupper, of Blanco, Texas, who with his brother was searching for some sheep which they thought were harooned on high ground.

Major Zablan was in the airplane, but unconscious when found. One brother remained at the scene while the other hurried to the nearest doctor, who arrived in less than an hour. Everything possible was done to save the Major's life and make him comfortable until the ambulance could arrive, but it was thought from the first examination that he could not regain consciousness. It is believed he was unconscious from the time of the accident until his death.

The exact cause of the accident is undetermined, but it appears he was flying on a course of approximately 340 degrees over a valley and that he did not see one of the numerous low hills which exist in that country, and must have flown into the side of one of these hills while cruising. The airplane struck about 50 feet from the top of the hill and skidded along for some 30 yards before

coming to a stop rightside up. The landing gear and wings were knocked off, and the engine pushed back into the fuselage, but the airplane did not catch fire. Both flares were still in place; his safety belt was buckled, and the switches were on.

Major Zablan would have graduated on June 22d, 1935. He is survived by his wife, Mrs. Mary S. Zablan, two daughters and one son, all of whom live in Manila, P.I. He had long been a member of the Philippine Constabulary and was one of the senior Majors of that organization. Our deepest sympathy is extended to his family and to the Filipino people who have lost a most valuable officer.

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WAR DEPARTMENT ORDERS

CHANGES OF STATION: To Hamilton Field, Calif.:

Major Clinton W. Russell, from duty as a member of the War Department General Staff.

To Cambridge, Mass., for duty as students at Harvard School of Business Administration: 1st Lieut. Edward H. White, Procurement Planning Representative, Chicago, Ill., and Captain Raymond R. Brown, student, A.C. Tactical School, Maxwell Field, Ala.

To Chanute Field, Ill.: Captain Alfred L. Jewett from the Philippines.

To Randolph Field, Texas: Major Martinus Stenseth, from 2d Obs. Sqdn., Nichols Field, P.I. Relieved from temporary rank upon departure.

To Hawaiian Department: 1st Lieut. James E. Briggs, from duty as student, A.C. Technical School, Chanute Field. - Captain Dache M. Reeves from Wright Field, Ohio.

To Philippine Department: 1st Lieut. Sam W. Cheyney, 2nd Lieut. George F. McGuire from duty as students, A.C. Technical School, Chanute Field.

To Panama Canal Department: 1st Lieut. John A. Sanford from A.C. Tech. School, Chanute Field.

To Fort Logan, Colo.: 1st Lieut. Paul W. Wolf from March Field, Calif.

To Hot Springs, Ark.: Major James A. Healy, Kelly Field, for observation and treatment at Army and Navy General Hospital.

To Mitchel Field, N.Y.: Major Louie C. Mallory from duty with 81st Service Sqdn., Kelly Field. Relieved from temporary rank Aug. 10, 1935.

To Presidio of San Francisco, Calif.: Major John G. Colgan, from Philippines, to duty at Hqrs. 9th Corps Area.

DETAILED TO AIR CORPS: 2nd Lieut. Edward G. Winston, Inf., and to Randolph Field, July 1, 1935, for flying training.

TRANSFERS: 2nd Lieut. Victor H. King, Advanced Flying School, Kelly Field, to 62nd Coast Artillery, Fort Totten, N.Y., June 19, 1935.

RELIEVED FROM DETAIL TO AIR CORPS: 2nd Lieut. William R. Huber, to 1st Cavalry Division, Fort Bliss, Texas, for duty with Field Artillery.

Technical Sergeant Thornton C. Fitzsimon, 20th Bombardment Squadron, Langley Field, Va., appointed Warrant Officer, Regular Army, rank from June 1, 1935; remains on duty at Langley Field.

NOTES FROM AIR CORPS FIELDS

Hamilton Field, San Rafael, Calif. June 20.

Five men now form an outpost of Hamilton Field at Mather Field, 11 miles from Sacramento, for the purpose of servicing Bombers from this station flying in that direction. They are Privates, 1st Class, Harold F. Harris, Joe H. Armacost, Elmer Trainor, Archie Cathcart, and Private John Laskowski.

Lieut. Richard C. Kugel, 11th Bombardment Squadron, flew on an errand of mercy between Lee's Ferry, Arizona, and Escalante, Utah, on June 9th, searching for Everett Ruess, of Hollywood, a roving painter of the mountains, who has been missing since last January.

Capt. Douglas T. Mitchell, who narrowly escaped injury when his plane crashed at the Oakland Airport, is now at Hamilton Field awaiting orders. The plane, which was damaged to the extent of a crumpled wing and splintered propeller, was sent to the Rockwell Air Depot for repairs. Captain Douglas is a member of the 79th Pursuit Squadron at Barksdale Field, La. At the time of the accident, he was ferrying the plane from Seattle to his home station. It is believed he will ferry to Barksdale Field another Pursuit plane upon its completion.

Hamilton Field is in the films in the California Building at the San Diego Exposition. Mr. Freddie Mae, formerly a Captain in the British Royal Air Force, shot the pictures as the 7th Bombardment Group took off for the Mather Field Maneuvers. These pictures are the property of the Redwood Empire Association, of which Mr. Stuart B. Dunbar is the publicity director.

Fifteen tiny pheasant eggs were found on the flying field. As no mother could be discovered for them, Tech. Sgt. John Suggs adopted the foundlings and brought a chicken hen from Novato to hatch them. The hen seems to take to the eggs, but so far no results have been reported.

Major Arthur G. Hamilton was scheduled to fly with a war strength equipment of 13 planes and 13 pilots to the Municipal Airport at Coalinga on June 24th to service test his organization for a period of ten days. The personnel of this organization, the 11th Bombardment Squadron, numbers 49.

Captain John J. Morrow reported for duty on June 17th. Assigned to the 9th Bombardment Squadron, he is at present acting as Squadron Commander during the absence of Major John M. Davies. Upon the latter's return, Captain Morrow will be assigned as flight commander.

Captain Oliver K. Robbins, who reports here on August 1st, was assigned to the Station Complement. He left the Air Corps Tactical School on June 5th, and is now on leave.

Staff Sergeant Harry Kramer was appointed post Sergeant Major. His former position as Personnel Sergeant Major is now held by Sgt. John A. Settle.

Major Carlyle H. Ridenour was designated as a member of the Aircraft Accident Classification Committee during the temporary absence of Major John M. Davies, now on leave.

Captain James W. Spry was appointed Group Technical Inspector in addition to his other duties.

Sergeant Joe Howard, 31st Bombardment Squadron, who reenlists on July 26th, is scheduled for a tour of service in Panama.

Lieut. Edward W. Suarez, Group Adjutant and former All-American tackle at West Point, recently returned from Natchez, Miss., where his father was gravely ill. According to Lieut. Suarez, his father had a miraculous recovery.

Richard C. Murphy, son of Major Robert C. Murphy, of Hamilton Field, graduated from George Washington University last week with the degree of Bachelor of Arts.

The only two defeats of the season were recently sustained by the post baseball team, which bowed to the Fairfax nine, 12 to 3, and to the Army aggregation from Fort Scott, 9 to 8. Captain John Rody, Post Athletic Officer, still believes he has a winning team, and is booking games with visiting teams on Wednesday and Saturday afternoons.

119th Obs. Squadron, New Jersey Nat'l Guard.

From January 1st to June 20th, our Squadron was host to 546 visiting Army, Navy, Coast Guard and Marine Corps ships and their crews. Our proximity to New York City is, of course, partially responsible for this large number of visitors, but we like to feel that our earnest efforts to make our guests comfortable and give them real service is also a factor.

The 44th Division Aviation Ball was held on Saturday, June 1st, in the new Newark Airport Administration Building, which was built with E.R.A. funds, and was designed by one of our officers, Lieut. H.F. Clark. The affair was, as usual, a huge success, and is rapidly becoming the outstanding social event of New Jersey's summer season. During intermission, the guests were entertained by night formation

flying, controlled by radio from the Airport Control Tower by the Commanding Officer, Robert L. Copsey.

The Squadron is rapidly completing preparations for the maneuvers to be held in the vicinity of Pine Camp, New York, the latter part of August. All pilots are hard at work on instrument flying, under the supervision of our Regular Army Instructor, Captain William McKiernan, Jr.

San Antonio Air Depot, Duncan Field, Texas.

The personnel of the Depot sincerely regret losing Lieut. and Mrs. Charles K. Moore, who go to Wright Field at the end of June. Lieut. Moore, who came here in July, 1932, from the Air Corps Technical School, Chanute Field, served as Assistant Engineer Officer, and subsequently as Assistant Depot Supply Officer and, for the past six months, as Acting Quartermaster. He will enter the Air Corps Engineering School as a student on August 1st. Lieut. and Mrs. Moore take with them the heartiest wishes of all for success and happiness at their new station.

Captain N.P. Walsh, Quartermaster at this station, was welcomed back on June 15th after his absence since April 1st, he having been a patient at the Army and Navy General Hospital at Hot Springs, Ark.

A hearty welcome was extended to the following recent additions to the Depot's official family: Captain Walter Hitzfeldt, QMC, and Mrs. Hitzfeldt, and their two sons, arrived June 8th from Fort Sill, Okla. Captain Hitzfeldt was transferred here for duty as Assistant to the Quartermaster.

Captain John P. Richter, A.C., and Mrs. Richter motored through from Maxwell Field, Ala., arriving on June 18th. Captain Richter was assigned to this Depot upon graduation from the Air Corps Tactical School, and was appointed Assistant Engineer Officer at the Depot.

Among recent cross-country visitors at the Depot were Major V.L. Burge, of the Tactical School, Maxwell Field, June 12-15, passing through in a P-12 from the West Coast; and Captain H.H. Mills, Instructor, accompanied by Lieut. W.E. Nicol, 32d Division Aviation, Michigan National Guard, in an O-38, June 11-15.

35th Division Aviation, Missouri Nat'l Guard.

Seven officers of this organization and Capt. Arthur Thomas, Air Corps Instructor, flew to Randolph Field, via Hatbox and Hensley Fields, in four O-38E's, on May 9 and 10, returning on May 12, via Houston, Texas, and Barksdale Field, La. Every hospitality was shown the visitors, particularly at Randolph Field, where an interesting and instructive tour was made through the various departments of the Training Center. The stop at Houston was made at the hangar of the Texas National Guard squadron, commanded by Major Blackburn.

The discussion in the critique following the return to the home station brought out many valuable ideas that were picked up on the tour by the officers who participated.

Captain Thomas made a short visit to Hot Springs, Ark., on the return trip, to call on Colonel Danforth at the Army and Navy Hospital.

The flight was so arranged that several hours of night navigation was performed en route. Aerial photographs were taken, and the radio was used to the fullest possible extent for the reception of weather broadcasts. The officers who participated in the flight were Captains Donovan, Kaepfel, Lauth, 1st Lieuts. Kutterer, Racen, Burkhardt and Freeman.

Fort Sill, Okla., June 20th.

The school year at the Field Artillery School will be brought to a close with General Field Exercise #8. This year three additional Observation planes with teams and equipment are expected from Brooks Field, Texas. Also, three Attack ships were requested for "Smoke Screen" and attack mission purposes. These ships were scheduled to arrive not later than June 21st.

First Lieut. Haynie McCormick, who has been on duty with the 1st Balloon Squadron, was ordered to duty at Scott Field, Ill.

A.C. Tactical School, Maxwell Field, Ala.

Hon. George H. Dern, Secretary of War, was a visitor at the field, arriving on June 8th in a C-4, piloted by Major Phillips. After an overnight stop, he took off for Bolling Field. Brig. General Frank M. Andrews, commanding the GHQ Air Force, was also a visitor, arriving on June 15th for an overnight stop.

The Operations Officer reports that clearances were issued to 139 airplanes departing from the field during the period June 1st to 15th.

Lieut.-Colonel Herbert A. Dargue, Assistant Commandant, returned June 17th from the West Coast, where he has been attached and on duty with the maneuvers of the fleet as Observer. He was stationed aboard a Naval vessel and reported an excellent trip.

Colonel John F. Curry, Post Commander, was on leave from June 10th to 20th, during which period he visited Washington.

Captain Charles T. Skow, Post Communications and Signal Officer, was transferred to Randolph Field, Texas, and left this station June 9th on leave of absence.

Staff Sergeant Ray W. Clifton, past president of the NCO Club at Maxwell Field, called the Noncoms of the field together recently for the election of officers for the coming year. Tech. Sergeant William H. Turner, popular Secretary-Treasurer last term, was elected President, and Master Sergeant Eugene H. Duffin, Vice President. The Board of Governors consist of 1st Sgt. Donald S. Williams, Staff Sgt. Barron C. Powers and Staff Sgt. Leroy Cox. Plans are under way for the second year of the

NCO Club activities at Maxwell Field, and with the club well furnished and stocked for entertainments, a full schedule is anticipated this year.

Staff Sgts. Walter J. Murray, A.C.T.S. Det., and Harold M. Myers, 54th Bombardment Squadron, took the fatal plunge in June and are now listed in the Post Phone Book as married men.

The Post Gulf Championship was competed for during the month. Major Lotha A. Smith won low Medalist Trophy in the qualifying round with a snappy 76 on the local course. Captain Benj. F. Giles stepped to the front in the first flight, winning the Post Championship and having his name inscribed on the beautiful permanent trophy obtained for the Club this year. In addition, he received a handsome trophy. Other winners included Staff Sgt. Robert V. Beemer, runner-up, 1st flight; Staff Sgt. E.L. Higbie, winner, 2nd Flight, with Lieut. Oliver, runner-up; Lieut. Matheny, winner, 3rd Flight, with Lieut. Vance, runner-up; Major Lotha A. Smith, low medalist in the qualification, was defeated in the biggest upset of the tournament by Captain Ralph A. Snavelly in his first match. Major Smith captured consolation prize in the 1st flight with ease, with Staff Sgt. John C. Hrivnak taking 2nd flight consolation honors, and Major Claire L. Chennault, 3rd flight consolation prize.

Major Melvin B. Asp, Station Engineering Officer, received orders assigning him to the GHQ Air Force at Langley Field, and departs from Maxwell Field before June 30th. As evidence of their appreciation of this fine officer, all enlisted personnel assigned to duty on the Line under Major Asp's supervision while he was stationed here, got together on the afternoon of June 18th and had a picnic in his honor at Harraget Springs near Wetumpka.

Majors Asp, Horton and Rich arrived at the Springs shortly after 2:00 p.m. Mess Sergeant Joe Bruckey, 84th Service Squadron, had tables laden with the best foods obtainable and everyone enjoyed the party.

Major Asp gave a short talk on his service at Maxwell Field and thanked his men for their cooperation. Major Clarence F. Horton, Air Corps Supply Officer, and Major Arnold H. Rich, Commanding Officer, 84th Service Squadron, also delivered short talks. Master Sgt. Eugene Duffin was in charge of all arrangements for the picnic, and it certainly proved a success. Following the refreshments and speeches, swimming, compulsory and otherwise, was enjoyed in the Spring at the camp site.

France Field, Panama Canal Zone, June 5th.

Captain Frank Hawks landed at France Field at 4:40 p.m., May 4th, and took off the following morning at 3:10 a.m., for Los Angeles, Calif. He was on his return trip from Buenos Aires, Argentina.

First Lieut. I.S. Ott and 2nd Lieut. William Keese (Air Res.) arrived at the field in May, and were assigned to the 7th Observation Squadron, the former temporarily as Assistant En-

gineering Officer, and the latter as Assistant Supply Officer.

Staff Sgt. Malone is also a recent newcomer to the 7th Observation Squadron.

France Field has just entered the Canal Zone rainy season, which is the best time for boating and fishing. Numerous large tarpon are being caught, running as high as 100 lbs., also catches of mackerel, barracuda and jack. Everyone on the post has become fishing-conscious, and boats are either being bought or constructed. A Fishing and Yachting Club has been organized, also a Pistol Club. The A & R activity lately received five new light rowboats which are being used almost continually for exercise, fishing and recreation.

The inter-squadron basketball season has started and has aroused considerable enthusiasm. Almost the entire post attend the games and root for their particular team.

Luke Field, T.H., June 6th.

Departing for the mainland on the U.S.A.T. REPUBLIC on May 29th were Lieut.-Col. Laurence F. Stone, Captains Douglas Johnston, Courtland M. Brown, 1st Lieuts. Douglas M. Kilpatrick and Joseph F. Carroll. First Lieut. Richard H. Wise is scheduled to sail for China and Japan on June 6th, via commercial liner.

Many of the visiting naval officers and sailors make Luke Field a way point during their excursions while on liberty, and the field personnel extend them all possible courtesies.

A total of 34 enlisted men from this station departed for the mainland on May 29th on the U.S.A.T. REPUBLIC. First Sergeant Orient M. Durling, 23d Bombardment Squadron, was among those departing, transferring the yoke of responsibility to Staff Sgt. Dick Winters, who replaces Sgt. Durling in the capacity of Acting First Sergeant.

Hawaiian Air Depot, June 6.

The Engineering Section of the Depot has finally succeeded in stepping up production to a point where at least 7 major overhauls of aircraft have been completed each month for the last 3 months. This is a minimum figure upon which this depot may operate in order to maintain schedules and meet present Departmental requirements. From a production standpoint, the Fiscal Year now drawing to a close has been the most successful in the history of the depot, and the outlook for the coming Fiscal Year is extremely favorable.

Unusual activity has taken place in the Depot Supply Section during the past week or so, resulting from the construction of a large lean-to running the entire length of the main building, and the general rearrangement of supplies within that building. Many new bins and other storage facilities are now being provided which will increase the storage space in the main supply building at least 30%. Captain C.P. Kane, who recently arrived from the

Rockwell Air Depot for duty in Hawaii, is supervising this construction work which calls for installation of a new local issue department and other features intended to facilitate and speed up the handling of supplies.

The Engineering shops were recently the mecca for men of the U.S. Fleet, which has been berthed here in Pearl Harbor and which completely surrounds Ford Island.

The increased production of the Engineering Section has resulted in increased demands for supplies. It has been necessary to increase quantities being requested, and requisitions are now being prepared on the basis of one year's past consumption.

The project of rearranging the Depot Supply warehouses to provide for greater storage facilities is progressing rapidly. A large addition has been constructed, and many other changes are now being effected to improve storage facilities.

The Purchase Branch of the Supply Section is at present having an unusual volume of work, due to receipt of funds for procurement of bills of materials for several long-needed projects. Foremost among these is the re-roofing of the main Supply Warehouse and the new Test Block Building. Funds have also been received for the procurement of gasoline storage tanks to be installed at various outlying bases, as well as a large water tank to be installed at Homestead Field.

The Union Oil Company's tank steamer arrived in the Department on May 30th with sufficient gasoline to fill all available storage space. Plans are being made to contract for gasoline for the ensuing Fiscal Year on a yearly basis. In order to overcome some difficulties experienced in the past in obtaining gasoline at the various outlying bases when special flights or maneuvers are held, it is planned to draw up a flexible contract which will permit deliveries of quantities to any point when needed.

Wheeler Field, T.H., June 6th.

19th Pursuit Squadron: Since May 27th, the 19th has been engaged in its annual dive bombing and tow target gunnery. The bombing range, located southeast and adjacent to old Wheeler Field, has been used for bombing, while tow target gunnery has been conducted off the north shore of Oahu.

The 19th increased its strength by one 8-pound boy on May 27th. Lieut. and Mrs. A.L. Schroeder announced the newcomer as A. L. Schroeder III.

75th Service Squadron: This organization has been extremely busy for the past few weeks maintaining planes of the 6th and 19th Pursuit Squadrons, which have been engaged in annual field gunnery and bombing at Bellows Field, Waimanalo. Since starting this training, the engineering department has completed 7 P-12's, received from the Hawaiian Air Depot, assembled and rigged, and 9 P-12's were dismantled and shipped to the Hawaiian Air Depot.

Due to the shortage of airplanes, the 75th has made every effort to get airplanes back into service in the shortest possible time. In the last instance, on April 20th, at 3:00 p.m., a P-12E was flown to Wheeler Field with the engine leaking oil through blower section. After inspection, it was decided to change engines. With 4 men working until 8:30 p.m. that day, and from 8:00 to 9:00 a.m., Easter Sunday, the airplane was flown for engine test and delivered to the squadron at 10:00 a.m. Again, on May 3rd, a V-1150 engine was damaged at Bellows Field, Waimanalo, necessitating a change. A detail of 4 men with an engine for replacement departed at 3:00 p.m. for Bellows Field. The change was completed, engine tested and detail returned to Wheeler Field at 1:30 a.m. with replaced engine. Bellows Field is approximately 30 miles from Wheeler Field by road.

Group Transportation during the past few months was augmented by a considerable number of new, up-to-date vehicles. With the arrival the latter part of this month of six additional 1½-ton Dodges, nine 2½-ton Federals, the transportation for the Group will include two 5-passenger Ford tourings; twelve 8-passenger reconnaissance cars; five trucks for light hauling; fifteen trucks for heavy hauling, and twelve motorcycles. In addition to this, three panel trucks are on hand for the installation of radio sets for use in blind flying work.

The care and maintenance, and to a large extent the operation of this transportation is considered a duty of the 75th Service Squadron. Some difficulty has been experienced in finding sufficient men to handle this added overhead without impairing other functions of the Squadron.

The necessity for a transportation personnel of 64 men, including the noncommissioned officer in charge, truck-master, dispatcher, mechanics and drivers for all cars, makes us wonder how the Station Complement instituted at Air Corps stations on the mainland is working out. Some of the vehicles for the Group have been assigned to squadrons of the Group, who furnish drivers a week at a time. Under the policy in force, each driver is assigned a definite vehicle which is his to drive and maintain.

At a recent review for Major-General Hugh A. Drum, Commanding the Hawaiian Department, the Group motor vehicles presented a show which has not been equalled since the period immediately after the World War.

Advanced Flying School, Kelly Field, Texas.

Colonel Jacob E. Fickel, with Lieut.-Col. C.A. Mitchell, Adjutant General's Department, Fort Sam Houston, Texas, departed from this station June 5th for Newark, N.J. After visiting many Air Corps stations enroute, Colonel Fickel returned to Kelly Field on the evening of June 16th.



TECHNICAL INFORMATION

ENGINEERING AND NEWS



Activities making special weather observation flights for the Weather Bureau have been instructed to use the Purpose Mission Code Symbol "U" and the Auxiliary Mission Code Symbol "14" to designate such flights. The Basic and Specific Mission Code Symbols to be used will depend upon the type of flight training received by the individuals participating. For instance, if the flight was accomplished entirely by instrument, the Basic and Specific Mission Code Symbols would be "W-28" (system of Mission Code Symbols prescribed to be used effective July 1, 1935).

Due to unexpected delays, the new Forms No. 1 will not be received from the Public Printer until about the first week of July. It will, therefore, be necessary for all activities to continue in use the Aircraft Flight Report, revised September 29, 1933, and the temporary forms provided for recording the special types of flying experience prescribed by War Department Circular No. 6. However, as stated in Circular 15-1, the new system of mission symbols is to become effective July 1, 1935, even though the new Forms No. 1 will not be available. Extracts of Circular 15-1, containing the new mission symbols, are being prepared and will be forwarded all activities as soon as possible to eliminate the necessity for each activity reproducing the symbols locally for the information of the pilots while the old-type forms are being used.

Technical Order 00-20 has been revised and reprinted. Distribution was started Saturday, June 29, 1935.

It will be noted that the number of the Technical Order has been changed from 00-20 to 00-20A. The 00-20 series has been allotted to the Visual Inspection System for Aircraft. 00-20A covers the Visual Inspection System for Airplanes. Instructions covering the Visual Inspection System for Balloons and Airships will be assigned numbers 00-20B and 00-20C, if

and when, issued.

In pursuance with the Technical Order numbering system, amendments to 00-20A will be issued as 00-20A-1, 00-20A-2, etc.

The revision of Circular 15-1 will cause certain references in Circular 15-3 to be incorrect. Circular 15-3 will, therefore, be revised at an early date. It is not expected that organizations will experience any difficulty in the preparation of Forms No. 3 as no changes have been made in the manner of recording the basic data or in the data required to be shown on Form No. 3.

Until Form No. 3 is redesigned, it will be necessary that the Purpose Mission Code Symbol, when used, be placed in the column provided for recording the Specific mission. The space in this column is adequate for entering both types of mission symbols.

Form No. 41:

A revision of tentative Form No. 41, Maintenance Inspection Record, was approved for standardization by the Secretary of War, under date of June 8, 1935. Copies of the revised form are being distributed at the present time.

In general, the form is similar to tentative Form No. 41, which has been undergoing service test for the past two years. The main changes are the provision of separate columns to permit separate recording of the oil serviced to each engine of multi-motored aircraft and the division of Power Plant columns into two sections (left and right) to permit separate recording of the data pertaining to each engine on bi-motored aircraft. An additional "Status" column is provided, as revised Technical Order 00-20A prescribes that the status of the airplane at the end of the work day will be indicated on the next lower horizontal line if any work has been done on the airplane during the day, etc.

The starter is no longer given a separate column, having been merged with the ignition and electrical systems. The heading of the column "Tanks - Fuel and Oil" has been changed to "Fuel Tanks" and the column placed under the "Airplane" section, rather than the "Power Plant" section. The oil tanks are

carried under the column "Oil System".

Form No. 41A:

Form No. 41A has been revised and is now being printed and distributed. In general, the revision is similar to previous revisions, changes in the column headings having been made to correspond with changes made on Form No. 41.

The following difficulty has been reported in recent Unsatisfactory Report:

Engine Type 1. Engine received
R-1340-27 with the oil pressure
installed in adjusting plunger
Airplane Type screwed all the way in.
P-26A 2. At 20:25 hours, the

oil pressure dropped to 45 lbs. A new spring was installed in the oil pressure relief valve which raised the pressure to 85 pounds.

3. At 25:25 hours, the airplane was flying cross-country when the oil pressure dropped to 55 lbs. Three washers were placed under the spring at Hatbox Field, Oklahoma.

4. At 30:20 hours, a new oil pump was installed locally. On test flight, the pressure remained at 90 lbs., till a slow-roll was performed. The oil pressure then suddenly dropped to 35 lbs. and remained there.

5. At 32:00 hours, all oil lines were checked and cleaned and the oil pressure adjusted to 80 lbs. After about 10 minutes ground time at 1,000 RPM, the pressure dropped to 30 lbs. and remained there.

6. The engine was removed and type R-1340-27 was installed. After 1:20 hours, the oil pressure dropped to 30 pounds.

7. The oil tank was removed from the airplane and was found to contain a quantity of fine metal and loose hard carbon which is believed to have been returned to the tank from engine.

Note by Station Engineer Officer:

"Recommend that in all cases of engine failure where it is necessary to change engines that the oil tank be removed from the airplane and thoroughly cleaned out before installing the new engine. There has been three cases of low oil pressure difficulties with new engines at this station in the last six months that were caused by fouled oil tanks from previous engine failures.

The following defects were noted during recent technical inspections:

- O-38 - Oil line anchoring clamp broken.
- O-38 - Rudder and tail wheel control cables loose. Oil line hose clamp loose.

- O-38E - Starter loose at fly wheel flange.
- O-25A - Throttle stop not functioning properly.
- O-25A - Battery terminal washer improperly installed. Radiator shutters do not open fully.
- O-25A - Gun synchronizer wire to junction box, not on terminal and not taped.
Booster coil should engage before clutch.
- O-38 - Primer leaks and does not prime. T.O.01-1-37, relative battery drain, not complied with.
- O-38B - Internal brace wires of the wings have not been inspected since overhaul.
Battery terminal washers improperly installed. Oil sump mounting studs loose.
- O-38 - Spark plug gaskets improperly installed.
- O-38B - Nut missing from starter mounting stud. T.O. 01-1-37, reference battery drains, not complied with.
- O-19 - Oil tank not bonded.
- O-19 - Oil radiator clamps not tight.
- A-3-B - Battery terminal washers improperly installed.
- O-1-E - Fuselage overhaul- date stencilling painted over. Stud, air intake, loose.
- B-4A - Hose clamp loose, main gas line. Nut missing- starter mounting flange. Push rod housing gaskets need replacement. Selective engine gas valve and dial assembly not synchronized properly. Aileron stop cables not adjusted properly.
- C-14 - Right aileron binding. Hose clamp loose, gasoline line.
- P-12J - Shock absorber fluid in gasoline gauge. Fuel pressure gauge hand stands at $\frac{3}{4}$ lb.
- P-31 - Main gasoline valve and pointer assembly, not synchronized. Left brake assembly arm resting on axle in "off" position. Stops should be adjusted.
- O-25A - Main gasoline valve and pointer assembly not synchronized. Stabilizer adjustment worm anchor bearing loose.
- O-31A - Battery drain installed in bottom of box.
- BT-2BI - Landing shock units not stamped to indicate type spring installed. Gasoline leak at gasket between carburetor and heater.
- P-12G - Battery low on liquid and practically dead. Belly tank connection cap not down on pipe. Gasoline stain indicates seepage leak at bottom of main gasoline tank.