Air Corps News Letter

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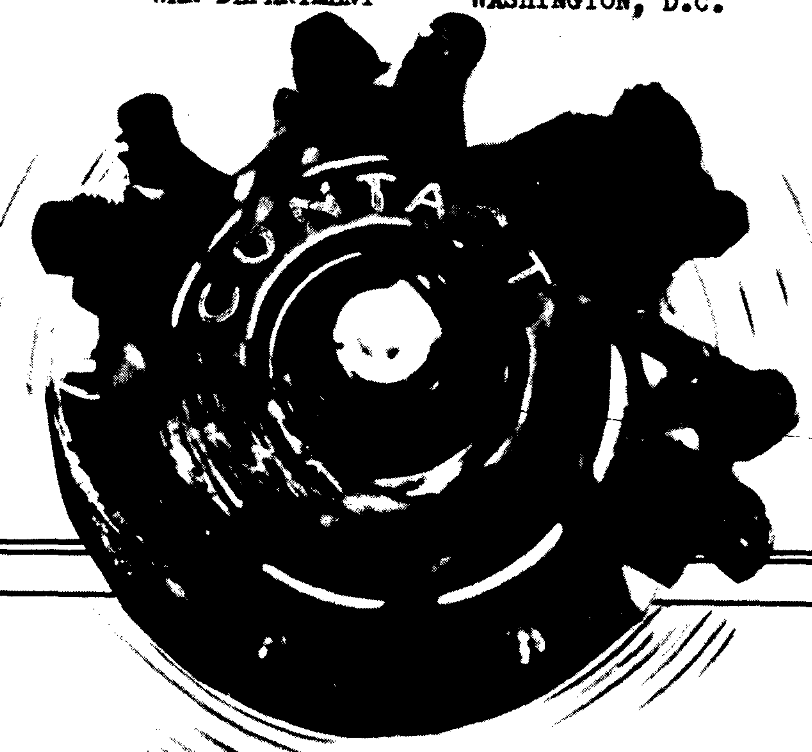

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VOL. XX AIR CORPS NEWS LETTER NO. 17.
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard and others connected with aviation.

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THE EFFECT OF FLIGHT ON THE MIDDLE EAR

Notice to Flyers.- If you have reached the stage - like some of our old-timers - to whom the roar of a twin-row sounds like the gentle purr of a kitten, don't bother with this article now; you should have read it many years ago. On the other hand, if you are just beginning to have difficulty in hearing some compadre say: "It's quitting time," or "What will you have?", there may yet be time to save you if you read and profit by this article. It was submitted by Major Malcolm Grow, Chief Flight Surgeon, Office of the Chief of the Air Corps, in the belief that it would be of interest to Flight Surgeons and of benefit to pilots and passengers in the Air Corps - those who have the tenacity to read a technical paper. For those who cannot hurdle "trauma" or "Aero-otitis media," we suggest that you read the following chapters at least - "Symptoms" and "Treatment."

The Editor.

THE following excerpts are quoted from an article titled as above, published in the Journal of the American Medical Association by Captain Harry G. Armstrong, M.C., Flight Surgeon (Director of Physical Research Laboratory, Wright Field), and J.W. Heim, Ph.D., Assistant.

All Flight Surgeons have been requested to read and study the article, and this partial publication in the News Letter is deemed advisable in order that Air Corps personnel may have personal knowledge of the effects on their ears of altitude changes and what may be done to alleviate or avoid the same.

These excerpts have been compiled by the Medical Section, Office of the Chief of the Air Corps, in the hope that by bringing this matter to the attention of Air Corps personnel they will cooperate with the various medical officers and make a concerted effort to lessen the ever increasing number of cases of impaired hearing and other permanent effects primarily induced by the repeated trauma of altitude changes.

"Those familiar with aviation medicine are well aware that airplane pilots suffer more frequently from disturbance of the middle ear than from all other occupational diseases combined.

The phenomenal growth of commercial air transport, which carried approximately one million passengers in 1936, makes this problem of interest and importance to the general medical profession, for airplane passengers are exposed to the same influences as the pilots during flight, and in most instances are much more adversely affected.

DEFINITION

Aero-otitis media is an acute or chronic inflammation of the middle ear caused by a pressure difference between the air in the middle ear cavity and that of the surrounding atmosphere, commonly occurring during changes of altitude in airplane flights and characterized by inflammation, discomfort, pain, ringing in the ears and deafness.

CAUSE

Aero-otitis media is due to the lack of ventilation of the middle ear during changes of atmospheric pressure to the extent that the middle ear is injured due to: one, a failure to open the eustachian tube voluntarily when necessary, the other the inability to open it.

Failure to open the eustachian tubes, which lead from the middle ear to the throat, during changes in altitude in aircraft flights is most often due to ignorance of the necessity to do so, but may be due to carelessness or to being asleep or may arise from the influence of analgesics or anesthetics or from coma. The first two of these instances usually occur among inexperienced pilots and passengers, the third in sleeper airplanes, and the last group in ambulance planes.

Inability to ventilate the middle ear voluntarily is much more prevalent than is generally recognized. Some of the most frequent causes of blocking of the eustachian tubes are acute and chronic infections of the upper respiratory tract, nasal obstructions, sinusitis, tonsillitis, tumors and growths of the nose and nasopharynx, paralysis of the soft palate, enlargement of the tubal tonsil, inflammatory conditions of the eustachian tube or middle ear, scar tissue about inner end of the tube following adenectomy, and malposition of the jaws.

The effect of malposition of the lower jawbone in relation to blocking of the eustachian tube was first reported by Costen and later applied to aviation by Willhelmy. They showed that in individuals who had lost many teeth, wore ill

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fitting dental plates, had marked overbite, malocclusion, or worn molar teeth either unilateral or bilateral or with any other condition in which there was a shortening of the vertical position of the lower jaw, a compression blocking of the eustachian tube was likely to occur from a relaxation of the surrounding soft tissues.

SYMPTOMS

The symptoms of aero-otitis media depend on the duration, frequency and severity of the injury sustained.

Aero-otitis Media, Acute.-- Subjective Symptoms: Positive pressures in the middle ear are perceptible in consciousness to most individuals as a feeling of fulness in the middle ear. As the pressure increases the feeling of fulness is distinct and somewhat annoying and affects the hearing by imparting a distant sound and a lessened intensity. Very high pressures usually increase the discomfort and may be accompanied by ringing in the ears. The latter is of a steady hissing or roaring character or crackling and snapping. In some individuals there may be actual pain and vertigo of a mild nature. At extreme pressures in the middle ear there is increasing pain, ringing in the ears and vertigo, which finally becomes unbearable.

In normal cases about 15 mm. of pressure is sufficient to force air out through the eustachian tube, which relieves the pressure in the middle ear and consequently the accompanying symptoms. However, this relief is initiated by an annoying 'click,' which is both felt and heard as the drums snap back to normal position. In blocking of the tube the pressure required to force it open varies with the degree of stoppage. In these cases the pressure may be relieved gradually over a period of time instead of instantaneously, and a greater amount of pressure remains in the middle ear after the tube has again closed.

In descent, in which the atmospheric pressure is increasing and the pressure in the ear becomes negative, the symptoms are the same as already described, except that the pressure is never relieved through its own force acting on the eustachian tube because of the flapper-valve like action of the latter. For this reason the greatest difficulty usually occurs during descent in aircraft, and the highest pressure differentials have been seen and studied experimentally under this condition. In even medium negative pressure the pain in the ear is severe and resembles that of acute inflammation of the middle ear. The ringing in the ears is marked and there is usually vertigo or giddiness with beginning nausea. In well marked negative pressure the pain is very severe and radiates from the ear to the side of the head, the parotid gland and the cheek. Still lower pressures produce agonizing pain, which seems to localize not in the ear but deep in the substance of the parotid gland, which is located just in front of the ear.

Deafness is marked and vertigo and head noises usually increase, but the latter may disappear. At very great negative pressure the eardrum ruptures.

This occurrence is a dramatic episode in which the patient feels 'as though hit along the side of the head with a plank,' a loud explosive report is felt and heard in the affected ear. There is a sharp piercing pain on the affected side, giddiness and nausea become marked and collapse or generalized shock follows. With rupture of the eardrum the acute pain quickly subsides, but a dull ache persists for from twelve to forty-eight hours. Hearing is distinctly diminished and vertigo and nausea may persist for from six to twenty-four hours.

With both positive and negative pressures, voluntarily opening the eustachian tube will immediately relieve all acute symptoms; but it is to be remembered that with extreme negative pressures it becomes impossible to overcome this by muscular action, and relief is obtained only by a return to a higher altitude. In cases in which the pressure has already produced injury, opening of the eustachian tube will not relieve the symptoms of pressure injury, and they persist until recovery has taken place. Pressures that may be only uncomfortable at first finally become painful. Moderate injury to the ear is followed by a sense of soreness in the ears and deafness lasting from one to twelve hours. Severe injury is followed by pain, deafress, vertigo and ringing in the ears for from four to forty-eight hours. The pain is similar to that of abscess of the middle ear, and the ringing in the ears is usually of a hissing or roaring character, the deafness of the conduction type and qualitative as well as quantitative.

Adero-Otitis Media, Chronic.-- Subjective Symptoms: In these cases there is a 'full and stuffy' feeling in the ears and difficulty in 'clearing' them. There is a partial loss of hearing, which is either unilateral or more pronounced on one side, and in some instances may vary from day to day. Head noises may be present, but rarely vertigo or pain. The condition is worse after flights, during acute infections of the upper respiratory tract, during changes of weather and during fatigue or debilitated states.

TREATMENT

Methods for Prevention.-- Those who take up aviation as a profession are and should continue to be carefully tested to determine if the eustachian tube is

(Continued on page 18).

RESERVE OFFICERS' CAMP AT SCHOEN FIELD

By Captain Fred W. Sommer, 309th Air Reserve Training Squadron

JULY 31, 1937, marked the closing of one of the most successful and instructive 14-day active duty camps for the Air Corps Reserve officers at Schoen Field, Fort Benjamin Harrison, Indiana.

Under the careful supervision and guidance of the Commanding Officer of Schoen Field, Captain Milton J. Smith, Air Corps, we were able to get our fill of flying for once and to leave with a feeling that we had a very instructive camp.

Captain C.F. Cornish, Air Reserve, the senior officer of the 309th Training Squadron, assumed command and appointed his staff, as follows:

Captains Fred W. Sommer, Operations Officer; Frank S. Estill, Engineering Officer; Charles E. Halstead, Supply Officer, and 2nd Lieut. Bernard M. Lloyd, Adjutant.

With a training itinerary published by Captain M.J. Smith, we planned our training so that we were able to obtain as much instructive flying and training as possible. With only three each PT-3A and BT-2B airplanes, of which only one from Schoen Field was fully equipped with instruments and radio, we decided to concentrate on instrument flying.

The mornings from 7:15 to 11:45 were devoted to flying, and the afternoons to class room work and lectures. We also used the week end for extended cross-country flying.

As all of the pilots had some previous instrument flying instruction, we endeavored to qualify as many for the Instrument Flying Test as possible. The average pilot time in instrument flying at this camp was 12 hours, 5 minutes. Two pilots passed the test.

The average pilot time in Air Navigation was 7 hours and 40 minutes; Formation Flying, 7 hours, 30 minutes; Night Air Navigation and other flying, 1 hour, 55 minutes. Average total pilot time, 33 hours and average total time in the air, which included pilot, safety pilot and observer time, was 50 hours and 37 minutes.

Great stress was placed on punctuality of take-off and landing, according to the time on the operations orders. In order to emphasize this point, we instigated a penalty system by which the pilot was fined ten cents for being late on take-off or landing, late to classes, leaving switches on, or not following operations orders. The money thus collected was used in furnishing a luncheon at the end of the camp for the enlisted men. It was not so much the fine that hurt the offender, but the kidding he received from his fellow officers. However, all the pilots entered into the spirit of the game and, as a result, there were very few victims near the end of the camp.

Two nights were devoted to night flying. All pilots soloed at night at the Indianapolis Municipal Airport, and each took a one-way night cross-country flight to Louisville, Ky.

There were no forced landings or accidents to airplanes or personnel; in fact, we did not even have a flat tire.

The enlisted men were efficient and hard working, and we always had all the airplanes on the line ready to take off at the prescribed time. All the enlisted men entered into the spirit of giving all the flying to the Reserve officers that was possible by keeping the airplanes in excellent condition.

All our instrument flying, extended air navigation and night flights were made with the three BT-2B airplanes.

Schoen Field has been greatly improved in the past two years with the help of a P.W.A. project and the supervision of Captain M.J. Smith. As a result, all types of Army and Navy airplanes are landing there. It is hoped that more of the Army pilots will include Schoen Field in their itinerary for their air navigation flights.

We can all truthfully say that during this camp we received all the flying and constructive military knowledge we could take - and then some - in the 14 days allotted for active duty training. At the close of camp we left for home and a good rest, hoping that we will have another camp next year as successful as the one just completed, but with more modern airplanes.

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37TH ATTACK SQUADRON LAYS SOME SMOKE

The 37th Attack Squadron, stationed at Langley Field, Va., worked a co-operative mission with the Chemical Warfare School at Edgewood Arsenal, Md., on August 2nd and 3rd. Two missions were flown, the first one consisting of a smoke screen laid around a boat with subsequent dye attacks made through the screen on the boat. The second mission was reminiscent of the recent West Coast Maneuvers. It was a 3:30 a.m. reveille with a 4:30 a.m. take-off. On this mission three ships laid a smoke screen to protect a landing party from a boat anchored in the bay. The other three ships attacked the landing party through the screen using dye.

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During July, the Engineering Department of the San Antonio Air Depot overhauled a total of 19 airplanes and 58 engines and repaired 45 airplanes and 22 engines.

ACTIVITIES AT MOFFETT FIELD, CALIF.

UNDER the recent shake-up of Observation units, Major Horace S. Kenyon, Jr., Air Corps, headed a group of seven officers transferred from Brooks Field, Texas, to Moffett Field, Calif., in June. Major Kenyon assumed command of Moffett Field, and Captain Courtland M. Brown took over the command of the Ninth Air Base Squadron. First Lieut. Lorry N. Tindal became Post Operations and Air Corps Supply Officer, and 1st Lieut. Robert Alan, Adjutant and Post Exchange Officer.

Second Lieuts. Herbert D. Schultz, Jr., John A. Pechuls and Russell L. Flolo, Air Reserve, were all assigned to the 82nd Observation Squadron, organized under Major Bushrod Hoppin, and composed largely of the personnel from Brooks Field.

The entire command now consists of the 82nd Observation Squadron, the 9th Air Base Squadron, and attached Medical and Quartermaster troops, totaling 305 enlisted men and 15 officers. The air strength of the field is made up of two O-43's, one O-31A, one BT-2 and one PT-3.

Tow target work with the surrounding Coast Artillery stations has formed the bulk of missions, all of which have been flown by Lieuts. Pechuls, Schultz and Flolo. With the recent arrival of 2nd Lieuts. Leonard Hudson, Jr. and Frederick L. Moore, Air Reserve, graduates of the Advanced Flying School, Kelly Field, last June, relief is in sight. Second Lieut. Willard R. Lazarus, Air Corps, the only Air Corps Reserve officer to receive a regular commission as a result of last spring's examinations, has also arrived, and he was welcomed as a relief to officers well loaded with assignments.

Major Joseph J. Canella, Infantry, took over the Quartermaster position upon the departure of Major Joe S. Underwood, Quartermaster Corps, for Panama.

July was spent in organizing, settling down and becoming acquainted. The nine sets of officers' quarters on the field are all occupied, which means that any additional married officers will live in one of the surrounding towns. The bachelors are well situated on the post in the bachelor officers' quarters, with rooms to spare. The town of Mountain View is one mile away; Palo Alto, 10 miles, San Jose, 15, and San Francisco, 36 miles. A four-lane highway passes the gate of Moffett Field, so that going to town is a simple matter.

Relations with the civilian population are cordial. On July 21st, the people of Mountain View and Los Altos entertained the officers and ladies of the field at a dinner dance at the Los Altos Country Club, at which time Major Kenyon expressed the appreciation of the field for the welcome accorded. Frequent attendance by officers at Rotary and Chamber of Commerce luncheons helps maintain the good feeling that now exists. Major Canella, the Post Quartermaster, is most adept at this type of maneuver.

From July 18th to 31st, the 316th Observation Squadron, commanded by Major Charles Harold Kruse, Air Reserve, was stationed at Moffett Field. The squadron brought its own ships - BT-9's and PT-3's, and flew from morning till night, conducting radio missions and gunnery on ground targets in the BT-9's.

From August 1st to 6th, the 367th Observation Squadron, under the command of Major John Clarence Gray, also flying their own ships, performed the same type of work. Both outfits received the highest commendation from the Post Operations Officer for their thorough training and excellent cooperation with the permanent installation.

On July 23rd, the 316th Observation Squadron entertained the officers and ladies of the post at a party, and on July 30th, the 316th Squadron joined the officers of the post in a party and dance.

The 367th Squadron was on the field for only five days before leaving to take part in the Fourth Army Maneuvers, and flew a very full schedule during that time. "Both Captain George E. Henry, Unit Instructor, and Majors Kruse and Gray are to be congratulated for the fine performance of the two squadrons," says the News Letter Correspondent.

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LIGHTER-THAN-AIR ACTIVITIES AT FT. LEWIS

July 20th marked the first flight in many years of a captive balloon at Fort Lewis, Washington. The operation was conducted by the newly constituted 3rd Balloon Squadron, which arrived June 19th at Fort Lewis from Moffett Field, Calif. This move terminated the activities of the 19th Airship Squadron, 55 men of which, together with four officers, constituted the nucleus from which the Third Balloon Squadron was organized. The remaining enlisted personnel was transferred to either the 82nd Observation Squadron or the 9th Air Base Squadron, both at Moffett Field, Calif. The TC-13 airship made its final flight from that station on June 2nd, and was at once deflated and placed in storage.

Pilots on duty with the 3rd Balloon Squadron, Fort Lewis, are Majors Clarence B. Lober, Michael E. McHugo, Elmer J. Bowling, Captain Haynie McCormick, Warrant Officer Robert E. Lassiter, Master Sergeants Ronald Short and Arvin Miller. Technical Sergeant Benjamin Cheska and Staff Sergeants Harth, Harper and Fosse

(Continued on Page 7).

"AND I LEARNED ABOUT FLYING FROM THAT."

Robert A. Winston, in the July 15th issue of THE SPORTSMAN PILOT and under the caption of "Night Formation," writes most interestingly regarding several illusions he experienced during the course of a night formation flight. In an editorial note prefacing the article, it is stated:

"Many pilots have had experiences similar to the one Mr. Winston reports, but he was the first to admit it. This aroused so much interest in the Navy that the Bureau of Aeronautics made an investigation of the phenomenon. In case you do any formation night flying just keep in mind what happened to the author."

Mr. Winston's article is reprinted in the News Letter through the courtesy of THE SPORTSMAN PILOT, and is as follows:

We took off from North Island at dusk. Beale, in Number Seven, was leading the section. Denvers was on the left in Number Eight and I was on the right in Number Nine. Banking sharply to the left to avoid the three-hundred-foot ridge along Point Loma, we circled the field for altitude, waiting for a nasal voice to come through in the routine radio test: "Fighting One Group from Lexington Base: test. Acknowledge." And one after another we answered: "Lexington Base from One Fox Seven, aye aye!" "Aye aye from One Fox Eight." "Nine, aye aye!"

This formality over, Beale led us down the Strand past Coronado to Border Field, practicing cross-overs from V to echelon, circling over San Ysidro for a few moments to look at the garish neon lights of Tijuana across the Border, then heading east to Otay Mesa. Here he turned the lead over to Denvers, who led the way around between San Diego and the mountains to Camp Kearney, where Denvers turned the lead over to me. Over Camp Kearney, I broke up the section for the usual period of practice landings, signaling for a rendezvous half an hour later and turning the lead back over to Beale, who headed for North Island.

The night was cool, but I had worn a heavy flying suit over my flight jacket and felt very comfortable. As we passed north of San Diego, I eased back a few yards to enjoy the brilliant pattern of the myriad of twinkling lights below.

This was the way night flying should be, I told myself. Single seaters were the only thing - nobody riding behind you to worry about in case of trouble - hop over the side if the engine quit, or even set 'em down on a strip of highway if the landing light wasn't on the blink. Flying these stubby fighters was a real treat after the sluggish observation ships we had trained in, and I had never felt more comfortable while flying at night than I did then. The ship responded to slightest touch of the controls or throttle, which helped ease the strain of the constant jockeying for position necessary in cruising along at a hundred knots only ten paces from the leader.

After we passed San Diego, Beale circled North Island and headed west. The air grew bumpy as we crossed over the Bay and I opened my interval a few yards, watching Beale's ship closely to avoid hitting it as he surged up and down in the rough. The outline of Beale's ship grew dimmer as I increased my distance and step-up, so I shifted my gaze from the ship itself to the bright white gleam of the turtle-back light on the top of the fuselage. Out of the corner of my eye I saw the lights of the city crawl slowly past below me and disappear astern. Ahead and to the right were the lights of La Jolla, jutting out into the dark expanse of the Pacific.

The Western sky had become overcast, merging with the sea to form a solid pall of inky blackness which obliterated all suggestion of a horizon. Against this formless background Beale's ship now seemed suspended in space. Every indication of motion was blotted out by the absence of anything above or below his ship which might indicate direction, speed or distance. Even the interval between my ship and Beale's seemed altered to some strange new dimension. When he decreased his speed with the throttle, the ship ahead did not seem closer, but merely larger, and when he increased his speed, instead of seeming farther from me, it only seemed smaller. It was like the optical illusion of looking at one of those trick drawings which reverses itself after you stare at it for a few seconds.

I blinked my eyes, and the illusion disappeared, but in a few moments it returned. I blinked again, but it remained. I shook my head, and again things were normal; distance was no longer size, but distance, as it should be.

Staring intently at the white light ahead of me, I concentrated on the task of keeping the interval between the two ships from changing. This time I felt it with a distinct snap as the dimensions reversed themselves. Irritated, I jerked my head around and looked back over my right shoulder at the lights of the city behind me. Instantly my sense of orientation returned; my plane was no longer suspended in space, but moving forward.

Although my backward glance had been brief, I looked ahead again just in time to avoid hitting Beale's ship, which had been thrown up in front of me by a violent updraft. This would never do, I realized. Background or no background,

I must keep my eyes where they belonged or I would be in real trouble.

A quick glance over at Denvers' ship showed me that my own interval was too close, making an uneven formation. The second plane in the section always set the interval, so I obediently eased my throttle and dropped back a few yards until I was even with Denvers.

A few seconds later the other two ships banked up in a right turn. I started to follow, but the controls felt queer. Glancing at the turn-and-bank indicator, I saw that the pointer indicated a left turn, while the ball showed a right bank. No help there, I thought; Beale must be skidding his turn. Soon it became apparent that I was falling behind the others, who were above and ahead of me. I advanced my throttle, but the distance increased. Soon I was in a vertical bank, but still they were pulling away from me.

Desperately I jammed on full gun, past the throttle-stop, in an effort to catch up. But still they pulled ahead of me. A glance at my airspeed indicator showed 130 knots, with the speed increasing. Still the inky blackness gave me no hint of my direction. The other two ships were now banked up vertically above me. My feeling of helplessness changed to resentment. What was that damned fool Beale trying to do! A wing-over? Of all the crazy things to do at night! I reached for my microphone to protest.

Swiftly the other two ships drifted away and disappeared above me. A lone star appeared dead ahead over my engine cowling. Suddenly I felt the sickening, lost, suspended-in-space sensation which precedes a whip-stall. My mind flashed ahead to the consequences: a vertical climb . . . the sudden loss of flying speed which would follow . . . the violent forward lurch of the plane from the weight of the heavy engine in its nose... the rending crunch as the engine would be snapped off its mountings. . .

Frantically I shoved the stick all the way forward in an attempt to recover from the stall, but instead of levelling off into normal flight, the ship behaved as if possessed; the controls stiffened, the wires screamed and the engine howled like a thousand devils. My goggles were snatched from my head as if by an unseen hand and the wind tore at my eyes. I felt the safety belt dig into my thighs and the blood bulging the veins of my head, and knew that I had gone over on my back and that the ship was in inverted flight.

This was the first indication of my true predicament that I had had for several seconds. Fortunately the safety belt was fairly tight, and I could still reach the rudder pedals with my toes. Blinded by the terrific gale that beat into my eyes, I instinctively went through the motions of a half-roll, easing the throttle at the same time. The high-pitched scream of the wires gradually descended the scale, the gale died down and my sight returned enough for me to see a glow which marked an unnaturally high horizon.

Steading down on this, I glanced at my instruments: air-speed 170 knots, altitude 200 feet. Quickly I jerked the stick back and the black horizon dropped abruptly beneath me to reveal the lights of San Diego dead ahead. I had almost plowed straight into the ridge of Point Loma.

Only then, with the realization of the fate I had so narrowly escaped, did fear set in. I felt suddenly cold and weak. The thought of what had almost happened was repugnant, and in a few seconds it grew like an enormous, intangible thing of appalling proportions, as my mind tried to disbelieve it. My knees were shaking so hard that I could hardly keep my feet on the controls.

An insistent voice in my ear-phones recalled me: "One Fox Nine! One Fox Nine from One Fox Seven! Acknowledge!"

Mechanically I lifted the dangling microphone and forced myself to speak: "One Fox Seven from One Fox Nine: my goggles blew off. Am returning to base. Acknowledge."

"One Fox Seven, aye, aye."

My mind leaped to the new task. The lights of North Island were beneath me and my engine was purring along as smoothly as if nothing had ever happened The whole incident seemed far away, impossible. I felt warm again, and my knees stopped shaking. Wiping my eyes with the back of my glove, I hunched forward to take advantage of the scanty protection offered by the windshield and scanned the horizon.

Far above me, the other two planes were circling the field together. Off to my right and below me, a division of Scouting Four was breaking up down over the Strand. Violating all course rules, I cut in ahead of them and nosed down towards the flood light at the end of the landing mat. I nursed the ship along in a power glide, eased it down until the wheels touched, chopped the throttle back, and rolled to an easy stop. Then, after I was safely down, my knees began to shake again so violently that I could hardly taxi back to the hangar.

My mechanic stared at me curiously as I dragged myself out of the narrow cockpit. "Everything all right, sir?" he asked as he extended the inspection sheet for me to sign.

"Yes", I answered slowly, "everything's all right. But you very nearly lost your airplane tonight."

"How was that, sir?"

For a long moment I looked back over my shoulder at the black pall over Point Loma. "I don't know," I replied vaguely. "My goggles blew off." Ab-

sently I signed the inspection sheet and walked slowly away towards the squadron office. The ground felt strangely warm and comforting under my feet and the lights seemed unusually bright and pleasant.

A few minutes later the others hurried up. "What the devil happened to you?" demanded Beale. "Why did you run away from us?"

"Run away from you?" I cried angrily. "It's the other way around! Why did you go into that wing-over? You nearly spun me in!"

"What wing-over? What are you talking about?"

"Don't try to give me that stuff! You know well enough. When we were headed west over Mission Beach. You went into a right wing-over, and I nearly did a whip-stall trying to keep up with you. I damned near went in before I got straightened out."

"But we didn't turn right!" protested Beale. "We turned left!"

"Yeah," said Denvers, "and I looked out and saw you banked up on your side. You hung there a minute, then dived out under us like a flash. That was the last we saw of you until we heard you over the radio and saw you coming in to land."

I must have paled visibly. "Then you never turned to the right?"

"Of course not," said Beale. "I was about to bring us home, before you busted up the formation. We didn't know where the devil you had gone, till you finally answered after I had called you about five times."

"Then I was headed straight down, instead of up", I said, shuddering.

"What do you mean?", asked Denvers.

"I felt like I was about to do a whip-stall," I said, "so I pushed over, but instead of heading straight up, I must have headed straight down. I thought I saw a star dead ahead, but it must have been a light on the beach."

"You mean you pushed over on your back from three thousand feet?" asked Beake incredulously.

"Yes," I answered faintly, "and with full gun."

"Great Fish!" said Denvers. "Then you did an outside loop!"

"Just half of one; I managed to roll out of it at the bottom."

"Well, if that's the case," drawled Beale, "from now on you're just living on borrowed time!"

"Fine damn thing!" said Denvers facetiously. "We'd never have found you. We'd have been out there all night dropping flares on the water."

"I guess you would. I must have had close to three hundred knots on the way down."

"How on earth did you ever get mixed up like that?", asked Beale.

"I don't know. I could have sworn you were turning the other way."

"It's easy to get confused on a dark night," said Denvers. "One night down at Pensacola we were flying cross-country formation to Mobile, and I got balled up as we crossed the bay. When we got there, I looked out and there was Mobile cocked up at a forty-five degree angle. 'Great Guns!' says I, 'is Mobile built on the side of a hill?' But it was me who was banked up on my side, as I found when I spun out of the formation."

"Yes, that's it; that's exactly what happened to me."

We hung up our flight gear and started out into the night, walking along silently for a few moments. Suddenly I realized for the first time how close I had come to having my life snuffed out like a dropped candle. I could almost see the others sorting out my jumbled personal effects to ship home. "By the way," I said absently, "the keys to my trunk are in the top drawer of my dresser. Don't go busting it open."

"Say, what are you mumbling about?" asked Beale.

"Nothing," I said, snapping back with a start. "Come on; let's eat."

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Lighter than Air Activities at Ft. Lewis

(Continued from Page 4).

also accompanied the balloon squadron in the move to its new station.

All those interested in lighter-than-air activities regret the passing of the airship and its useful activities in the Air Corps picture. In final tribute to the TC-13, a brief summary of its achievements is perhaps in order.

This airship was in commission just over four years, during which time it flew 3819 hours. The longest distance covered was 1854 miles, which was flown at 65 miles per hour air speed and adverse wind over much of the journey. At 40 m.p.h. it had a computed still air range of 3,500 miles. The longest flight in point of time was slightly over 76 hours. This flight was terminated on account of weather, and at that time over 500 gallons of fuel remained. This was probably the first airship constructed in which actual performance exceeded that laid down in specifications.

It is interesting to note that the overall design safety factor was four times that of many large rigid airships, which proved its value when the TC-13 outrode a storm, during which wind velocities exceeded 65 miles per hour and great turbulence existed.

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ATTENTION: As previously stated, the News Letter most cordially welcomes stories from pilots under the heading: "And I Learned About Flying From That."

AIRPLANES DO CRASH

By Captain Herbert B. Wright, Flight Surgeon
37th Division Aviation, Ohio National Guard

Is there anything that you can do about that? Indeed there is, if you are anywhere near the scene of the accident. During active service, on maneuvers, or during training periods, you may very well see an airplane crack-up and be near enough to render assistance. It seems worth while to inform the troops throughout the State in regard to some of the peculiar problems which may arise at the scene of an accident. The men of our own squadron are familiar with the best methods of rendering aid but chances are good that if an accident occurs it will be in territory remote from the landing field. Other troops will be the first on the spot and should be familiar with the best methods of supplying intelligent aid.

The first thing to do is to get the pilot and passengers out of the airplane for most frequently if the crash has been a severe one, the people involved have been pinned in the wreckage. A cool collected person will have one thought uppermost in his mind upon approaching the wreck, that is, the danger of fire. Gasoline from broken tanks is usually sprayed over the airplane and surrounding ground. Inflammable fabric, clothing, and nearby objects, become soaked with it and the slightest spark may create a tragic flaming pyre. The first important thing one can do is to organize the crowd about the wreck so as to prevent fire. There always is a crowd, you know, they seem to spring up from nowhere. Definite guards should be posted to keep the spectators back and see that no one in the crowd is smoking. Your efforts may then safely be concentrated upon removing the injured from the wrecked airplane. In doing this it may be necessary to saw through certain members of the structure. In this case, don't forget that danger of fire is still present and unless your hack saw is kept well oiled, it may create a spark which will touch off that lurking demon. Static sparks may also occur and should be guarded against as well as possible. Interfering with the battery or battery cables is a dangerous operation and should be left until the occupants have been safely removed.

When the pilot and passengers have been removed they should be carried a safe distance from the scene of the wreck and laid upon a blanket, coat, or whatever material is available. The cardinal rules in the treatment of shock then comes into force and must be followed implicitly. They include:

1. Keep the patient quiet.
2. Keep the patient warm.
3. Relieve the patient's pain
4. Stop the bleeding.

"Quiet" means motionless and in repose. It has often been said that as many airplane pilots have been killed by their being rushed from the scene of an accident in an unsuitable conveyance as have been killed by airplane crashes themselves. To deposit a seriously injured person in a passenger automobile and drive him at sixty miles an hour over rough roads to the nearest hospital is the worst possible thing that can be done. The further shock of rough handling, movement of fractured bones, increase in bleeding and uncomfortable positions is often just enough to cause fatality, whereas if the case had been handled properly he might have had a chance to survive. Just because a man's life is at stake don't think that action for action's sake is necessary. More help to the injured is given by considered and intelligent delay than can possibly come from hurried unconsidered "doing something about it". So lay the patient on the ground and keep him there until a suitable litter can be devised and an ambulance obtained, then, don't turn on the siren and try to imitate Barney Oldfield on the way to the hospital. The speed of the ambulance on any but the smoothest, straightest, roads should not exceed twenty miles an hour and ten miles an hour is often much better.

Warmth is of extreme importance to anyone seriously injured. The word "shock" means that the circulatory apparatus has been confused and become inadequate. The patient's extremities are cold; he is pale; and he is probably unconscious. Everything possible should be done to raise his temperature to normal. Even on hot days he should be covered and on the colder days he should have blankets and clothing piled on in profusion. If hot water bottles are available put them at each foot, at the sides of the body, and along the arms and legs. Be careful about burning an unconscious person with hot water bottles. It is easily done and just as easily avoided by placing a piece of thin clothing between the hot water bottle and the skin.

Relief of pain without the use of hypnotics can be accomplished in the field by immobilizing any fractured bones. Pain occurs when the broken ends of bones rub on each other. Shock is increased each time pain occurs. It becomes highly important, therefore, to splint the fractures immediately. Methods of splinting are well described in TR 112-5 and should be familiar to all. If a Thomas splint is available it should be applied immediately. The traction on the limb is important because when a bone is broken the muscular action tends to pull the fragments

past each other. If this muscular action is counteracted the job of properly setting the fractures later will be much simpler. If formal apparatus of this sort is not available, a fractured limb may be placed in a pillow, folded blanket or coat; a stick of wood or a piece of board which is placed on each side of the limb and extends throughout its entire length can then be held in place by an encircling piece of bandage or rope. This not only relieves most of the pain but allows the patient to be moved when the proper time comes.

Control of bleeding is of equal importance in combating shock. Most bleeding can be controlled by compression. Applying the first aid bandages (from the packet in the airplane or your own supply) directly over the wound tightly enough to furnish compression will stop all ordinary bleeding. This is the first method to be tried and the use of tourniquets should be reserved for bleeding that is not controlled by compression. A peculiar result in giving soldiers and others superficial education in first aid measures is the great desire it seems to create to use a tourniquet on every occasion. Don't show off your meager knowledge by applying a tourniquet to a finger superficially cut when a little pressure will do the work as well. Use pressure first and a tourniquet if that hasn't worked. Tourniquets should be applied around the upper thigh near the hip and around the upper arm near the shoulder. They are useless near the knee, anywhere on the lower leg or on the forearm.

If the patient is now lying down, is warm, his fractures splinted, and his bleeding stopped, you have done everything a doctor might have done except give him morphine. It is hoped that by the time all these maneuvers have been accomplished, the services of a medical officer will have been obtained. If the officer has arrived he will take charge and your responsibilities are ended as far as the patient goes. You should make sure, however, that the airplane is well guarded to prevent theft of instruments and other valuable Government property.

If the medical officer has not arrived your next move is to wait. What do you wait for? - For two things: First, and the most important, the partial recovery of your patient. You hope that his pulse will become slower and easier to feel, and you hope that his color returns, and that he regains consciousness. You should be willing to wait an hour for some of these things to happen before you consider moving him. The second thing you wait for is a proper litter and a proper conveyance in which to transport the patient to the nearest medical aid. Your patient must be transported slowly in a comfortable position without any more movement on his part than can be helped. If he has to be carried to a suitable road, that is much better than getting the ambulance bogged down in the same field in which the airplane crashed. In transporting the patient by litter, do it slowly and avoid jostling him about.

The above suggestions apply to automobile and similar accidents as well as to those concerning airplanes. It is hoped that should the occasion arise, they will be a factor in prompt and efficient first aid.-From Ohio Guardsman.

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2ND BOMBARDMENT GROUP PARTICIPATES IN JOINT ARMY-NAVY EXERCISE

Hq. and Hqrs. Sqdn., 2nd Bomb. Group:

The following officers and enlisted men of this organization departed from Langley Field, Va., for March Field, Calif., to participate in the West Coast maneuvers: Lieut. Colonel Olds, Captains McCormick, Williams, Caldwell, 1st Lieuts. Freeman, Mills, Tucker, Master Sergeant Davis, Tech. Sergeants Cobb, Moselander, Staff Sergeants Boutty, Boyles, Jolly, McDonald, Van Sweringen, Sergeants Dodson, Holmes, Ludwig, Corporals Smith, Vick, Wilson, Privates 1st Class Jester, Olive, Zaun, Privates Harbaugh, Hucik, Johnson and Trout.

20th Bombardment Squadron:

Two B-17's from this organization, with assigned combat crews, departed for March Field on August 1st to participate in the Joint Army-Navy Exercise No. 4.

49th Bombardment Squadron:

On August 1st, three B-17 Bombers of this organization, carrying 27 men, departed for the West Coast for participation in the Joint Army-Navy Exercise. Thirteen of the 27 men were officers. Eighteen other enlisted men were ferried to the West Coast by Transport planes and B-10B's.

21st Reconnaissance Squadron:

This Squadron has one plane participating in maneuvers being held on the West Coast, that plane being the YOA-5 Amphibian, better known as the "Big Duck." The crew members from this Squadron are Major Downey, Captain Fitzmaurice, Staff Sgt. John E. Morris, Corporals Paul Hamerla and George A. Kingston. In addition to the above, we also have 1st Lieut. John W. Egan, Privates 1st Class William A. Lentz and Kenneth G. Wickman, who are participating in the maneuvers with other squadrons.

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GUNNERY PRACTICE BY LANGLEY PURSUITERS AT VIRGINIA BEACH
By the News Letter Correspondent

The Eighth Pursuit Group returned to their home base, Langley Field, Va., on August 5th, after ten days of ground and aerial gunnery at Virginia Beach, Va.

This completed the third such encampment of the Group this year at the Virginia National Guard Airport, located on the State Rifle Range, and it was considerably simplified by being held between periods of encampments of Virginia National Guard units, thus utilizing their camp, tentage, et al, saving transportation and time in establishing camp, to say nothing of a lot of hard work.

To the members of the 8th Pursuit Group, Virginia Beach has become a second home address and to many the favorite. Rumor No. 01-76-7Z even has it that the barracks will be moved to Virginia Beach and the tents will be pitched at Langley. Virginia Beach offers one of the best beach resorts on the Atlantic Coast, and for those who aren't interested in the fine surf ... well, there's still the beach (and believe it or not, the ratio is at least two to one!!!)

Aside from the recreational facilities, working conditions are ideal at the National Guard Airport. The field, although somewhat small, has proven, with the help of a few axes and shovels and the necessary man power, adequate for our PB-2A airplanes.

The beach and sand dunes to the south of the rifle range, and only a few minutes by truck from camp, make an excellent ground range. The coast along this area is clear of small boats, making the area between Coast Guard stations excellent for aerial gunnery. This is quite a contrast with operations at home, where our ground range is on Plum Tree Island, and requires boat trips and a lot of 4:00 a.m. risings for the range detail, to say nothing of bologna and cold ham lunches, and an aerial range twenty minutes away by air.

As in the past, this encampment was utilized for long range altitude and mass firing on both aerial and ground targets. During our exercise in June-July, all combat crews were qualified, so we were able to concentrate on formation and long range firing. Several still-water inlets south of the airdrome offer excellent targets for mass firing. The advantage of preliminary mass firing on a water target is easily seen as the pattern of shots, center of impact, etc., can be readily seen by the pilots or by a single ship acting as observer.

As in previous instances, firing culminated in eighteen ships firing simultaneously on one 60' x 6' target, and flights of six ships firing on a 6' x 30' target. Our record of burning down such targets with tracer ammunition is still 100%. For the larger target, the Squadron of eighteen ships approached in three six-ship flights "strings" abreast, on the same level and about 150 feet apart. From this formation all ships could turn simultaneously to the right or left as the case may be, then dive simultaneously straight forward at the target. In either case the field of fire forward is clear of other ships in the formation, the only prerequisite being that all ships dive together and have plenty of ammunition with the empty case chutes stopped up to prevent ships to the rear from picking up empty cases.

This formation may be used on any size target, ground or aerial, the volume and concentration of fire being tantamount to complete destruction of the target. However, for a small ground target or small formation, simulated by a single towed target, better accuracy of fire may be obtained by having a larger interval between flights, the flights approaching in "waves" and beginning firing as the preceding flight ceases and starts pulling away. It must be borne in mind, however, that this firing is at fairly long range. All airplanes cease firing and pull out away from the echelon before passing the target.

At the present time we are on the alert, constantly scanning the silver screen for more concrete evidence of our firing accomplishments as recorded by Pathe News, our guests at the last encampment.

Daily missions of mass firing, aerial gunnery and interception problems continue at Langley Field, but, Oh!.... for a cool swim and a good sun bath or just a walk along the boardwalk.

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SHOULDER SLEEVE INSIGNIA FOR GHQ A.F.

The War Department recently approved the following shoulder sleeve insignia for the General Headquarters Air Force:

On a golden orange disk 2¾ inch in diameter, an ultramarine blue, three-bladed impeller, the surved surfaces emanating from the points of an imaginary ¾" equilateral triangle.

DESCRIPTION:

The design represents the GHQ Air Force:- the striking combat element of the Air Corps as originally organized into three wings. The action expressed by the three-bladed impeller is symbolic of speed, mobility, flight through space, and destructive power exemplified by the GHQ Air Force.

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NOTICE TO PILOTS:

Are you writing your story "And I Learned About Flying From That" for the News Letter? Your experience may help others - perhaps more than you think.

V-7462, A.C.

AUTOMATIC LANDING OF BIG ARMY PLANE ACCOMPLISHED

The Army Air Corps has just completed a series of history making experimental flights at Wright Field, Dayton, Ohio, in which a large Army cargo plane was landed several times under full automatic control. Utilizing a new device, perfected after two years of intensive research by Air Corps engineers, the plane was repeatedly landed under adverse wind conditions without any human assistance of any kind. The perfection of this device makes it possible to land a plane in a dense fog, in absolute darkness or under other adverse conditions. This development opens up a wide field of speculation as to the future of military and commercial planes guided and controlled by automatic devices.

The results of the Wright Field experiments are certain to attract wide attention from all persons interested in the safe navigation of the air and mark a notable extension of the field of automatic control of airplanes.

The automatic landings of the big cargo airplane were made with amazing accuracy.

Unlike other so-called automatic landing systems in which the pilot of the airplane or ground personnel actually through remote control directs the landing of the airplane, the Air Corps craft is landed without assistance from the human pilot of the airplane and also without remote control from the ground.

Air Corps officials stated that the closest other approach to fully automatic landing of which they have knowledge is a system being used experimentally by a civil agency on the West Coast, in which the pilot must constantly make adjustments during the landing procedure. Another method is that used in the British "Queen Bee" experiments in which the airplane is remotely controlled in flight and landed by an observer either on the ground or in an accompanying airplane, who must be able to see the airplane which is under radio control.

Air Corps officials said that their experiments and research have been conducted in order to arrive at fully automatic landing that removes the human element from the procedure of landing through fog and other adverse weather conditions which prevent visual contact from the airplane to the ground or from the ground to the airplane.

Aboard the big cargo airplane during the successful automatic landing tests were Captains Carl J. Crane, George V. Holloman and Mr. Raymond Stout, all of whom were, during the automatic flights and landings, nothing more than interested passengers, since no human hand touched a control once the automatic features were placed into operation.

With the Sperry gyro pilot flying the airplane headed in a southerly direction, the master automatic landing switch was closed over Dayton and from that instant until the final roll of the airplane headed borth on the runway at Patterson Field not one control was touched by the airmen aboard the airplane. With the exception of the Sperry gyro pilot, all of the electro-mechanic elements of the automatic landing system were designed by personnel of the Air Corps Materiel Division at Wright Field.

The automatic landing system as used in the recent tests at Wright Field shows promise of eliminating the possibility of human error in aircraft landings under conditions of poor weather. The Air Corps expects to conduct further experiments with the automatic system of landing to the end that additional refinements will make automatic landing an everyday occurrence in good weather as well as in bad.

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RESERVE OFFICERS TRAIN AT LANGLEY FIELD

The 96th Bombardment Squadron at Langley Field, Va., changed the nature of its activities with the start of the month of August. When the Y1B-17's departed for the West Coast Army-Navy Maneuvers, August 1st, the activities of this squadron were turned toward the training of the following-named Air Reserve officers who had reported several days previously for 14 days' active duty viz: Major Ivor Massey, Captains William H. McAvoy, Eric Knue Shilling, 1st Lieuts. Winthrop H. Towner, Norman Lee Barr, Marvin C. Demler, Wilbur O. Riley and Lawrence S. Semans.

The training consisted of familiarization, navigation and bombing missions in PT-3A, BT-9A, B-10B and OA-4A airplanes. In addition, daily lectures on tactical subjects were given.

Considering the fact that the entire 2nd Bombardment Group was on maneuvers and the camp was very short of equipment and personnel, everything went satisfactorily until August 5th, when the only B-10B left in the Squadron ran into difficulties. The pilot ground-looped when landing from a bombing mission. There was no injury to personnel.

This sorry ending to an otherwise successful training period left no one so sad as the officers just reporting to the Second Bombardment Group for duty. They were hoping to get in a great deal of flying time in that plane before the Group returned from the West Coast.

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Some experience in your flying career which taught you a lesson may also prove one to others. Write about it for the News Letter under "And I Learned About Flying From That."

LIEUT. COLONEL WILLIAM F. VOLANDT

Lieut. Colonel William F. Volandt, Air Corps, now on duty as Chief of the Procurement Section, Materiel Division, Wright Field, Dayton, Ohio, was born at Fort Assiniboine, Montana, October 8, 1879. He received his education in the grammar schools, high school and commercial school in Washington, D.C. For a period of six years, from October 6,1898, to October 7, 1904, he served as a Private, Acting Hospital Steward, and Sergeant in the Hospital Corps, U.S. Army. He then entered the service of the government in a civilian capacity, and for a period of nearly twelve years, from September, 1905, to March, 1917, he was on duty in the Quartermaster's Office at Fort Myer, Va., during the last five years of which he was the chief clerk of that office.

Commissioned a 1st Lieutenant in the Aviation Section, Signal Officers Reserve Corps, February 12, 1917, Colonel Volandt was, on March 25, 1917, assigned to active duty at Chandler Field, Essington, Pa., where he served as Adjutant until August 13, 1917, and as Ordnance Officer to November 12, 1917. During the entire period of his stay at Chandler Field, he performed the additional duties of Supply Officer, Signal Corps, and Quartermaster.

Transferred to Gerstner Field, Lake Charles, La., he was on duty as Supply Officer, Disbursing Officer and Signal Officer until January 8, 1919. He commanded the post for five weeks during November and December, 1918.

On December 14, 1918, Colonel Volandt reported for duty in the Office of the Director of Military Aeronautics, Washington, D.C., and he was assigned to the Supply Division and placed in charge of the Property Accounting Branch. From April 25th to August 7, 1919, he was Chief of the Finance Division, Supply Group. He served as a member of the Board of Contract Review and as a member of the Claims Board to October 10, 1919. He was Assistant Chief of the Liquidation Division, Air Service, from October 10, 1919, to April 9, 1920, and thereafter Chief of the Liquidation Division to October 13, 1920. He next served as Chief of the Finance Contact Division to November 25, 1921. On September 21,1920, he was appointed Contracting Officer for the Air Service at Washington, D.C. On October 19, 1921, he was designated as Officer in Charge of all records referring to litigation on war contracts for or against the government.

Colonel Volandt served as a member of the Around-the-World Flight Committee, during 1924, in connection with the handling of financial matters related thereto, and he received the official commendation of the Chief of the Air Corps for the thoroughness of his work.

Transferred to Bolling Field, D.C., in June, 1924, Colonel Volandt served at various times as Supply Officer, Consolidated Mess Officer, Post Exchange Officer, Adjutant and Personnel Adjutant until June, 1925, when he was assigned to McCook Field, Dayton, Ohio, for duty as Contracting Officer of the Engineering Division. He was stationed at this field and later at Wright Field, Dayton, Ohio, until August 13, 1928, and was then transferred to the Philippine Department, where he was on duty at the Philippine Air Depot at Nichols Field as Purchasing and Contracting Officer for the Air Corps in the Philippine Department until July 1, 1930.

Upon his return to the United States, he was, on September 26, 1930, assigned to the Finance Division, Office of the Chief of the Air Corps, Washington, D.C., as Assistant Chief and later as Chief of that Division, also Fiscal Officer.

Colonel Volandt at various times received official commendation for the efficient and thorough manner in which he handled the duties of his office. He was transferred to his present station, Wright Field, in November, 1934, and was appointed Purchasing and Contracting Officer for the Air Corps at the Materiel Division. He served as Assistant Chief of the Procurement Section of the Materiel Division until July 1, 1937, when he was appointed Chief of that Section.

Colonel Volandt was commissioned in the Air Service, Regular Army, as a Captain, October 1, 1920, to rank from July 1st of that year. He was promoted to Major on October 1, 1930, and to Lieut. Colonel (temporary) June 16, 1936.

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LIEUT. COLONEL ERNEST CLARK

Lieut. Colonel Ernest Clark, Air Corps, now on duty as Air Officer of the 3rd Corps Area, Baltimore, Md., was bor at Terre Haute, Ind., December 13,1884.

For a period of three years from March 15, 1899, he served as an enlisted man in the 10th U.S. Infantry, being discharged as a Sergeant. Reenlisting on July 31, 1902, he was assigned to Company G, 20th Infantry, and he served therewith until discharged by purchase, as a Corporal, August 24, 1903. While with the Infantry, he saw service in Cuba.

From 1907 to 1917, Colonel Clark served with the Indiana National Guard, being commissioned a second lieutenant on February 24, 1908, and promoted to

1st Lieutenant on December 30, 1914. He was on duty as aide-de-camp to Brigadier General E.M. Lewis, the Commanding Officer of the Indiana Brigade, from July 15, 1916, to February 1, 1917, at which time this brigade was in the Federal service on the Mexican Border.

In March, 1917, Colonel Clark was authorized by the Militia Bureau at Washington, D.C., to take the course in aviation at the Signal Corps Aviation School at Rockwell Field, San Diego, Calif. He completed this course and qualified for the rating of Junior Military Aviator in July, 1917..

He received appointment as temporary 1st Lieutenant, Signal Corps, U.S. Army, on November 14, 1917, and was officially rated as Junior Military Aviator on the same date. He continued on duty at Rockwell Field, serving as Assistant to the Officer in Charge of Flying until his transfer to March Field, Riverside, Calif., for duty as Officer in Charge of Flying. While on duty at Rockwell Field, he established the auxiliary flying field at Otay Mesa, then known as "East Field," and had direct charge, and was responsible for, all flying at this field.

At March Field, Colonel Clark not only established the course of flying instruction thereat, but made an enviable record in having given 28,000 hours of instruction to flying cadets without a fatality.

In March, 1919, Colonel Clark assumed the additional duty of commanding officer of the Flying School Detachment, and for a number of months he also served as Executive Officer of the field. During the summer months of 1920 he was in charge of Forest Fire Patrol operations.

Transferred to Chanute Field, Rantoul, Ill., in April, 1921, Colonel Clark was stationed at this field until October 6, 1927. During this period, his duties were varied in character. He commanded the Air Service Technical School Detachment, was Executive Officer of the field, Intelligence Officer, Provost Marshal, Post Operations Officer, Engineering Officer and Meteorological Officer. For a number of years he commanded the 15th Observation Squadron.

At his next station, Langley Field, Va., Colonel Clark was Post and Wing Operations Officer, Post Airways Officer, and Post Information Officer to July, 1928. He was then assigned to the command of the 59th Service Squadron, 2nd Bombardment Group. For several months he was in temporary command of the 2nd Bombardment Group.

Transferred to Bolling Field, D.C., in February, 1929, he was placed in command of the Air Corps Detachment thereat. For brief periods he served as Executive Officer and Commanding Officer of the Field.

In June, 1931, Colonel Clark arrived in the Hawaiian Department and assumed command of the 18th Pursuit Group at Wheeler Field, Schofield Barracks, T.H. He served in the Hawaiian Department for a period of over four years and, in November, 1935, he reported for duty with the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich.

On March 19, 1937, he began his present duties as Air Officer of the 3rd Corps Area at Baltimore, Md.

Colonel Clark was commissioned a Captain in the Air Corps, Regular Army, on September 23, 1920. He was promoted to Major on March 1, 1931, and to Lieut. Colonel (temporary), March 12, 1935. He held this temporary rank until September 3, 1935, and was reappointed to this temporary rank on June 22, 1936.

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23RD BOMB. SQUADRON GOES INTO THE FIELD

The 23rd Bombardment Squadron, Luke Field, T.H., after a rousing Fourth of July celebration, initiated field activity for the 5th Composite Group for the new fiscal year by moving to Bellows Field on July 6th for two weeks' field duty. With all of the Keystone airplanes of Luke Field assigned to them, the Squadron made short work of the move across the Island of Oahu.

The camp started off in the rain, but after a day or two of wet weather, ground gunnery activities really got under way. The Squadron Armament Section had preceded the main body and had the pistol and the 1,000-inch machine gun range all set up with enough targets made to last during the period of the camp.

Although all planes flew all morning, the main activities of the camp centered around the gunnery ranges. During the period of the encampment every man in the squadron completed firing the pistol course, the machine gun course on the 1,000-inch range, and the anti-aircraft firing at two targets. In addition to the Squadron's ground gunnery, crews for airdrome defense were given a comprehensive practical course in the setting up and operation of the ground machine gun.

On July 19th, the Squadron regretfully broke camp and headed by air and motor transport back to Luke Field - its first phase of training in the new fiscal year completed.

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GENERAL DRUM LEAVES THE HAWAIIAN DEPT.

"It was with deep regret," says the News Letter Correspondent of the Hawaiian Air Depot, "that the Depot bade Aloha to Major General Hugh A. Drum, who sailed for the mainland on July 30th. The General was very much 'air-minded' and will be long remembered for his work in building up the Air Corps in this Department."

THE TRANS-POLAR FLIGHT TO THE UNITED STATES BY THE RUSSIAN AVIATORS

Although much has appeared in the press in this country regarding the recent flight of the Russian aviators Gromov, Yumashev and Danilin from Moscow to the United States, via the North Pole, it is believed News Letter readers will be interested in reading another account of the flight which appeared in the weekly edition of the "Moscow News" of July 21st. This newspaper is printed in the English language for the English-speaking people in the Soviet Union and throughout the world. The account of the flight in this newspaper is as follows:

'The shortest air route between the USSR and America, by way of the North Pole, has again been covered by an ANT-25 plane, its crew headed this time by Hero of the Soviet Union M.M. Gromov, and with Major A.B. Yumashev as second pilot and S.A. Danilin as navigator.

The airplane left Moscow July 12, at 3:21 a.m. Moscow time, and landed in San Jacinto, California, July 14. It was in the air 62 hours, 17 minutes. The distance between the starting point and the point of landing exceeds 10,200 km.; the distance covered by the plane is equal to approximately 11,500 km. Thus the ANT-25 has broken the world long-distance record.

The route was as follows: Moscow - Kolguyev Island-Cape Stolbovoi (Novaya Zemlya) - Franz Josef Land - North Pole - Patrick Land - Banks Land. From there the plane flew along the 120th meridian over Canada, crossing the Rocky Mountains to the Pacific Coast via San Francisco and Los Angeles, and landing near the town of San Jacinto (California) midway between Los Angeles and San Diego.

During the flight the airplane flew more than 5,500 km. over oceans, seas and ice.

The plane left Moscow under favorable meteorological conditions, but beginning with Zagorsk flew above dense clouds and fogs and was twice forced to pass through heavy cloud banks, flying blind at times. Over the Kara Sea, the weather cleared up. However, beginning with Franz Josef Land, the airplane flew over fogs and unbroken clouds and crossed a cyclone in the region of the 85th and 86th parallels, piercing the clouds at a great altitude, and flying blind. The plane emerged from the cyclone in the region of the North Pole. Up to the North Pole the airplane encountered head winds with a velocity of 30 to 40 km. an hour.

Clouds and Fogs

From the North Pole to southern California, the airplane flew under favorable weather conditions and with accompanying winds. Flying to the Rocky Mountains along the 120th Meridian, it crossed them amidst thick clouds and heavy rains. When ice began to crust the airplane, it sharply changed its course and emerged on the Pacific Coast. Thereupon the flight continued under conditions of unbroken clouds and fogs right up to Los Angeles.

The same constructors, engineers, mechanics and motor specialists who prepared Valery Chkalov's* plane put Gromov's into condition. All the work at the airdrome was under the supervision of engineer E.K. Stoman, with a special staff headed by V.I. Chekalov in charge of all arrangements for the flight.

'A special fuel for the motor, which was built and prepared for the flight at the Frunze Plant, was worked out at the Central Institute of Aviation Motor Construction,' Chekalov pointed out. 'Plants of the All-Union Precision Instruments Trust manufactured and supplied the airplane with the latest aero-navigation instruments.'

In preparing the second ANT-25 plane, the experience of Chkalov's flight was taken into consideration. The airplane was somewhat lightened by means of interior re-equipment and, chiefly, by replacing certain metal with lighter metal or wood. The oxygen supply on Gromov's plane was treble that carried by Chkalov. A much larger quantity of anti-freeze liquid, used to prevent the formation of an ice crust on the propeller, was taken.

Radio communication between the plane and the earth were organized in a new way, Chekalov stated. On the territory of the Soviet Union, the messages from the ANT-25 plane were received by about 20 polar stations and all vessels in the White and Barents seas and the Arctic Ocean. All these stations immediately relayed the information received from the plane to the central short wave station situated near Moscow. This was the only Soviet radio station authorized to maintain direct communications with the ANT-25 and to transmit information to it.

The powerful Comintern Station, operating on long waves, was also prepared, in an emergency, to contact the plane at five minutes' notice from the staff of the flight. The radio station on Dickson Island worked simultaneously with the central station. This was arranged so that should complications arise in the central station's receipt of transmission, the plane would still be insured of the necessary weather information.

Radio stations situated on the territory of Canada and the United States received reports from the plane and immediately relayed them to two central stations situated in Anchorage (Alaska) and Seattle (USA). Only these two stations were authorized to maintain direct two-way communications with Gromov's plane.

Radio communications between America and the USSR were organized in a new fashion, with radio-telephone communications between Nome and Anadyr and also between Seattle and Khabarovsk to be established in case of emergency. Such communication would have made it possible for Moscow to receive very rapidly the necessary information on the movement of the plane. In addition, radio-telephone communications between Moscow and America were established.

'Our meteorologists carried out a great deal of work in drawing up exact weather charts and in supplying the crew with all necessary information on the weather enroute,' said Chekalov. 'They made careful observations of the weather in the Central Polar Basin, and studied it for a considerable time along the entire route. They received much assistance in this matter by the drifting polar station near the North Pole.

The flight of Gromov, Yumashev and Danilin

undoubtedly provides valuable new meterial for the study of the great air route between the USSR and North America,' he concluded."

*Ed Note: V.P. Chkalov, G.F. Baidukov and A.V. Belyakov blazed a non-stop sky trail from Moscow over the North Pole to the United States and landed at Vancouver, Washington, on June 20th, last.

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THE RUSSIAN ANT-25 AIRPLANE

In the same issue of the "Moscow News," in which the previous article appeared, there is also an article by Aviation Engineer E.K. Stoman, describing how the ANT-25 was evolved into the present record-breaking airplane. Mr. Stoman says:

"Five years have passed since the ANT-25 plane made its first appearance at the testing station. I remember this machine as it first took to the air. Its flying qualities have been perfected under my supervision. I was charged with preparing the ANT-25 for long-distance flights. I am acquainted with every detail of the history of this splendid airplane, which has made Soviet aviation famous throughout the world. In the last five years, the machine has gone through a complex period of technical improvement and has been changed almost beyond recognition. Only the strong "bones" of the skeleton of the former ANT-25 have remained and nothing else.

One recalls with a smile the amount of trouble we had with the radiators, which were once placed in the wings of the plane. For a long time the engineers worried their heads off trying to improve the system of cooling the motor. In the end it was decided to dispense with wing radiators altogether, replacing them by a single honeycomb radiator installed in the tunnel next to the motor.

The conduct of the heavily laden machine in taking off was, as yet, a total enigma to us. Technical literature furnished very little material on this question. In foreign magazines we found many reports of unsuccessful attempts of overloaded machines to take off, but few reliable calculations as to how to take a machine into the air with safety.

After making a series of cautious experimental take-offs, we found the key to the solution of the problem. It turned out that the take-off of a heavily loaded machine requires exceptional foresight. The plane runs for a long time along the runway, slowly picks up speed and is difficult to control while on the ground. It wiggles and tries to jump off the runway - this means an inevitable crash. The most unexpected surprises may be in store. A crash may occur owing to the fact that the air pressure in one of the wheels of the landing gear is greater than in the other. If the bearings in one of the wheels are subject to greater friction than in the other, disaster may follow. Unevenly pumped air and oil shock-absorbers also present a danger. It was necessary to regulate the wheels of the landing gear and the back wheel in such a way that the machine, at least during the first 300 or 400 m., should drive along the runway with ideal accuracy.

The secret of the take-off of the ANT-25 has now been finally solved. Chkalov and Gromov made perfect starts.

Aviation technique has accumulated much theoretical experience which makes it possible quickly and surely to pick out a propeller with the highest coefficient of efficiency. But all the customary calculations proved to be unacceptable in the choice of a propeller for the ANT-25. Propellers suitable for taking off were found not to be sufficiently good in flight. On the contrary, propellers which worked efficiently in the air were inefficient in taking off. But long experiments with dozens of propellers of various types finally brought success.

In its 'youth,' the ANT-25 was a very capricious machine to control. Gromov, who tested it, had his hands full and more than once was in danger. A number of parts had to be replaced before the plane finally acquired stability and became comparatively easy to control.

The tanks still have room for more gasoline than is taken for long-distance flights. About two tons more could be poured into them, but this is made impossible by the insufficient power of the motor. If not for the motor, the distance of a flight by the present ANT-25 could be extended to perhaps 14,000 km. instead of the original 7,500 and the present 12,000 to 13,000 km.

The first serious test undergone by the ANT-25 was the 75-hour flight made by Gromov, Filin and Spirin over a closed circuit in 1934. This flight, which was actually a world record, finally convinced the designers of the correctness of their calculations. Nevertheless, the machine at that time still had a number of serious defects.

The cabin of the plane in which Chkalov, Baidukov and Belyakov flew to the United States and the cabin of Gromov's plane were completely reequipped this year. Air-heating apparatus was installed. Warm air enters the cabin, heating and ventilating it. Air-proof partitions were also installed to prevent cold air from entering the cabin from the wings.

For the first time in the history of Soviet aviation, an anti-freeze liquid was placed on the propeller of Chkalov's plane this year. The formation of an ice crust on the propeller is particularly dangerous. It destroys the balance of the blades and serves as the prime cause of motor vibrations. It is sufficient for one of the blades to become 20 grams heavier than the others in order to upset the work of the propeller and motor system and cause disaster.

According to information received from Chkalov, the anti-freeze substance on the propeller was extremely useful. But the amount of anti-freeze (a liquid which the apparatus sprays over the surface of the blades through thin tubes) was insufficient. Gromov's machine was equipped with 30 liters of anti-freeze. The apparatus uses up only three drops a second. According to the most moderate calculations, the quantity of anti-freeze should have its effect for over two consecutive hours.

A very complex problem was presented by the distribution of the numerous air navigation in-

struments and control gauges. In Gromov's plane 23 different instruments are mounted on a single board in front of the first pilot. The total number of instruments carried by the plane is 50.

It is doubtful whether any other single-motored plane has as many instruments. In the ANT-25, literally every known aviation instrument in the world has been assembled. With each new flight the machine receives some new equipment. Incidentally, I recall that in 1934, when Gromov made his flight over a closed circuit, there was only one instrument on the plane for fixing its course, namely, a magnetic compass. What strides our industry producing air navigation instruments have made since then!

Chkalov, Baidukov and Belyakov in their conclusions on the flight to America referred to the insufficient supply of oxygen, although it was double their supply on the Arctic flight last year. For this reason a vessel containing liquid oxygen was put on Gromov's plane in addition to balloons containing compressed oxygen. We believe such an apparatus began to be used in America. In European aviation practice, liquid oxygen is still little known. The vessel looks like a samovar, which is what we have named it. It is enough to open the tap in order that the liquid oxygen be converted into gas, and pass through a common pipe to the tubes and individual masks of the flyers. The quantity of oxygen carried by Gromov's plane was sufficient for 24 hours' flight in rarefied air.

The work of the radio set largely determines the success of a long flight over the Arctic. After last year's flight, Chkalov and his crew came to the conclusion that the radio apparatus was adversely affected by the electric disturbances caused by the system of fuel ignition in the motor cylinders. The work of the magneto caused a loud crackling in the receiver. In some cases reception was impossible. Now these interferences have been eliminated; the entire system of fuel ignition has been carefully screened off by a complete metal envelope. The quality of the radio contact - this has been confirmed by Chkalov's flight to the United States - has greatly improved.

Rubberized balloons, filled with air, in order to enable the airplane to float in event of a forced landing on water, were constructed. However, to the disappointment of engineer N. Lebedev, who displayed wonderful ingenuity in designing the balloons, after Chkalov's flight to the United States it appeared that there was no real need for them and they were removed from the Gromov plane. For the same reason Gromov's crew rejected the rubber life-boat.

Work on the ANT-25 has served as a splendid, I may say, incomparable school for the workers of the Central Aero-Hydrodynamic Institute, of the Institute of Aviation Motors and of the many factories which participated in preparations for the flight. Scores of designers, engineers, mechanics, physicists and chemists have enriched their knowledge. If it were necessary now to build an airplane for long-distance flights, there can be no doubt that it could be made to have a radius of 20,000 km. (12,427 miles). I am convinced that the new Soviet airplane for long-distance flights will be unquestionably a monoplane with a low wing of great length. The plane will carry two motors. In speed, it will considerably exceed the ANT-25, and it must be ideally suited for flights at an altitude of 6,000 to 8,000 meters. The cabin will, apparently, have to be sealed hermetically. The experience gained by our industry in the construction of cabins for stratostats will be of great use to aviation.

In such a plane Soviet flyers will be able to make a round-the-world flight with a single stop. I can foresee new victories for Soviet aviation in the struggle for long distance flights."

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THE ENGINE IN THE RUSSIAN ANT-25 AIRPLANE

Having shed some light on the airplane used by the Russian aviators in their flight from Moscow to the United States last July, it may be of interest to learn something regarding the motor with which this plane was powered - the AM-34.

The constructor of this motor, A.A. Mikulin, writes as follows in the issue of the "Moscow News," previously referred to:

"For many years, inventors have suggested numerous diverse and often quite eccentric designs for airplane motors which, it would seem, might prove to be a turning point in the technique of motor construction. Motors with all possible arrangements of the cylinders have been proposed: In the form of an X, a square, a triangle parallel to the shaft, and so on. However, not one of these ideas proved to be of any value. The main path of development in world motor construction is still the fan or star-shaped arrangement of the cylinders.

After watching the development of the foremost firms in the world, such as the Rolls-Royce in England, Curtiss-Wright in America, Hispano-Suiza in France, and after analyzing their methods of work, we find it evident that these basic types have been in the process of being constantly improved upon.

One of the new units added to the motors during their modernization in recent years is the impeller, which makes it possible to raise the power of the motors 50 per cent at an altitude of 3,000 to 4,000 m., and thus increase the speed of the plane at this height by about 15 per cent.

The motor AM-34 is entirely of Soviet make and incorporates the leading principles in world airplane motor technique. It was designed in 1930 by a group of engineers of the Airplane-Motor Research Institute.

A great amount of research work on the combustion of fuel in the cylinders and also the action of the various parts preceded the designing of the motor.

The design included very far-sighted construction ideas, which were developed over a period of six years and mastered at the plant for serial production. This resulted in a constant increase in the power, endurance and reliability of this motor.

The motor has demonstrated its qualities in

a number of record flights, including the non-stop flight of M.M. Gromov, Hero of the Soviet Union, over a closed circuit for 75 hours, the Arctic flight of V.P. Chkalov, G.F. Baidukov and A.V. Belyakov in 1936, and their recent flight from Moscow to North America, and the present flight of Gromov.

Besides its dependability, the AM-34 motor, because of the special arrangement of its parts, is very economical, in contrast to a number of modern motors of its class. Whereas an average fuel expenditure of 240 grams per hp. per hour is considered normal, the AM-34 consumes only 200-205 grams per hp. per hour. This small fuel expenditure is combined with very great power, which exceeds 1,000 hp.

One of the parts of the AM-34 which is an obligatory installation is a special device against ice-formation during flights in the Arctic.

Following a unified Government program, a number of research institutes are working upon the task of further improving the AM-34. Many institutes are engaged in a study of new sorts of high-quality fuels and selective lubricating oils."

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91ST OBSERVATION SQUADRON ACTIVITIES

According to the News Letter Correspondent from Fort Lewis, Wash., the 'Fog Busters" of the 91st still carry on in the great northwest. 'Thanks to early training in the Golden Gate Fog Balt at old Crissy Field, the weather conditions here were not so disconcerting to our personnel on transfer to this station," he says, and he then adds: "Our records for the fiscal year 1937 show a loss of 57½ scheduled flying days because of weather. Present-day airplanes and instruments allow for take-offs, landings, and flights in inclement weather, but 14,000-foot mountains, 200-foot pine trees, 100-foot ceilings, and 500-foot visibility do not result in 100% completed observation missions.

Despite the handicap of lots of bad weather, the organization flew a total of 5,384 hours during the year, an average of 365 hours per pilot. Cooperative missions accounted for 1,231 hours of the total.

The fiscal year's flying was consummated at Port Angeles, Washington, when the Squadron fired its tow-target aerial gunnery over the Straits of Juan de Fuca. There was a lot of fishing done during off duty hours but few fish brought into camp. Colonel F.E. Galloway, on his first venture after "Salar" the salmon, managed to bring a 33½ and a 28-pounder to gaff. If there were any larger fish caught, they were not displayed in camp, as no one dared outdo the C.O.'s record.

Flying during the month of July was in fulfillment of War Department Training Directive. Missions during August are in preparatory training for the 4th Army Maneuvers to be held at Fort Lewis August 17-31, at which time there will be a concentration of approximately 14,000 Regular Army, National Guard, and Organized Reserve troops.

Lieut. Colonel Charles B. Oldfield is in command of air activities at Fort Lewis, and Major Guy L. McNeil commands the 91st Observation Squadron.

Lieut. Colonel Floyd E. Galloway departed on August 4th for the Command and General Staff School at Fort Leavenworth. The entire command regrets his departure from this station.

A ground and aerial review for the recently arrived 3rd Division Commander, Brigadier General Alfred T. Smith, was held on August 6th.

The Air Corps personnel at this station extend an invitation to all airways transient flyers to drop in and visit us."

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AIR CORPS OFFICERS ON GEN. STAFF ELIGIBLE LIST

In the recently published list of Army officers who have been placed on the General Staff Corps eligible list, the names of the following Air Corps officers appear, viz:

Lieutenant Colonels	
Crom, William H.	McClelland, Harold M.
Howard, Clinton W.	Sorenson, Edgar P.
Kepner, William E.	

Majors	
Cannon, John K.	Hough, Romeyn B.
Clark, Harold L.	Kiel, Emil C.
Davidson, Joseph H.	Larson, Westside T.
Eaker, Ira C.	Tooher, Bernard J.
Fairchild, Muir S.	Upston, John E.
Gaffney, Dale V.	Vanaman, Arthur W.
George, Harold L.	Waller, Alfred E.
Gothlin, Oliver P., Jr.	Wolfe, Kenneth B.
Halverson, Harry A.	

Captains	
Caldwell, Charles H.	Old, William D.
Chidlaw, Benjamin W.	Oliver, Robert C.
Crawford, Alden R.	Quesada, Elwood R.
Cumberpatch, James T.	Shea, Augustine F.
Douglass, Robert W., Jr.	Snavely, Ralph A.
Dulligan, John H.	Thomas, Charles E., Jr.
Fair, Ford L.	Twining, Nathan F.
Ferguson, Homer W.	Weikert, John M.
Ferris, Carlisle I.	Whitten, Lyman P.
Mayhue, Don W.	Williams, Robert B.
Moon, Ernest S.	

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AIR RESERVE OFFICERS PLACED ON ACTIVE DUTY

The following-named second lieutenants of the Air Reserve have been placed on active duty at the Air Corps stations indicated for a period of three years, viz:

Frank Phipps Smith, Clarksdale, Miss., to Mitchel Field, N.Y., to August 24, 1940.

Joseph Adolph Brier, Riverside, Calif., to Moffett Field, Calif., to August 24, 1940.

Follett Bradley, Langley Field, Va., to Barksdale Field, La., to August 24, 1940.

John Holliday Catchings, Atlanta, Ga., to Barksdale Field, La., to September 1, 1940.

Le Grand Justin Mercure, South Rockwood, Mich., to Randolph Field, Texas, to September 9, 1940.

Joseph Samuel Morris, Waycross, Ga., to Randolph Field, Texas, to September 9, 1940.

Hugh O'Daniel, Louisville, Ky., to Randolph Field, Texas, to September 9, 1940.

The Effect of Flight on the Middle Ear
(Continued from Page 2)

open or blocked. Those who have a blocking of the tube should be examined for chronic infection of the ear, sinuses, nose and Pharynx, the mouth of the tube inspected for mechanical obstructions and the eustachian tube catheterized, if necessary. When any of these conditions are found and corrected, it is likely that the tube will become normal. Persons examined during periods of an acute infection of the upper respiratory tract should be re-examined after the infection has subsided before a final decision is made.

Probably the most useful prophylactic measure in all cases is proper instruction of the individual concerned. As long as the open condition of the eustachian tube is under voluntary control there is no reason why any person in command of his faculties need experience difficulty at any rate of ascent or descent possible in present commercial aircraft. A simple explanation of the functioning of the eustachian tube, followed by instructions as to how to ventilate the middle ear, when to ventilate it and how frequently this is necessary should suffice. Probably the simplest maneuver to actuate the normal eustachian tube is to swallow. It may also be accomplished by yawning, by singing, by shouting, by autoinflation and by contracting certain of the throat muscles. The last named defies description and can be learned only by practicing the suppression of a simulated yawn, at which time a roaring in the ears will indicate when the effort is successful.

Since the average person swallows involuntarily about every sixty to seventy-five seconds, it can be seen that a rate of climb or descent of 200 feet per minute will usually cause no discomfort, 500 feet per minute slight discomfort and 1,000 feet per minute moderate discomfort even though no effort is made to ventilate the middle ear artificially. Descents above 4,000 feet per minute may catch an individual unaware and create a vacuum of the middle ear which it is impossible to relieve by any method except a return to higher altitudes.

Chewing gum, eating, drinking or inhaling oxygen reduces swallowing to intervals of from one to thirty seconds. Sleeping and comatose individuals swallow at increased intervals and present a serious problem.

The allowable rate of ascent and descent of commercial airplanes is set by the Department of Commerce at 300 feet per minute, and some such companies limit themselves to 200 feet per minute, although unusual conditions such as weather may require that both of these rates be exceeded to insure the safety of the flight. Those who are suffering from either temporary or permanent blocking of the eustachian tube should be enjoined from flying except under controlled conditions of gradual changes of altitude through a maximum range not to exceed 2,000 feet. Those with an acute infection of the upper respiratory tract who insist on aerial flights should be prepared by gargling hot salt water or by having an oil spray directed well back into the nasopharynx, followed by the instillation or inhalation of atropine, ephedrine or benzedrine compounds.

SUMMARY

A new clinical entity is presented which consists of a traumatic inflammation of the middle ear caused by a pressure difference between the air in the tympanic cavity and that of the surrounding atmosphere, commonly occurring during changes of altitude in airplane flights and characterized by inflammation, discomfort, pain, tinnitus and deafness."

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RANDOM NOTES

The 33rd Pursuit Squadron, Langley Field, Va., is sending five pilots along with the 8th Pursuit Group to the Cleveland Air Races, and each morning finds 18 PB-2A's busy with aerial work. The Scribe of the 33rd says: "We hope to do our part in making the Air Show a big success and look forward to an enjoyable trip."

Announcing that the matrimonial flurry which recently struck the 37th Attack Squadron, Langley Field, claimed another victim lately when Lieut. Earl Willoughby returned from a two weeks' leave in California with a Los Angeles bride, the News Letter Correspondent adds that "This will, no doubt, cut Lieut. Willoughby's cross-country time down to a minimum this fiscal year, since his cross-country now will have to be approved through two different headquarters."

"It has been reported," says the News Letter Correspondent of the Hawaiian Air Depot, "that pilots at Luke and Wheeler Fields are considering the formation of an association of 'goon-dogglers.' The members will be those privileged to take the goons, C-33's to you, from here to there and return. Now if we can get a 'Jeep' and a couple of Windmill Salesmen we will be on a par with any organizatio in the United States."

Majors (temp.) Neal Creighton and Alonzo M. Drake, Air Corps, were promote to the permanent rank of Major, to date from August 3rd and August 7, 1937, respectively.

OBITUARIES

Air Corps personnel were greatly shocked at the untimely and tragic death of Colonel Wm. C. McChord, Air Corps, and his passenger, Staff Sergeant Michael J. O'Connell, as the result of an airplane accident at Maidens, Va., 29 miles west of Richmond, on the morning of August 18th, last. Colonel McChord, piloting an A-17 Attack plane, was en route from Bolling Field to Randolph Field, Texas, and was apparently trying to make a forced landing when the accident occurred.

To the Air Corps in general, Colonel McChord's death constitutes a distinct loss, and those who knew him well realized fully his ability and professional attainment and admired the initiative, independent thought and frank expression of opinion which characterized his service and which led his brother officers to rely so much upon his experience and helpful advice.

A native of Lebanon, Ky., where he was born December 29, 1881, Colonel McChord had been affiliated with aviation since the World War. Previous to that time he served with the Cavalry, in which branch he was commissioned a second lieutenant on June 14, 1907, following his graduation from the U.S. Military Academy. He received his flying training at Rockwell Field, Calif., and was rated a Junior Military Aviator, May 31, 1918. After completing a course in Bombardment Aviation at Ellington Field, Houston, Texas, and commanding for brief periods of time Park Field, Tenn., and Gerstner Field, La., he was transferred in March, 1919, to the Office of the Director of Air Service, Washington, D.C., where he served in various capacities, such as duty in the Finance Section of the Supply Group, as a member of the Air Service Claims Board, as Assistant to the Chief of the Materials Disposal and and Salvage Division of the Supply Group, and as Assistant to the Chief of the Property Division of the Supply Group.

For a period of two years, from July, 1920, Colonel McChord served as Air Officer of the Central Department (later the 6th Corps Area). He then completed the course of instruction at the Air Corps Tactical School and the Command and General Staff School. He then commanded Chanute Field, Ill., and was Commandant of the Air Corps Technical School at that field until early in 1928, when he was transferred to the Advanced Flying School, Kelly Field, Texas, where he completed the Special Observers' course, receiving the rating of "Airplane Observer" as of June 25, 1928.

Following his graduation from the Army War College, Washington, D.C., Colonel McChord served as Instructor at the Command and General Staff School for four years. He was then transferred to the Panama Canal Department for duty as Commanding Officer of the 19th Composite Wing. In October, 1935, upon the completion of his foreign service tour, he was assigned to duty in the Plans Division, Office of the Chief of the Air Corps, Washington, D.C. Later, he was assigned as Chief of the Training and Operations Division.

Funeral services for the deceased Air Corps officer were held on the afternoon of August 20th at the Chapel at Fort Myer, Va.

Staff Sergeant Michael J. O'Connell, Air Corps, a native of New York City, was born on March 2, 1900. He enlisted in the Army on August 16, 1919, and served with the 15th Cavalry to July 27, 1921, and with the 3rd Cavalry to March 13, 1925. Reenlisting a week later, his Army service since that time was with the Air Corps. He served with the 1st Observation Squadron to November 5, 1929, when he purchased his discharge. He enlisted again on July 9, 1930, and was stationed at Bolling Field, D.C., until the date of his death. He was appointed Corporal in December, 1930; Sergeant in July, 1931, and Staff Sergeant in June, 1937. In April, 1927, he graduated from the Engine Mechanics Course at the Air Corps Technical School at Chanute Field, Ill.

On August 24th, 2nd Lieut. Robert C. Wood, of Haynesville, La., a member of the Air Corps Reserve, and Flying Cadet Frank Fisch, a student at Randolph Field, and who hailed from Mansfield, Ohio, were instantly killed when the training ship in which they were flying crashed in flames two miles north of Schertz, Texas.

Lieut. Wood was born November 3, 1911, at Pine Bluff, Ark. He graduated in 1931 from the Monticello, Ark. A. & M. College; attended Ouachita College, Arkadelphia, Ark., for half a year, and graduated from the Louisiana College, Pineville, La., in 1935, with an A.B. degree. For a period of two years he was a member of the 156th Infantry, Louisiana National Guard.

Appointed a Flying Cadet in the Air Corps, he completed the course at the Primary Flying School, Randolph Field, Texas, October 15, 1935, and the advanced course at Kelly Field, Texas, on February 15, 1936, when he was rated an "Airplane Pilot" and assigned under his Cadet status to duty with the 77th Pursuit Squadron at Barksdale Field, La. On March 1, 1937, he was appointed a second lieutenant in the Air Reserve, and he remained at Barksdale Field until June 18th, last, when he was transferred to Randolph Field, Texas, for duty as Flying Instructor.

Flying Cadet Frank Fisch was born at Chicago, Ill., August 6, 1914. He attended Newman School and Mansfield, O. High School (1920-1932) and the Ohio State University, Columbus, Ohio, for four years. Receiving an appointment as a Flying Cadet in the Air Corps, he began his training at the Primary Flying School, Randolph Field, Texas, in March, 1937.

Cadet Fisch was a member of the varsity football squad, Ohio State University, for three years.

The sincere sympathy of the Air Corps is extended to the bereaved families of these men who lost their lives in the service of their country.

V

BRANCH AIR CORPS TECHNICAL SCHOOL AT DENVER

The Army Housing Bill, which authorizes among other things the establishment at Denver, Colorado, (at the Phipps Memorial Sanitarium) of a branch of the Air Corps Technical School, Chanute Field, Rantoul, Ill., was signed by the President on August 27th. A War Department announcement states that it is expected the necessary funds for putting this authorization into effect will be contained in an early appropriation act.

Detailed plans are now being made to provide for the inauguration of courses in armament and photography at this school. While courses cannot begin until funds are appropriated, plans can now take definite shape for the move so that when funds become available prompt action may be taken to prepare students of the branch school at Denver to fill the vacancies now existing for skilled mechanics in the Air Corps tactical units.

In the near future it is expected that the War Department will move a few officers and soldiers from other stations to this new school at Denver to begin the rehabilitation of the existing buildings.

As soon as adequate facilities have been constructed at the new location, the Departments of Photography and Armament, including students and instructors now at the Air Corps Technical School at Chanute Field, will be transferred to Denver, and a corresponding increase made in the number of instructors and the number of students in the other courses remaining at Chanute Field, so that that field will remain at its maximum operating capacity.

The establishment of the branch of the Air Corps Technical School at Denver will not decrease the size of the Technical School at Chanute Field, Rantoul, Ill. The increase in the number of students in the departments which remain at Chanute Field will enlarge the present school despite establishment of the branch. The increasing demand for trained specialists in the Army Air Corps makes necessary the establishment of the branch school. World War military planes could be adequately maintained by a small crew of two or three technicians. Such planes were powered generally with but one engine, carried not more than two machine guns and only five or six instruments. Some of the largest modern Army planes call for a greatly increased crew of skilled technicians, if such planes are to operate effectively.

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MASTER SGT. MAYLON APPOINTED WARRANT OFFICER

Master Sergeant Charles Maylon, probably one of Bolling Field's oldest inhabitants, in point of service at that field, received an appointment as Warrant Officer, U.S. Army, effective September 1, 1937. Since January, 1919, his service at Bolling Field has been continuous, save for a tour of duty in the Hawaiian Department.

Sergeant Maylon was born at Gordonsville, Va., April 25, 1891. He enlisted in the regular army on September 24, 1912, serving with the 29th Infantry for three years and being discharged with character 'Excellent." As a matter of fact, all of his subsequent discharges bore that notation. He saw service in Panama from March, 1914, to September, 1915. Reenlisting in June, 1916, he was assigned to the General Service, Infantry. In September, 1918, he was assigned to the 864th Aero Squadron at the Air Service Mechanics School at St. Paul, Minn., and was appointed to the grade of Sergeant. Later, on November 25, 1918, he was appointed Sergeant, 1st Class. He received his appointment as Staff Sergeant on July 1, 1920, and as Master Sergeant on September 23, 1920.

Sergeant Maylon was transferred to Bolling Field, D.C., on January 14, 1919, where he served successively with the 312th, 99th, 10th, and again with the 99th, squadrons; the 18th Headquarters Squadron; the Air Corps Detachment the GHQ Air Force, the Station Complement, and his present organization, the 14th Air Base Squadron. During his service in the Hawaiian Department in 1933 and 1934, he was on duty with the 5th Composite Group at Luke Field and later with the 18th Composite Wing Headquarters at Fort Shafter.

Sergeant Maylon holds a commission as a 2nd Lieutenant in the Quartermaster Corps Reserve.

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The following noncommissioned officers of the Air Corps are slated for retirement on August 31, 1937:

Master Sergeant Monroe Reynolds, Randolph Field, Texas.

Technical Sergeant Henry G. Hayes, Fort Lewis, Washington.

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CHANGES OF STATION OF AIR CORPS OFFICERS

To Brooks Field, Texas: Major William C. Morris from Randolph Field.

To Maxwell Field, Ala.: Major Arthur J. Melanson from Langley Field.

To Fort Lewis, Wash.: Major Charles M. Savage from Rockwell Air Depot, Calif.

To Fort Bragg, N.C.: Major Neal Creighton from Scott Field, Ill.

To Panama Canal Department: Captain Henry G. Woodward from Wright Field, Ohio.

Major Charles A. Horn has been relieved from further assignment and duty with the GHQ Air Force, Mitchel Field, N.Y., and assigned to duty as Commanding Officer of the 97th Observation Squadron at that field.

Effective August 19, 1937, the following Air Corps officers were promoted to the temporary rank indicated:

Lieut. Colonel Fred H. Coleman to Colonel.
Major Orlo H. Quinn to Lieut. Colonel.
Captain George W. Goddard to Major.

2nd Lieuts. Charles Garvis Holliman, Hapeville Ga., and Victor Frank Pixey, Hammond, Ind., both members of the Air Reserve, were placed on extended active duty at Randolph Field, Texas, to September 9, 1940, as were also 2nd Lieuts. LeGrand Justin Mercure, South Rockwood, Mich.; Joseph Samuel Morris, Waycross, Ga., and Hugh O'Daniel, Louisville, Ky.

V-7462, A.C.

Langley Field, Va., August 14th.

49th Bombardment Squadron: The Squadron regrets the loss of 2nd Lieut. K.H. Gibson, Air Reserve, who was recently transferred to March Field, Calif. Lieut. Gibson was a member of this Squadron for approximately 16 months, during which time he proved to be a valuable man. We wish him much success at his new station.

20th Bombardment Squadron: This Squadron regrets the loss of 1st Lieut. Thetus C. Odom, who departed on August 6th for Chanute Field, Ill.

21st Reconnaissance Squadron: Captain Ivan M. Palmer, Air Corps, reported to the Squadron on August 5th and immediately took command of the Squadron during the temporary absence of Major Downey.

Hq. and Hq. Squadron, 8th Pursuit Group: Well, it seems as though maneuvers for the Eighth Pursuit Group have ended for a while. The Group returned from Virginia Beach on August 5th. This was the third time maneuvers were held there this year. With the exception of several rainy days during the last period, which did not interfere with operations very much, the Group was fortunate in having fine weather during each period. There were no casualties, and a good time was had by all.

First Lieut. Joseph A. Bulger is taking a well earned leave of absence for one month, and the organization wishes him a very enjoyable vacation.

37th Attack Squadron: Major Guy H. Moates, a 14-day trainee, Medical Reserve Corps, and Lieut. Wm. R. Enyart, Air Reserve, also a 14-day trainee, flying in an A-17 airplane, crashed in taking off from Edgewood Arsenal, Md., on Aug. 1st. Major Moates, the passenger, was killed instantly, while Lieut. Enyart, the pilot, who was attached to the 37th, was severely injured. Lieut. Enyart was engaged in a navigation training mission.

33rd Pursuit Squadron: With Captain Al Springer as the new Squadron Commander, we all look forward to a good year's work. He relieves Major R.L. Maughan, who will command the 37th Attack Squadron. Another new member of the command is 1st Lieut. W.H. Wise, who reports in from Chanute Field.

35th Pursuit Squadron: Encamped at Virginia Beach from July 26th to August 5th with the 8th Pursuit Group, the 35th participated in aerial and ground gunnery. Besides this, the news reel cameramen were present to "shoot" the Group performing various phases of gunnery and formation flying.

Your inquiring reporter while loitering on the beach noted with satisfaction the efficient manner in which the Don Juans of the Squadron discharged their obligations to their public. Lieut. Norris Perry, "Take Rest!" You earned it.

Lieuts. Harry Martin and Bela Harcos were away on ten days' leave. Lieut. Charles B. Harvin left August 12th to wrassle with books'n things at Chanute Field.

Second Lieut. William B. Sprague reported to this Squadron on July 26th while it was engaged in gunnery maneuvers at Virginia Beach National Guard Airport. He graduated from the Air Corps Training Center last June.

36th Pursuit Squadron: Coming as a bit of surprise, we moved into the field at Virginia Beach again on July 26th, and were encamped there until August 5th. It rained so steadily that we expected to come back web-footed, and were constantly on the alert for signs of scales.

In spite of the elements, however, we accomplished more flying than we have managed in field maneuvers for many a moon, and turned in some very effective firing on both ground and aerial targets.

On aerial targets we practice long range firing. It is truly long range. Distances being hard to determine in the air, we simplify it by specifying that if you can see the target when you fire you're too close, and that's cheating. The targets come back torn to ribbons.

San Antonio Air Depot, Duncan Field, Texas.

The Depot enjoyed a visit from Brigadier General A.W. Robins, Chief of the Air Corps Materiel Division; Colonel Frank D. Lackland, Chief of the Field Service Section, Materiel Division; Major Edward M. Powers and Captain Thomas H. Chapman, also of the Materiel Division, who arrived by air August 11th for an inspection of the Depot, and departed on the 13th.

Among Air Corps officers formerly on duty at this Depot and recently visiting here while on leaves of absence and greeting old friends were Major Charles Branshaw, Commanding Officer of the Hawaiian Air Depot, and Major Myron R.Wood, a recent graduate of the Army Industrial College.

Lieut. W.P. Sloan, on duty with the Air Corps Technical School, Chanute Field, Ill., and Mr. Frank S. Martin, Senior Instructor, Machinist, with that School, arrived at this Depot on August 19th on an air tour of several Air Corps stations, conferring with engineering personnel on training requirements for students in various aircraft mechanical courses at the School.

Among recent visitors at the Depot passing through this vicinity by air were Captain C.S. Thorpe, of the Aberdeen Proving Ground, Md., August 14th; Lieut. Edwin S. Perrin and Mr. Phillip, from the Materiel Division, Wright Field, in an O-25C plane, August 18-20, conferring with engineering personnel on maintenance and repair of D-3 fuel units; and Lieut. R.O.S. Akre, of Mitchel Field, N.Y., August 18th, for minor repairs to his B-10B plane.

On a recent interdepot transport service trip a Fairfield Air Depot C-33 Transport, with Tech. Sgt. D.M. Swisher, pilot, and 2nd Lieut. James Treweek, co-pilot, enroute to this Depot, was forced down with engine trouble near Big Lake, Texas. A new engine was sent to the plane from this Depot, by truck, on August 7th, with C.R. Gast and L.J. Milhan, mechanics, and T. Asher and J.H. Ellis as chauffeurs, and the plane continued to this Depot. The pilots of the plane showed considerable skill in landing and taking off in a small plot, which was the only avail-

AIR CORPS NEWS LETTER

NEW MULTI-SEATER FIGHTER
BELL XFM-1

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

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VOL. XX AIR CORPS NEWS LETTER NO. 18.
Information Division, Air Corps — September 15, 1937 — 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 NATIONAL AIR RACES AT CLEVELAND

By an Observer from the Office, Chief of the Air Corps

Those of us who saw the National Air Races this year feel that the Army Air Corps may well feel proud of the performance of its participating units.

Many spectators said that the greatest spontaneous burst of enthusiasm and cheering from the crouds which occurred at any time during the Races was manifested when the formation of B-17's came down out of the low ceiling and passed in review before the grandstand. It was a miserable afternoon, with very low ceiling. Several commercial and military flyers, including your correspondent, landed that afternoon at Alliance, Ohio, and at other points short of the Races. To ride out the squall, the poor visibility, which was not more than a quarter of a mile at some time, did not deter the B-17's. It seems to be the general impression that that parade was one of the striking demonstrations of the whole show.

The squadrons of PB-2A's from Langley Field, led by Captain Ned Schramm, flew an excellent and precise series of maneuvers, demonstrating the remarkable maneuverability of squadrons employing the "string" formation. It also made an excellent show from the spectator point of view.

The acrobatic trio from Maxwell Field, it was generally conceded, proved worthy successors to the "Three Men on the Flying Trapeze," and they staged some original and entertaining maneuvers, all their own.

The Navy and Marine Corps flyers did excellent work. The Navy Squadron demonstrated a very high quality of formation flying, and the Marines did their usual series of acrobatic formations, concluding with spectacular bomb dropping.

An untoward and unfortunate circumstance occurred which offended the participating pilots, as well it might. The Cleveland NEWS published on Friday afternoon, September 3rd, a gossipy column by one of its reporters, which was not complimentary. As soon as Mr. Cliff Henderson saw this story, he called the NEWS, and it was killed in the later editions that same afternoon. Lieut. Colonel A.H. Gilkeson, Army Air Corps representative at the Races, immediately took steps to bring the matter to the attention of the National Air Races authorities, and the Chief and Assistant Chief of the Air Corps, who were in attendance. Prompt action was taken to investigate the whole matter, with the following result:

a. The Cleveland NEWS published the following editorial, which demonstrates that the original article did not represent the editorial and managerial opinion of the paper:

"OUR CHEERS FOR U.S. FLYERS

Of all the glories of the national air races, we think the watchers this year, as in other years, were probably most thrilled by the formation flying by the army, the navy and the marine corps. Without them, the races would not be the spectacular American show they have become. These flyers are in a sense all 'our own.' They are the guardians and the representatives of the greatest land in the world, as they dash, loop, slide, and roll in their marvelous unity formation by threes.

It is a grand thing for the races to bring forth the army's, navy's and marines' best each year, and it is a grand thing for the military services to put such elegant squadrons on exhibit before the American people through the air races. There is a patriotic dignity in the military performances which no civilian flyers and no foreign visitors can ever achieve.

And for the flyers in these exhibitions to come so close as they do to risking life and limb to demonstrate the dynamic grace of aviation, to dive at such slight heights, to roll and loop low enough for the crowd to see so well, speaks volumes for the men themselves. Their spirits must be indomitable and their loyalty to their services immense, or they could not be so well trained, so expert and so daring.

That the services appreciate the growing glories of the national air races was attested by the presence here of Maj. Gen. Oscar Westover, chief of the army air corps; Brig. Gen. H.H. Arnold, assistant chief; Maj. Gen. F.M.Andrews, chief of the GHQ air force; Brig. Gen. G.C. Brant, commanding the second wing of the GHQ air force; Rear Admiral A.B. Cook, chief of the bureau of naval aeronautics; Colonel Ross Rowell, chief of the marines' aviation force; Colonel Roy

V-7428, A.C.

Geiger, commanding officer of the marine air detachment at Quantico; Colonel A.H. Gilkeson, in charge of the Army flyers, and Lieut. Com. I.S. Coombs, in charge of the navy flyers; and Lieut. Col. J.M. Johnson, assistant secretary of commerce for aeronautics. These officers not only are to be praised for the excellence of their flyers, but are also to be assured that Cleveland loves and honors the show they put on under the sponsorship of the American flag."

b. The President of the National Air Races Association, Mr. Greve, wrote a letter to the Chief of the Air Corps which made it very clear that the expressions in the original article did not emanate from and did not represent the sentiments of the National Air Races authorities. It was a very fine apology for the whole incident.

I.C.E.

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WEST POINT CADETS VISIT LANGLEY FIELD

On August 20th, the 1938 Class of the U.S. Military Academy made their annual visit to the Second Bombardment Group at Langley Field, Va. Lieut. Colonel Robert Olds, Group Commander, gave the Cadets a short talk regarding the performance, mission and the future of the four-engine airplanes in the defense of the nation.

The Cadets displayed keen interest in the "Flying Fortress", inspecting the B-17's thoroughly and witnessing the loading of 100, 300 and 600-lb. demolition bombs. Later in the morning, the Group's guests from West Point, along with many other visitors, witnessed from the shores of Messick a precise bombing demonstration on a typical target, located on Plum Tree Island.

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RESERVE OFFICERS ORDERED TO RANDOLPH

The following-named second lieutenants of the Air Reserve have been placed on extended active duty at Randolph Field, Texas: Stuart H. Murphy, of Kenosha, Wis.; Roger Boyer Whittaker, Willoughby, Ohio; Elmer LeRoy Parsel, Plymouth, Ohio; John H. Bondurant, Hapeville, Ga.; Bernard M. Lloyd, Fort Wayne, Ind.; Cecil S. McFarland, Enid, Okla.; William S. Rust, Alameda, Calif.; Mem Crear Weit, Tallahassee, Fla.; Charles Elmo Hart, Cincinnati, Ohio, and Paul Flint Davis, Griffin, Ga., to September 9, 1940; Clayton Alfred Beran, San Diego, Calif., to October 4, 1940, and Joseph S. Wakefield, of San Diego, Calif., to September 10, 1940.

Second Lieut. Percival M. Baron, of Martinton, Ill., was placed on active duty at Fort Bragg, N.C., to September 6, 1940.

NEW SERVICE CLUB AT CHANUTE FIELD

Prospective enlisted students for the Air Corps Technical School and former enlisted men at Chanute Field will be very pleased to hear that a large commodious and well-equipped Service Club has just been completed.

Everyone has realized for a long time that such a club was sorely needed. As Mark Twain said about the weather, "Every one talks about it, no one does anything.

Lieut. Colonel Junius W. Jones, Air Corps, the Commanding Officer, was enthusiastic concerning the establishment of a place where men below the first five grades could congregate for entertainments and social occasions. Funds were secured for renovating a building on the post and for the purchase of the necessary furniture, equipment, and furnishings.

The Club is tastefully decorated in a color scheme of blue and gold. Chrome steel furniture, a piano, radio, rugs, table, curtains, and indirect lighting floor lamps all combine to form a "clubby" and attractive interior. The Club is well equipped with reading material, writing desks and stationery.

Plans have already been made for holding parties, dances, and dinners after the formal opening.

A feature of the Club will be the employment of a hostess to have charge of planning of social affairs, party nights and dinners.

In the near future the lawns surrounding the Club will be landscaped with floral gardens, shrubbery and other attractive plants. Chairs and tables will be placed out on the lawns to accommodate summer parties.

Needless to say, the enlisted personnel are most enthusiastic over the new Club. Nightly the "bucks" and "nearbucks" (seventh and sixth grades, respectively, according to the best accepted War Department nomenclature) rendezvous at the Club for the purpose of discussing the affairs of state, new lady friends, technical subjects, or to just simply "chew the rag."

A very unusual feature, and one which it is believed will be most enjoyable, provides for serving of late breakfast, nine to ten o'clock, on Sunday mornings. Following the breakfast, the Chaplain will hold an informal discussion hour.

To Chaplain Wallace I. Wolverton must go the greatest credit for his initiative, hard work and planning in order to make this well-appointed Club possible. Although a great deal of credit is due local civic organizations and to other personnel for their assistance and cooperation, the burden of "carrying on" has rested largely upon the shoulders of Chanute Field's energetic and capable Chaplain.

FLYING TRAINING OF WEST POINTERS AT MITCHEL FIELD

The following interesting account of the reaction of West Point Cadet Air indoctrination at Mitchel Field during the month of July, this year, was received from Cadet Edward F. Gillivan:

"This, gentlemen, is a wind tunnel; this, is an air foil. And this, gentlemen, is the picture of an airplane. Now when you get to Mitchel Field this summer, you will have a chance to see the theories of aerodynamics in actual practice."

Throughout the course in aerodynamics, which we studied last Spring, we had thought of Mitchel Field. And while we studied air foils and plotted lift and drag coefficients and wrestled lusingly with Reynolds' Number, we consoled ourselves with the thought that when we once started flying the theory of flight didn't matter much.

For the past two years the "Mitchel Field Trip" has come to be one of the high lights of the First Class summer. For two years, members of the Class of 1938 had looked forward to flying, considering it, along with the Georgia trip, as compensation for not going on furlough. Last winter and spring, when construction was begun on an airport at Newburg, not far from West Point, rumors began to go round that this summer there would be no trip to Mitchel, and that the First Class would get its instruction at Newburg Airport. But when summer arrived and the schedule of training was published, the words "Mitchel Field," like "Abou ben Adhem," led all the rest, and the First Class breathed a sigh of satisfaction and relief.

For the purposes of summer training, we were divided into six drill groups. For the trip to Mitchel Field, these were consolidated into three groups of approximately one hundred cadets each. The first group left the Academy on June 12th, Graduation Day, and on the next two successive Saturdays the second and third sections, respectively, made the trip.

The trip was made by motor convoy, baggage also being carried by truck. Each cadet was allowed one laundry bag, and a trunk locker shared with another cadet to carry his belongings. In addition to this baggage, most of us had either tennis racquets or golf clubs. The convoy left the Academy early on Saturday morning. We crossed the Bear Mountain Bridge and proceeded on the East side of the Hudson to New Rochelle. Here the convoy was ferried across to Long Island, where a motorcycle escort was waiting for us. In the wake of our escort, we made good time out to Mitchel Field, arriving there about eleven o'clock to find the group which had come the week before waiting for us, full of enthusiasm over their stay and regretful over having to leave. The convoy which brought us took them back to Summer Camp, and left us to begin our acquaintance with the Air Corps.

We were quartered for the trip in one of the barracks. Each provisional company, with its cadet officers, occupied a squad room, and the entire group ate in the barracks' mess. Immediately upon our arrival we unpacked, gathered together our assorted belongings and put our squad rooms and lockers in order. Flying equipment for the trip was drawn, and we stood inspection wearing our coveralls, helmets and ear-phones.

After dinner, we assembled in the recreation room of the barracks to hear a talk on the proposed schedule of instruction, and the administrative details and regulations which would be in force during the trip. To our great satisfaction we found out that we would be allowed to do voluntary flying in addition to our scheduled hours. We learned the difference between local and cross-country flights and were considerably surprised at the limits which were laid down. "Limits" to a cadet is a pretty well defined term, and on trips it usually includes an area which can easily be covered during free hours. On the Field Artillery hike, which we had made a week previous, "limits" had been set as a radius of one mile from camp. And now the Air Corps was giving us about a 200-hundred mile circle in which we could fly,- Boston to the North, Washington to the South and Middletown to the West, We were to be allowed to take cross-country flights anywhere within the area bounded by these cities. The mobility of the Air Corps was made most evident.

Our first flights were scheduled for Monday morning. But all day Sunday the cadets haunted the line and the hangars hoping to get a ride. And from then on there was hardly any time between dinner and taps when there were not at least a dozen cadets standing around the Operations Building waiting for someone in flying clothes to appear.

Our ground instruction began on Sunday morning. At the Post Theatre we were welcomed to Mitchel Field by Colonel Walter H. Frank, the Commanding Officer. Following his talk, we were given instruction on the parachutes, safety precautions, etc., with special emphasis upon their adjustment and use.

Those of us who were in the second trip section were greatly disappointed on Monday morning. The weather which had been good while we were at West Point now played us double. Mist and rain "like the gentle dew from heaven" were all over the field. But, like the "quality of mercy," it was not strained. Rather, it resembled in consistency a

rich grade of thick pea soup. Men who lived on Long Island gloomily predicted that the weather would last a week. But, with flying out of the question, we went ahead with ground school, completing both Monday's and Tuesday's work, to give us time to make up for lost flying hours when the weather lifted. In spite of the weather, a few cadets spent most of their time on the line, watching the red flag and looking for a lift in the sky.

Tuesday was clear and we began our flying. The course of instruction included both flying in various types of ships and ground instruction. In the regular schedule, the flying was done in the morning and the ground instruction was given in the afternoon.

The flying instruction consisted of a familiarization flight, a bombing mission, an observation flight and an hour with the PT-13's.

Our bombing mission was off Fishers Island. The flight took off early in the morning, and we dropped our bombs on a target towed by the Coast Guard. The cadets were in the rear of the ships, and we were able to observe the bombing through the machine gun trap. At least, we observed until we suddenly realized that we were hanging out over eight thousand feet of nothing, with our quick attachable parachutes hanging in their racks about six feet away.

Without a doubt, the greatest thrills came in the PT's. Here the Air Corps made and lost converts, and each man came down to be greeted with the ominous "Did you?" Some did and some didn't, but there were no flights which had not some aftermath of the bucket and sponge.

The ground instruction was less exciting but equally interesting. It included a tour of the field, with explanations of the work which was being carried on in the different departments. The cadets found of greatest interest the photographic section and the parachute packing building. Included also in the ground instruction were lectures on the theory and practice of bombing, navigation, photography and meteorology.

During their free time, the cadets took full advantage of the recreational and social opportunities which Mitchel Field and Long Island offered. The swimming pool and the tennis courts were seldom vacant, and every day some of the cadets could be found at the Cherry Valley Country Club or at other neighboring golf courses. During one afternoon and evening, a picnic was held at Jones Beach for cadets and their guests, and on another evening there was dancing and supper at the Officers' Club.

Such was the Mitchel Field trip of 1937. Those of us who have piping Air Corps and Randolph came back to West Point more enthusiastic than ever. Those of us who still think in terms of batteries or platoons certainly had no regrets over the trip. We had gained a lot, had new experiences and a really good time. And we most certainly had not lost anything - except maybe a breakfast or so.

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BUSY BOMBERS AT NICHOLS FIELD

A new training year is well under way in the Philippines. Drawing fresh personnel from the July transport, the 28th Bombardment Squadron settled down after "Boat Week" and put "shoulder to the wheel."

Two classes every morning, with flying wedged in between rainy season's showers leaves little time "a-waste-ing.'

"'Skippy' Harbold," says the News Letter Correspondent, "gives us Navigation every morning from 7:30 to 8:30, and 'Paddy' Ryan teaches Bomb Sights from 11:00 to 11:30 a.m. Five B-10B's with combat crews to train gives us something to work for. Things look businesslike as we square away for aerial gunnery within the fortnight. The present set-up includes seven officers assigned, all First Lieutenants - E.H. (Wump) Porter, commanding; N.B. Harbold, Adjutant; T.S. (Tommy) Power, Engineering Officer; H. Harris, Mess Officer; and new arrivals - J.A. Miller (on May transport), Armament and Supply Officer; D.N. Motherwell, Operations Officer; W.W. Bowman, Communications Officer. The attached pilots include Lieut. Colonel Ralph Royce, new Department Air Officer; Lieut. Colonel Thomas S. Voss, Group and Post Commander, and 1st Lieuts. F.A. Pillet, J.P. Ryan and H.L. Mace. Major D.S. Seaton is attached as our only observer."

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MAXWELL FIELD OFFICERS AT AIR RACES

Captain Pratt and Lieut. Aring, Air Corps, of Maxwell Field, Ala., were in attendance at the Air Races at Cleveland, Ohio, from August 31st. Captain Pratt, the Technical Photographic Officer at Maxwell Field, was on duty at the Air Races in connection with photographic work. Lieut. Aring is a member of the "Sky Larks" from Maxwell Field. This team staged daily demonstrations in acrobatics at the Air Races.

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The 21st Reconnaissance Squadron of Langley Field, Va., participated in the West Coast Exercise during August by performing frequent reconnaissance and surveillance missions with the YOA-5 from a base at Hamilton Field. The "Duck," now known in the Squadron as the "Queen Mary," was piloted by Major Hugh C. Downey, Squadron Commander, and Captain James M. Fitzmaurice.

V-7482, A.C.

WHAT THE FUTURE HOLDS IN STORE FOR THE FLYING CADET

LIEUT. Beirne Lay, Jr., Air Reserve, a graduate of the Air Corps Training Center, Class of July, 1933, and now on extended active duty at Langley Field, Va., gives a straight to the shoulder talk to the students of the Air Corps Training Center in an editorial in the August issue of THE TEE, published by the Flying Cadet Battalion of Randolph Field.

Lieut. Lay is the author of the book "I wanted Wings," in which, using the language of flying and flying men, he has drawn word pictures of his sensations and impressions during his flying career exactly as he felt them. Lieut. Lay states:

"If I remember rightly, the thought uppermost in a Flying Cadet's mind aside from 'can I get through the course?' is 'suppose I do get out of Kelly with embroidery over the left pocket. What have I got? Is there any future in a few years of active duty with a tactical unit followed by a Steve Brodie into the cold outside world? Have I made a ring-tailed monkey of myself by tossing away some of my best years learning to be a birdy and go by-by in the clouds when I might have spent the time moving in on the ground floor of the job at which I'll spend the rest of my life? What are my chances of a regular commission? Do I want one if I can get it -- is the Army Air Corps a good life? Have I joined the tail end of a bread line with a fatal crack-up at the other end, sooner or later?'

Those are a lot of questions. Nobody can answer them for everybody. But as an alumnus with a bit of active duty under his belt and some swell living in a cockpit behind him, I'll fire a couple of short bursts at the target. In the first place, anyone who goes down to Randolph and gets through Kelly is mildly insane. For that reason, if for no other, he will enjoy life more than the other fellow from there on out, come what will. Five years' active duty will give him money in the bank and more than the minimum hours necessary for an airline co-pilot's ticket. The boys I know who have gone with lines tell me it's a damn good life, too. They like it. They have a future. And they haven't been wasting any time on the way, either, for many of the lines no longer take on any but Army trained pilots. If you're going to be a bombardment pilot, you may get invaluable experience with four-engine equipment. Reserve officers are logging time as co-pilots on the B-17's right now.

Regular commissions? I've been hearing about them for four years. So far there has been no wholesale handout of them. But 310 Douglas B-18's are being delivered to the Service and an effort made in other categories to bring airplane strength up to the authorized strength of 2320. Somebody's got to fly them. It looks like regular commissions to me before your five years are up.

And the Air Corps life? Like any other life, you can make of it what you will. However, there are a few side dishes to the main Blue Plate of an ordinary job: leisure; personal mobility - trips to all parts of the U.S. at no expense; variety and, occasionally, excitement; relative absence of back-knifing and of 'keeping up with the Jones's'; a full month's vacation a year; and last but not least, fresh air, the outdoors, the sun shining on you instead of a dome light above an office desk.

And the chances of getting bumped off? They kill more of them in bathtubs than they do in Army airplanes. If you're a fatalist, and you will be if you've ever had a crash, and walked away from it, you won't worry about the 'hazards' of military flying. You'll know that somebody else is calling the plays, whether you're an interior decorator or a steeplejack.

There are some of my classmates who wouldn't agree with much of what I've said. They'd say: 'I like the airlines better.' Or: 'the Army's a waste of time. Where does it get you?' Or: 'I'd rather have a job on the outside any day.' But if you pinned them down, they'd admit that the government doesn't owe them a thing. That they don't, and never will, regret a single day they spent in Texas in a Flying Cadet uniform or on active duty. That it's given them something. That they've GOT something."

Battalion Commander Hal B. Armstrong, of the May, 1937, Class at the Air Corps Primary Flying School, Randolph Field, Texas, expressed the following greeting to the members of the July, 1937, Class through the columns of THE TEE in the issue referred to in the preceding article:

"It is with a feeling of pride that we of the upper class of March, 1937, welcome the class of July, 1937. Although we have been Flying Cadets for only five short months, we have already realized the marvelous opportunity that awaits you. You, and you alone, are the ones to take advantage of it - we of the upper class are behind you to a man.

Many of you have left your homes and loved ones for a life that is entirely strange to you. You are embarking on a career that has been your life-long ambition. Adapt yourselves as quickly as

(Continued on Page 9.)

ARMY'S MULTI-SEATER FIGHTER MAKES FIRST FLIGHT AT BUFFALO

The War Department announced on September 1st that the new multi-seater fighter, technically known as the XFM-1, built by the Bell Aircraft Company at Buffalo, made its initial trial flight at the Municipal airport at Buffalo on that date. The flight was entirely successful.

No plane of recent times has created more speculation or has been watched with greater interest by observers than this new fighter since the War Department first on July 19th announced that it had been completed and delivered to the airport for tuning up prior to initial flight tests.

Lieut. Benjamin S. Kelsey, Air Corps, flew the plane on its first flight. He was assigned by the Army Air Corps' Experimental Division at Wright Field to make the performance flights. Lieut. Kelsey flew the new high-powered, twin-engined, low wing plane for more than an hour in the vicinity of the field at Buffalo, putting it through its paces; at first easily and gingerly and finally trying out all the controls at various speeds. Upon landing he expressed satisfaction at its performance, ease of control and general flight characteristics.

Questioned by the designers and builders and by interested Air Corps observers who had followed closely every maneuver of the plane while aloft, Lieut. Kelsey said:

"I have been standing by for several weeks, watching the plane checked and tested on the ground; I was anxious to get it in the air, for, as you know, after all, airplanes have to do their stuff in the air to justify their existence. I was anxious to get my hands on this one to see if it was as good as it looked. It was too early to say how it will work out through all its tests, that will take time - complete performance data obviously have not yet been collected. These tests will be continued at Wright Field where I have orders to deliver the plane soon. However, I am very well pleased with what this ship showed today and I am delighted that I have been given the opportunity to run the flight tests on it."

The XFM-1 is designed with the idea that there is great need for a fighter capable of coping with the giant Bombers of the so-called "Flying Fortress" type. It is expected that this plane will have sufficient speed to overhaul these large fast Bombers and the gun power to cope with them successfully when engaged.

The multi-seater fighter will soon go to Wright Field, Dayton, Ohio, for final flight tests, after which it is expected that it will be sent to the GHQ Air Force, Langley Field, Va., where it will be flown in competition with other craft and a new set of tactics worked out for its employment.

The plane contains some radical departures from conventional military design. To begin with, it is a pusher - its propellers are behind the wings. This is a revolutionary change in modern airplane construction. Engineers believe that this will give increased propeller efficiency. This arrangement permits the wing gunners, one on either wing, to have a free field of fire and observation to the front, uninterrupted by engine or propeller. This change in design also frees the gunners from having to work in the propeller blast, a handicap to gun maneuver and accuracy.

It is believed that this plane will develop sufficient speed to overhaul any air targets. This plane has six guns, more powerful armament than ever before carried on a fighter. It also carries light bombs. It accommodates a crew of five, pilot, co-pilot-navigator, radio operator-gunner, and two outboard wing gunners. It is powered by two engines recently developed by the Allison Engineering Corporation in conjunction with Air Corps engineers. All gasoline is carried in compartments in its giant wings. This materially reduces the fire hazard.

The new monoplane embodies all the latest design devices to increase its speed and air-worthiness. Its landing gear and tail wheel are electrically retractible. It carries flaps to reduce its landing speed. It provides heated compartments for all members of its crew, which will be needed at its fighting ceiling, over thirty thousand feet.

It contains some new and radical departures which may have far-reaching significance for the civil air industry as well as the military. Among these are its power plant location and its pusher propellers, and the auxiliary power plant for retracting landing gear, for lights, radio and starters. The auxiliary plant drives nine electric motors, taking this load off the two engines which drive the propellers. This new fighter can continue to transmit radio messages after forced landing when its main power plants are dead.

An innovation in this plane is the interchangeability of any or all members of the crew. The wing gunners can travel between their stations and the main fuselage while in flight; the co-pilot can change places with the pilot, the radio operator can man the guns; all stations have inter-communication. The advantageous location of the wing gunners in front of the engines permits them to see the pilot, making visual signals practicable between all members of the crew. Complete telephone inter-communication is also provided.

"NERVOUS SHOE LACES" AND "JITTERY HANDS"

The above heading would seem to be an appropriate one for the article on the Automatic Landing System, the authors of which are Captains Carl J. Crane and George V. Holloman, Air Corps. They say, referring to the series of tests conducted through the last two years in connection with the automatic landing system, that this line of endeavor brought up many humorous incidents, not the least of which have been such terms as "nervous shoe laces" and "jittery hands" which have always been evident to the observer watching the pilot keep "hands off" during the automatic landings.

The article by Captains Crane and Holloman is quoted, as follows:

"Much has been written in recent months concerning the personal equation during flight and the influence of this equation on accident rates. The newer developments in modern aircraft, to insure high performance, have required an increasing number of cockpit devices, all of which demand the attention of the pilot at some time or other during any given flight.

Pilots have felt and expressed the need for simplification of the various controls that must be manipulated and have expressed the need for this simplification in no uncertain terms. This simplification means that many of the functions now performed by the pilot in flight control and navigation must be done automatically. The landing of aircraft is no exception to this general trend. With this in mind, the personnel of the Materiel Division over two years ago began active prosecution of development work to simplify the procedure of instrument landing by making it automatic.

For over a year Air Corps test airplanes have been flown automatically over distances that have indicated the thorough reliability of the devices employed. This was one step in the perfection of automatic landing. The features therefore that are built into the automatic landing system are not only useful for the landing but are used throughout the entire flight of the airplane across the radio navigational aids with which the United States is provided. Test airplanes from Wright Field have been flown automatically from Wright Field as far as Texas and return under automatic control. Several flights have also been made from Wright Field via Buffalo, New York, to Newark, New Jersey, and from there via Langley Field, Va., to Wright Field, Dayton, Ohio. Obviously the automatic landing involves other factors besides control of direction. These factors are control of altitude, engine control, glide control and further engine control after landing.

With the provision of the Air Corps automatic landing system in an airplane and with the installation of the new "Z" type radio range beacons, the airplane may be flown automatically from station to station, from East to West Coast. If we imagine a group of the future "Z" type radio ranges placed in a line joining the runway of the landing field and extending to a point five miles therefrom, some idea will be gained of the essential features of the Air Corps automatic landing system. By reference to Figure 1 which represents the path of flight and landing made by the Army C-14 Cargo airplane on Monday, August 23, 1937, a generally clear idea will be obtained of the path of the airplane in the horizontal plane. Figure 2 represents a vertical view of the airplane flight path and landing path which the Army airplane followed in executing what is believed to be the world's first entirely automatic airplane landing. The two diagrams above mentioned should be self-explanatory and in themselves are evidence of the continuation of development on the Air Corps system of instrument landing.

On Monday, August 23, 1937, after over two years of intensive research and design with respect to automatic control features and automatic flight procedure, two entirely automatic landings were made in the period of an hour under adverse air and wind conditions by Captain Carl J. Crane, Director of the Instrument and Navigation Laboratory; Captain George V. Holloman, Assistant Director of the Laboratory, and Mr. Raymond K. Stout, project engineer in automatic landing. Since that time additional landings have been made in which disinterested personnel have been carried as observers on the flights in order to check the various factors entering into the fully automatic landings performed.

In the execution of an automatic landing, using the Air Corps system, it is necessary for the pilot of the airplane to bring the airplane to a definite altitude, determined by the sensitive altimeter, and to place the airplane within the range of radio reception of the ground radio facilities. It is, of course, desirable to place the airplane generally in the direction in which it is expected to land, but this is not necessary as was determined in flight, and can be understood by reference to Figure 1, in which the airplane was actually placed in a position which headed it 180° away from the direction of final landing. When the pilot has placed the airplane at a selected altitude in the vicinity (20 miles or less) of the landing field, the master landing switch is closed and the airplane proceeds through the following routine in accomplishing

AIR CORPS
AUTOMATIC LANDING SYSTEM

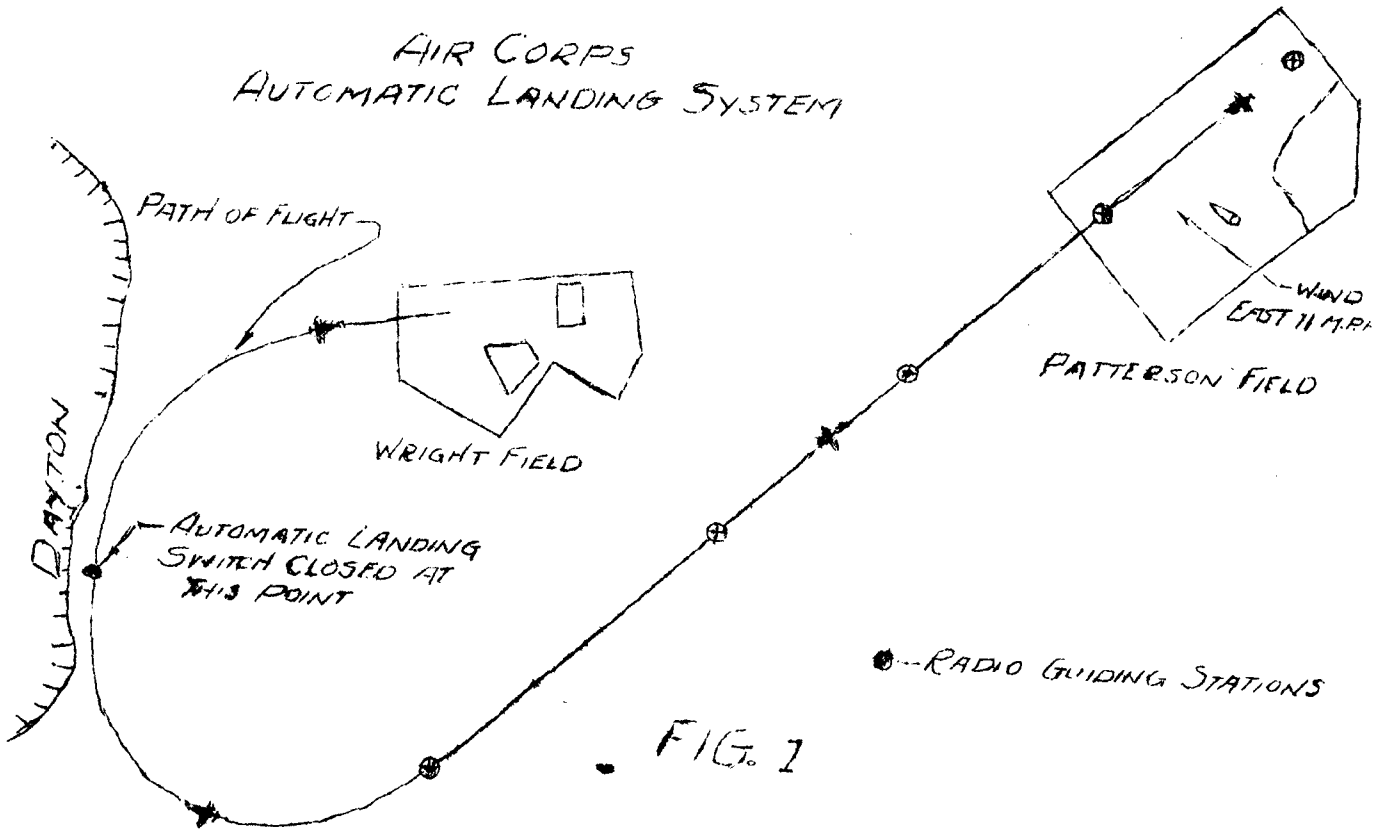

FIG. 1

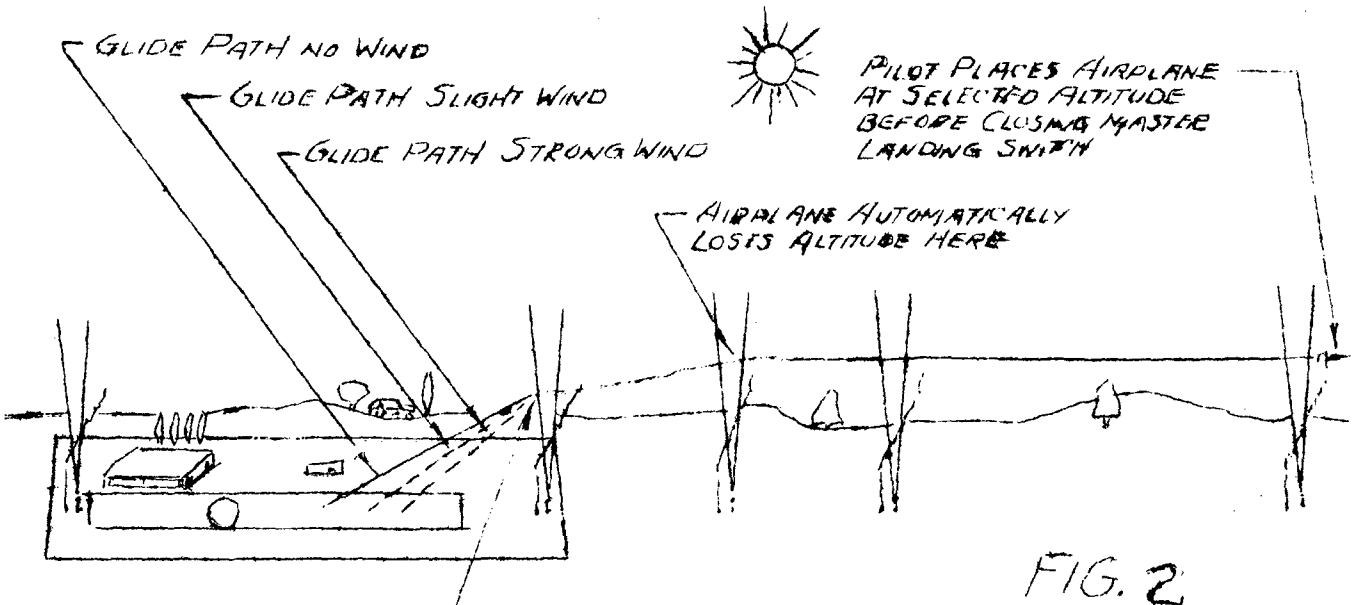

FIG. 2

the automatic landing:

a. The selected altitude is automatically maintained and the airplane's heading is changed so that it flies in the direction of the radio guiding station most remotely located from the landing runway.

b. The altitude control device maintains the proper altitude during the initial approach as just noted. The directional relay interlocks the radio compass and the gyro pilot and therefore causes the change in heading of the airplane. Adjacent to this relay is the radio compass, the frequency of which is automatically set by the interaction of the marker beacon receptor working in conjunction with the frequency selector. The pilot of the airplane is informed as to the correctness of automatic settings by observing the frequency selector indicator. Through the automatic and cooperative action of these devices, the airplane heads to the compass guiding station farthest from the field as shown in the diagram. Upon reaching that station the frequency is automatically changed to Station No. 3, where it is again automatically changed to the frequency of Station No. 2, where the frequency is again automatically changed to that of Station No. 1, while at the same time the engine throttle is automatically operated by the throttle engine. The throttle engine is interconnected with the altitude control in such a manner that should the airplane reach its minimum altitude prior to reaching radio station No. 1, the throttle engine will be so actuated to control the airplane in such a manner that it will maintain accurately the minimum altitude required for the operation of the automatic landing system.

After passing Station No. 1, the throttle engine is so actuated that the airplane maintains a selected glide angle and rate of descent until ground contact is made. When ground contact is made, the throttle engine is further actuated by the landing gear switches, which in turn causes the engine to be idled and proper brake application made.

At the present writing, the automatic landing system has been flown so that all of the landings made to date have been made under cross wind conditions varying in intensity as high as eleven miles per hour. In at least 50% of the automatic landings made, the air conditions have been moderately rough.

The Sperry Gyro Pilot has been used throughout as the automatic flight control features of the airplane. Certain additions to the Sperry Pilot have been required in order to provide for the automatic control of direction.

The automatic landing system was designed by Captain Carl J. Crane, Director of the Instrument and Navigation Laboratory at Wright Field, and working with Captain George V. Holloman had conducted practically all of the flight tests which have brought to a successful conclusion the automatic landing system. The various units of automatic control were designed by the above noted officers, Mr. Raymond K. Stout, project engineer, and Mr. C.D. Barbulesco of the Signal Corps Aircraft Radio Laboratory, which laboratory assisted materially in the design and construction of various units entering into the automatic landing system.

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Flying Cadet's Future

(Continued from Page 5)

possible to the ways of the Service and analyze yourself with a desire to disclose those characteristics which a successful officer in the Air Corps must have and then do your utmost to develop them. For instance, have you obedience, initiative and perseverance?

Your course is hard, not only in flying, but also in ground school. There will be occasions when you will feel like 'throwing in the sponge', and admitting defeat. However, if you do weaken or refuse to give the best you have, it is better that you be eliminated - a man who does his duty half way is worse than none at all. Unfortunately, flying is an art in which all of us cannot become proficient. It is no disgrace to washout on the flying line if you can say truthfully that you have given your best. You are the ones we are sorry to lose. * * * "

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CONSTRUCTION AT MARCH FIELD

Under the supervision of the Constructing Quartermaster, extension and resurfacing of the south side of the landing mat is under way at March Field, Riverside, Calif.

When completed, the project will afford a 4,000-foot runway, 150 feet wide, for the heavier type airplanes. It will extend 200 feet past the east end of the 3550-foot mat, and 250 feet past the west end.

This new runway will greatly facilitate the increasing traffic into March Field of the newer type bombing planes.

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All of the senior officers of the 2nd Bombardment Group, Langley Field, Va., recently received from the War Department the rating of Military Airplane Pilot. "The officers and men of this Group," says the News Letter Correspondent, "wish them many more successful years and hours in the Air Corps and trust that their aviation future will not be as hazardous as the past."

BIOGRAPHIES

LIEUT. COLONEL CHARLES T. PHILLIPS

Lieut. Colonel Charles T. Phillips, Air Corps, now on duty in Washington, D.C., as a member of the War Department General Staff, was born at Tullahoma, Tenn., July 10, 1889. He attended preparatory school in Tennessee; the Gordon Institute at Barnesville, Ga., for one year, and, after completing his sophomore year at the University of Georgia, Athens, Ga., he was engaged in civil engineering work for one year and then entered the newspaper field as reporter, special correspondent and special writer for the Atlanta JOURNAL.

Enlisting as a private in the 5th Georgia Infantry in March, 1916, Colonel Phillips, on April 19th of that year, was appointed a 1st Lieutenant. On June 20, 1916, when his regiment was mobilized and mustered into the Federal service, he was sent to the mobilization camp at Macon, Ga., in command of a company. He served in this capacity until a few weeks after the arrival of this regiment at El Paso, Texas, for Mexican Border patrol duty, when he was attached for duty and instruction to the 34th U.S. Infantry.

Following attendance at garrison school and commanding a company of that regiment for several months, he was attached to the 122nd Infantry, and for a brief period served as company commander with that organization.

In July, 1917, Colonel Phillips was ordered to Wilbur Wright Field, Fairfield, Ohio, for flying training. During the course of this training, he served as assistant to the commanding officer of cadet squadrons, and later as field supply officer, as commanding officer of the 44th Aero Squadron and as commanding officer of the 211th Aero Squadron. On December 29, 1917, he reported at Gerstner Field, Lake Charles, La., for advanced training in Pursuit aviation. In addition to his duties as a student, he served as assistant to the officer in charge of flying and as instructor of cadets in Guard Duty, Army Regulations and officers' duties.

Upon his graduation from the Pursuit School at Gerstner Field, he reported on May 8, 1918, at the School of Aerial Gunnery, Selfridge Field, Mich., where he was on duty as assistant to the officer in charge of flying and as assistant to the chief instructor at the school. On October 10, 1918, he was ordered to the Aviation Concentration Depot at Garden City, L.I., New York, for transportation overseas, but the Armistice was signed while he was awaiting transportation.

Assigned to the 1st Provisional Wing at Mineola, L.I., New York, Colonel Phillips served for a brief period with the 48th Aero Squadron and then with the 51st Aero Squadron. He commanded the latter organization from December 6, 1918, to January 10, 1919, and for a short time was personnel adjutant. During April and May, 1918, he was on duty with the Eastern Flight of the Victory Loan Circus. On May 24, 1919, he was assigned as Commanding Officer of the 3rd Aero Squadron at Hazelhurst Field, L.I., New York, and on June 28th entrained with this organization for the Philippine Islands.

Colonel Phillips was stationed at Cuartel de Espana, Manila, from August 15 to December 2, 1919, and at Clark Field, Pampanga, until August 10, 1921. In addition to his duties as commanding officer, he also served as Adjutant and Personnel Adjutant of the field and later as commanding officer thereof until the expiration of his tour of duty in the Philippines.

Upon his return to the United States, he was, in September, 1921, assigned as student at the Field Officers School at Langley Field, Va., and he graduated therefrom on June 15th of the following year. He was then assigned as Instructor, Air Service, Maryland National Guard, with station at Logan Field near Baltimore, Md. While on this assignment, he was on temporary duty in the Militia Bureau, Washington, D.C., from June 4 to December 7, 1923, and from November 5, 1925, to January 2, 1926. From December 7, 1923, [illegible] he performed additional duty as Air Officer of the 3rd Corps Area, Baltimore, Md.; as assistant to the Chief of Staff, G-1, and as assistant to the Recruiting Officer, 3rd Corps Area.

Assigned to the Office of the Chief of the Militia Bureau, January 2, 1926, Colonel Phillips was on duty therein until September 15, 1929, when he was assigned as a student to take the advanced course of instruction at the Infantry School at Fort Benning, Ga. Following his graduation from this school, on June 10, 1930, he was assigned to station at Maxwell Field, Ala., where for brief periods he served as Commanding Officer and as Executive Officer until August 22, 1930, when he reported for duty as a student at the Command and General Staff School at Fort Leavenworth, Kansas. Graduating from the two-year course at this school, he attended the Army War College, Washington, D.C., for one year, and upon his graduation therefrom on June 27, 1933, and following the completion of a five weeks' course at the Chemical Warfare School at Edgewood Arsenal, Md., he was assigned to station at March Field, Riverside, Calif., where from September 23, 1933, to November 2, 1933,

he commanded the 9th Bombardment Squadron, and thereafter served as Executive Officer of the 7th Bombardment Group until November, 1934, when he was transferred to the Panama Canal Department.

During his two-year tour of duty in Panama, Colonel Phillips served, first, as Executive Officer of the 19th Composite Wing and later, in the order given, as Operations Officer of the 18th Pursuit Group, Albrook Field; Adjutant; Acting Air Officer of the Panama Canal Department, and Commanding Officer of Albrook Field and the 18th Pursuit Group. In September, 1936, he entered upon his duties as a member of the War Department General Staff.

Colonel Phillips was commissioned a 1st Lieut., Signal Corps (temporary) August 5, 1917, and promoted to Captain, August 29, 1918. He was commissioned a Captain in the Air Service, Regular Army, July 1, 1920, and promoted to Major, Air Corps, July 1, 1931, and to Lieut. Colonel (temp.) March 4, 1935. He holds the flying ratings of "Airplane Pilot" and "Airplane Observer."

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LIEUT. COLONEL HUBERT V. HOPKINS

Lieut. Colonel Hubert V. Hopkins, Air Corps, now on duty as Chief of the Industrial War Plans Section, Materiel Division, Wright Field, Dayton, Ohio, was born at Colorado Springs, Colo., July 10, 1889. He graduated from the Colorado Springs High School in 1908 and from the University of Washington State in 1916, receiving the degree of Bachelor of Science in Chemical Engineering. During the summer of 1914, he attended the War Department Military Training Camp for college students at Monterey, Calif. While a student at the Washington University, he enlisted in the 2nd Infantry Regiment, Washington National Guard, and after less than two years' service was commissioned a second lieutenant in that organization on November 26, 1916. He served for four months as Acting Regimental Adjutant, eight months as aide de camp to the Adjutant General, State of Washington, and four months on recruiting duty. He was promoted to 1st Lieut. of Infantry, Washington National Guard, March 9, 1917, and assigned to duty as Battalion Adjutant. On August 5, 1917, he accepted a commission as 1st Lieut., U.S. Army, and was assigned to the 161st Infantry at Camp Mills, L.I., New York.

On November 19, 1917, Colonel Hopkins accepted a commission as 1st Lieutenant, Signal Corps (temp.) and was assigned to the Headquarters of the Spruce Production Corporation at the aviation cantonment at Vancouver Barracks, Wash., and attached to Headquarters, casual detachment. He was on duty with the 411th Aero Construction Squadron from January 1 to 24, 1918; with the 602nd Aero Supply Squadron to March 1, 1918, and with the 604th Aero Supply Squadron to May 1, 1918. During all this time he also served as Adjutant of the casual detachment and as Exchange Officer. On June 12, 1918, he was assigned as Commanding Officer of the 13th Company, casual detachment, and he continued as such until August 2, 1918, when he was assigned as Assistant to the District Supervisor, Willapa Bay District, Spruce Production Corporation, with station at Raymond, Wash. He performed this duty until February 11, 1919, when he was transferred to Washington, D.C., and assigned to duty in the Personnel Department of the Bureau of Aircraft Production, the functions of which department were subsequently transferred to the Personnel Division, Office of the Chief of Air Service. He also served as Supply and Property Officer of the Personnel Division and as recorder of various boards of officers.

Relieved from duty in the Office of the Chief of Air Service, March 10, 1921, Colonel Hopkins was assigned to the Army Balloon School at Ross Field, Arcadia, Calif., as student to pursue the course of instruction thereat, and which course he completed on October 29, 1921. Thereafter he continued on duty at the Balloon School as Engineering Officer and as Instructor in Topography, Map Reading, Aerial Photography and Aeronautical Instruments. On May 1, 1922, he began the course in airship piloting.

Transferred to Scott Field, Belleville, Ill., he served as Instructor at the Balloon and Airship School at that field from August 20 to September 23, 1922, when he was transferred to Langley Field, Va., for duty as student at the Field Officers School, which designation was subsequently changed to the Air Service Tactical School. Graduating from this school on June 15, 1923, he was transferred to Kelly Field, Texas, for duty and training with the 10th School Group, taking the Observation course at the Advanced Flying School. On November 11, 1923, he was assigned as Commanding Officer of the 42nd School Squadron, and he performed this duty until January 2, 1924, when he was assigned as Instructor at the Advanced Flying School.

In February, 1924, Colonel Hopkins was transferred to the Hawaiian Department. He was assigned to the 4th Observation Squadron at Wheeler Field, Schofield Barracks, on April 14th, and was on duty as Commanding Officer of Flight "B" and as Transportation Officer. He assumed command of the Squadron in November, 1924. On January 9, 1925, he was assigned as Assistant Air Officer of the Hawaiian Department, serving as such until November 26, 1927. He served as Acting Air Officer until May 25, 1928.

Upon his return to the mainland, he was assigned to the Materiel Division at Wright Field, Dayton, Ohio, for duty in

(Continued on top of Page 13).

WHY THE WEATHER?

A Canadian newspaper recently published the following under the above heading:

"Wind at will! In these days of yacht racing wind is very important. It is also important to the Caribs who practice the art not only of making the wind blow but of stopping it also. They whistle and wave their hands at a rain cloud to drive it away or in another direction. To quiet a storm, they chew the cassava root and spit it into the air and sea to pacify the spirit Zemeen, who may be hungry. To divert an unfavorable wind they strike the stern of their canoes with an arrow. The custom of whistling to raise a wind is very widespread. These childish beliefs and practices, if illogical, are interesting."

A constant reader of the Air Corps News Letter who read this item was greatly impressed with it and, being of Scotch descent and a firm believer in economy, with particular reference to the taxpayer, he saw at once great possibilities for effecting reductions in appropriations for the military establishment. The deeper his mind wandered into the subject the greater these possibilities presented themselves.

Since the subject matter of the above newspaper clipping had reference to the weather, it was natural for the N. L. Reader first of all to recall to mind the recently created Weather Service of the Army Air Corps. Now, the scheme he unfolds to effect savings in appropriations for the Army Air Corps is as follows:

First, to abolish completely the new and expensive weather set-up; next, have the Materiel Division take the place of those dealers in black magic (Weather Bureau). To the normal functions of the Materiel Division should be added a new and very important task, namely, to take care of the procurement and distribution of the Cassava Root. The Materiel Division is to equip each airplane with a ration to each member of the combat crew, issues to be made according to the size of the ship and the crew; then all hands, by the GHQ efficiency count, can chew, spit and pacify the weather.

With this accomplished, there would be no necessity in supporting a Weather Bureau. De-icers would be legislated out of existence and, above all, airplanes could come and go at all hours, regardless of Mother Nature.

Haven gotten thus far, our reader grows even more enthusiastic, and he goes on to say that the adoption of his scheme will remove a lot of flying risk, prevent many crack-ups, and tend to make airplanes last indefinitely.

He cautions the N.L. Editor not to tell Rube Goldberg about the scheme, as he first wants to obtain a patent on it.

SEARCH FOR FLYING CADET GUY W. EDGERTON

By the Kelly Field Correspondent

The mysterious disappearance of Flying Cadet Guy W. Edgerton, while returning from a cross-country training flight from Kelly Field to Barksdale Field has not yet been solved. Thirteen student flyers from the Attack Section of the Air Corps Advanced Flying School set out on a navigation flight to Barksdale Field on August 30th, under the leadership of 2nd Lieut. Edward F. Cullerton, Air Reserve. They arrived in due time, and at dusk set out for the return trip.

Shortly after they left Barksdale Field they encountered a severe thunderstorm, covering a wide area and blocking their path. Twelve students landed safely; five returning to Barksdale Field, two to Waco, one to Houston, two to Austin and two to Kelly Field. The thirteenth man, Flying Cadet Edgerton, has not yet been found.

Scheduled training was immediately discontinued and all available pilots of Kelly Field were sent on an intensive search of areas in which he probably was forced down. Randolph Field officers were also pressed into service as searching parties, as well as all available pilots at Barksdale Field. After four days of searching, with more than a hundred airplanes, the hunt was ordered discontinued by Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center.

Rumors and speculations were rife as to what might have happened and what probably did happen. About a hundred telegrams were received at Kelly Field and Randolph Field from persons on the ground all the way from Houston, Texas, to Hugo Oklahoma, reporting that some unusual phenomena had been observed, which might have been the lost flyer. Each rumor thus reported was exhaustively investigated, but to no avail. In addition to this, the densely wooded area along the Neches and Trinity rivers between Barksdale Field and Kelly Field was divided into three sectors, Barksdale Field covering the northeast sector, Randolph Field the northwest sector and Kelly Field the south sector. Each sector was further subdivided into a small area, and each pilot was instructed to search this area thoroughly. The pilots conducting the search each flew approximately 8 hours for each of the four days on the search. No clues whatsoever were found to the disappearance.

It is the opinion of Captain Glen C. Jamison, Senior Instructor of the Attack Section in which Flying Cadet Edgerton was a student, that the missing flyer encountered the severe storm and rough weather at about the time his auxiliary tank was exhausted, and in fighting for control of his airplane he became confu

(Continued on Page 13).

the Experimental Engineering Section. On July 1, 1928, he began his duties as student at the Air Corps Engineering School at Wright Field and, following his graduation therefrom in June, 1929, he resumed his former duties in the Experimental Engineering Section.

In September, 1929, Colonel Hopkins reported for duty as student to pursue the course of instruction in Aeronautical Engineering at the Massachusetts Institute of Technology, Cambridge, Mass. Upon his graduation from the one-year course at this school, he reported on August 2, 1930, to the Office of the Chief of the Air Corps, Washington, D.C., for duty in the Plans Division. From July 6 to 31, 1931, he took the Field Officers' course of instruction at the Chemical Warfare School at Edgewood Arsenal, Md.

Detailed as a student at the Command and General Staff School, Fort Leavenworth, Kansas, Colonel Hopkins, upon the completion of the two-year course of instruction thereat, was assigned as a student at the Army Industrial College, Washington, D.C., from which he graduated in June, 1935, following which he was again assigned to duty at Wright Field, Dayton, Ohio. On September 9, 1936, he assumed his present duties as Chief of the Industrial War Plans Section of the Materiel Division.

Colonel Hopkins was commissioned in the Regular Army as a 1st Lieutenant of Infantry on July 1, 1920. He was transferred to the Air Service on October 11th of that year; promoted to Captain as of July 1, 1920; to Major, July 18, 1931, and to Lieut. Colonel (temp.) June 16, 1936. He holds the ratings of "Airship Pilot," "Balloon Observer" and "Airplane Observer."

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Search for Flying Cadet Guy W. Edgerton
(Continued from Page 12).

ed when confronted with the necessity of changing tanks and dived or spun into ground, being unable to recover.

If he struck the ground in the densely wooded or swampy areas along the rivers mentioned, it would be impossible to see the wreck from the air, and the location would be all but inaccessible by land. It is also possible that he was forced out over the Gulf of Mexico.

Officials of the Air Corps Training Center have the meager comfort of knowing that no stone was left unturned to find this Cadet. The Air Corps has lost a promising student pilot.

Cadet Edgerton, a native of Kenly, N.C., was born on January 23, 1916, and graduated from the Presbyterian Junior College, Maxton, N.C. Prior to his appointment as a Flying Cadet to enter the October, 1936, class at the Primary Flying School at Randolph Field, Texas, he was a salesman with an automobile concern in Washington, D.C. He graduated from the Primary Flying School on June 25, 1937; was transferred to the Advanced Flying School, Kelly Field, and was to have graduated in October, 1937, and commissioned a second lieutenant in the Air Reserve.

The missing Flying Cadet is survived by his parents, Mr. and Mrs. W.H. Edgerton, of Kenly, N.C., to whom the sincere sympathy of the Air Corps is extended.

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MAINTENANCE FLIGHT OF CLASS NO. 29-B

Plans have been completed for the maintenance flight of Class No. 29-B of the Air Corps Advanced Flying School, Kelly Field, Texas. The students will make the flight in five echelons, landing at fields in West Texas, New Mexico, Arizona, and Louisiana.

The first echelon of the Attack Section and the first echelon of the Pursuit Section will leave Kelly Field on September 20th. The Observation Section leaves on September 23rd, and the second echelons of the Attack and Pursuit Sections start their flight on September 27th.

The students will visit Lubbock, El Paso, Marfa, Dryden, Fort Clark, Midland, Dallas, Amarillo, San Angelo and Abilene, Texas; Roswell, Albuquerque and Lordsburg, New Mexico; Tucson and Douglas, Arizona; and Barksdale Field, La.

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NEW AIRPLANES FOR KELLY FIELD

The number of BT-9 airplanes in use at the Air Corps Training Center has been augmented by eight, as a result of two recent ferry trips.

On August 9th, five officers from Kelly Field departed by train for Inglewood, Calif., returning with four BT-9's in normal time without mishap. The officers making the trip were Major Robert T. Cronau, Captains Harvey F. Dyer, Burton M. Hovey, Jr., and 1st Lieut. Samuel E. Anderson.

On August 20th, Captain Russell E. Randall, 1st Lieuts. Roger J. Browne, Charles H. Pottenger and 2nd Lieut. Clarence M. Sartain entrained for Inglewood and returned in due time with four new airplanes.

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The full-time school schedule at the Air Corps Tactical School, Maxwell Field, Ala., went into effect at Reveille on September 7th, and, according to the News Letter Correspondent, everything is getting settled down to normal for another nine months' school course. Furloughs and summer schedules will be forgotten for a while now.

THE NEW CLASS AT THE PRIMARY FLYING SCHOOL

The class which will begin flying training at the Air Corps Primary Flying School at Randolph Field, Texas, on October 15th next, will number approximately 216 students, comprising 106 2nd Lieutenants of the Regular Army who graduated from the U.S. Military Academy, West Point, N.Y. on June 12th, last; 103 candidates from civil life; four enlisted men of the Air Corps and three enlisted men from other branches of the military service.

A year of intensive training is ahead of these students who have elected aviation as their field of endeavor. The training year is divided into three stages, each of four months' duration - the primary and basic stages at the Primary Flying School at Randolph Field, and the final and advanced stage at the Advanced Flying School at Kelly Field, Texas.

Those students who successfully complete this one year's course will receive the rating of "Airplane Pilot." The officer graduates, who hold commissions in the various branches of the service, except the Air Corps, will be transferred to the Air Corps and will thus join the ranks of the permanently commissioned pilots of this branch of the service. The graduates among the enlisted and civilian candidates, who will train under the status of Flying Cadets, will be commissioned second lieutenants in the Air Reserve and placed on extended active duty with various Air Corps tactical organizations.

Among the candidates recommended by the Chief of the Air Corps for appointment as Flying Cadets, California, with eleven students, has the largest representation of native sons, followed by Texas with ten and Oklahoma with eight. None of the cities represented in this new class has more than two students.

It should be stated that the list of Flying Cadet appointees given below is only tentative and that it is subject to a number of alterations in view of the likelihood that, in the light of previous experience, some of the candidates recommended for appointment will probably decline same for sundry reasons, principally a change in their status since they first applied for appointment several months ago. Some may have secured a lucrative position in the commercial field, offering them a promising future, and some may have succumbed to the darts of Dan Cupid, thus rendering them ineligible for appointment. Further, it is almost certain that additional applicants will receive appointment before the time set for the class to begin training.

The names of the members of the June, 1937, West Point graduating class, who were assigned to the Air Corps for flying training, were published in the issue of the Air Corps News Letter of August 1, 1937.

The candidates thus far selected for appointment as Flying Cadets for the October 15th Class at Randolph Field are listed below, as follows:

CIVILIAN CANDIDATES

Bacon, Thomas Phillip	Bessemer, Ala.
Speer, William Arthur	Birmingham, Ala.
Hornsby, Claude Eugene, Jr.	Centerville, Ala.
Tuell, Joseph Charles	Bisbee, Ariz.
Roberts, John A., Jr.	Beebe, Ark.
Bylander, Richard Murray	Little Rock, Ark.
Crisp, John Duncan	Magnolia, Ark.
Smith, Weldon Holliwell	Berkeley, Calif.
Hunt, Snowden Morris, Jr.	Hollywood, Calif.
Rundquist, Eric Armand	Los Angeles, Calif.
Willard, Edward Dulaney	Modesto, Calif.
Murray, Samuel Fenton	Palo Alto, Calif.
Heirlein, Oscar Allen, Jr.	Sacramento, Calif.
Noguchi, David	Sacramento, Calif.
Knorre, Fred James, Jr.	San Francisco, Calif.
Stuart, Robert	San Jose, Calif.
Lindsay, James Robert	Santa Paula, Calif.
Nisbett, Charles Albert	East Hartford, Conn.
Manierre, Ernest Roderic	Hartford, Conn.
Carey, Raymond Joseph	Manchester, Conn.
Giesecke, Paul	Rockville, Conn.
Sullivan, Paul B.	West Hartford, Conn.
Lee, Woodrow Wilson	Washington, D.C.
Holcombe, Elton Earl	Atlanta, Ga.
Whitehouse, Robert Rempfer	Evanston, Ill.
Lawver, Lawrence Sterman	Freeport, Ill.
Patchell, Stephen Frank	Maywood, Ill.
Birthisel, Paul Lee	Park Ridge, Ill.
Hibbert, Richard B.	Ft. Benj. Harrison, Ind.
Eidson, Harry Taylor	Indianapolis, Ind.
Kuntz, Milton Erwin	Indianapolis, Ind.
Cole, Perry Sherman	Washington, Ind.
Kluever, Arnold F.A.	Atlantic, Iowa
Henselman, Donald	Holcomb, Kans
Bach, Harmon	Jackson, Ky
Walker, Arthur James	New Orleans, La.
Westbrook, Sam W.	Pleasant Hill, La.
Cully, Oscar DeWitt, Jr.	Baltimore, Md
Bourgoin, Raoul Joseph	Frenchville, Maine
Casey, Edward Richard	Boston, Mass.
Feeney, Francis Robert	Boston, Mass.
Magri, Sebastian Michael	Lawrence, Mass.
Keshishian, Anthony	Lynn, Mass.
Smith, Robert Jay	Charlotte, Mich.
Vanderhill, Paul J.	Holland, Mich.
Bullis, Harry J.	Portland, Mich.
Carlton, John N.	St. Peter, Minn.
Maxey, Walter Loveless, Jr.	Brandon, Miss.
Hendricks, E.T.	Hattiesburg, Miss.
Prichard, William Jesse	Inverness, Miss.
Sparks, Walter William, Jr.	Inverness, Miss.
Longine, Houston Walker, Jr.	Silver Creek, Miss.
Householder, Leland Dana	Sedalia, Mo
Thurman, Wayne Earl	Lincoln, Neb
Sowinski, Edward	Las Vegas, Nev
McGinity, Frank Joseph	Danville, N.J
Marshall, Richard Skip	Newark, N.J
Healy, John Patrick	North Bergen, N.J.
Maday, Charles	Buffalo, N.Y.
Mayer, Richard August	New York, N.Y.
Macomber, Francis Allen	Rochester, N.Y.
Quinn, Robert Sidney	Rochester, N.Y
Travis, Frank Hotchkiss	Tarrytown, N.Y
Skow, Delmar Norris	Devils Lake, N.I
Rockey, Guy Hamilton	Athens, Ohi
Wheaton, Robert Harvey	Athens, Ohio
McKechnie, Robert Ross	Cleveland, Ohio
Mason, Joe Lennard	Columbus, Ohio
Mauborgne, Benjamin Poore	Fairfield, Ohio
Hubbard, Ronald D.	Warren, Ohio
Seamon, Walter Earle, Jr.	West Jefferson, Ohio

Case, Albert North	Frederick, Okla.
Taylor, Carl Edwin	Hugo, Okla.
Sterr, Frederick P.	Lindsay, Okla.
Jacks, Angus	Macomb, Okla.
Hendrickson, Wylie Monroe	Norman, Okla.
Nothstein, Charles Lewis	Norman, Okla.
Reynolds, Thomas C., Jr.	Valliant, Okla.
Adams, Jack	Walters, Okla.
Sharp, Frank Douglas	Salem, Ore.
Wintermute, Ira Francis	Salem, Ore.
Leer, Edwin Harold	Vermillion, S.D.
Knieff, Claude Alexander	Brownwood, Texas
Stallcup, Weldon H.	Celina, Texas
Arnold, Walter Erath	El Paso, Texas
Cronkhite, Glen Iver	El Paso, Texas
Bradshaw, Thomas E., Jr.	Houston, Texas
Dunn, Frank Lowry	San Antonio, Texas
Garza, George J.	San Marcos, Texas
Johnson, Woodrow	Richland Springs, Texas
Hampton, Morrell Wade	Sherman, Texas
Reagan, Bruce Warner	Vega, Texas
Gilbert, Huntington Kerr	Dorset, Vt.
Smith, Charles John	Rutland, Vt.
Reed, Charles Wesley	Raymond, Wash.
Brimsmead, John C.	Seattle, Wash.
Rowland, Arthur William	Seattle, Wash.
Perkins, James Edwin	Bluefield, W.Va.
Humphreys, Milton Dayton	Marlinton, W.Va.
Kime, Duane Louis	Milwaukee, Wis.
Hubbard, Clenn Elwood	Durand, Wis.
Tietz, Edward Christian	La Crosse, Wis.
Bohnaker, William John	Platteville, Wis.

ENLISTED MEN (PRIVATES)

Air Corps

Young, Sig Rogers — Tucson, Ariz.
52d School Squadron, Randolph Field, Tex.

Staton, Jarrett A. — Hagerstown, Md.
28th Bomb. Squadron, Nichols Field, P.I.

Chittum, Matthew M. — Altoona, Pa.
Base Hqrs. and 1st Air Base Squadron, Langley Field, Va.

Baxter, Forrest Houston — Hazel, S.D.
53d School Squadron, Randolph Field, Texas

Other Branches of the Service

Green, Edwin Smith — Imperial, Calif.
Troop A, 11th Cavalry, Presidio of Monterey, Calif.

Wright, George — Buffalo, N.Y.
Post Q.M. Detachment, Fort Shafter, T.H.

Cammack, Charles A. — Portland, Ore.
29th U.S. Engineers, Portland, Oregon

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PROMOTION OF AIR CORPS NONCOM. OFFICERS

Personnel Orders recently issued by the Office of the Chief of the Air Corps announced the promotion of the following noncommissioned officers of the Air Corps, effective September 1, 1937, and their assignment to new stations, as indicated opposite their names, viz:

To be Master Sergeants, Air Corps

Tech. Sgt. Ballard B. Small, Hamilton Field,
Tech. Sgt. Elga M. Glendy, Chanute Field, Ill.
Tech. Sgt. Ruben St. John, Hamilton Field, Calif.
1st Sgt. Benjamin L. White, Bolling Field, D.C.*
1st Sgt. Joe G. Laver, Langley Field, Va.*
Tech. Sgt. Edcil C. Maxwell, Ft. Benning, Ga.*
Tech. Sgt. John P. Bollenbach, Fairfield A.D.
Tech. Sgt. Edward Miller, 8th Corps Area Det.

To be Technical Sergeants, Air Corps

(All Staff Sergeants)

Robert E. Rice, Hamilton Field, Calif.
Mathew A. McGraw, Hamilton Field, Calif.*
Anthony J. Gorges, Barksdale Field, La.*
Claud M. Gilbert, Mitchel Field, N.Y.
Raymond Kerr, Langley Field, Va.*
Asa C. Hoober, Langley Field, Va.*
Carrell L. Shaw, Randolph Field, Texas*
Edward L. Carr, San Antonio Air Depot, Texas
Charles Joyner, 9th Corps Area A.C. Detachment
Walter E. Banas, Rockwell Air Depot, Calif.
Michael M. Rozburski, Scott Field, Ill.
Roy D. Cheatham, Langley Field, Va.*
Myron Roeske, Moffett Field, Calif.*
Henry Franklin, Maxwell Field, Ala.*
Karl R. Johnson, Mitchel Field, N.Y.
Halstead J. Rowen, Barksdale Field, La.*
William K. Sheffield, Hamilton Field, Calif.*
Harry N. Fuecker, Hamilton Field, Calif.*
Adam J. Vielock, Hawaiian Department*
Paul Lash, Langley Field, Va.*
Jessy C. McConnell, March Field, Calif.*
George H. Oram, Chanute Field, Ill.
Jacob S. Brown, Mitchel Field, N.Y.
Clyde L. Falls, Fort Leavenworth, Kansas.
Edgar W. Gardner, Rockwell Field, Calif.
Alexander Kacziba, 3rd Corps Area A.C. Det.
Robert L. Barlow, Middletown Air Depot, Pa.
Grover C. Moss, Kelly Field, Texas*
August Schantel, Barksdale Field, La.*
James M. Caldwell, Bolling Field, D.C.
Louis A. Kirby, Fort Benning, Ga.
Michael Chuturich, 7th Corps Area A.C. Det.
Maurice Gorin, Mitchel Field, N.Y.
Homer H. Hunt, Mitchel Field, N.Y.*
Floyd H. Peacock, Fairfield Air Depot, Ohio.
James C. Elder, Langley Field, Va.

Note: Where an asterisk follows the name of the station, no change of station is effected.

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PLENTY OF RAIN IN THE PHILIPPINES

"Cancelled" in big red letters through the Flight Schedule every morning for ten successive days - reason - ceiling zero - visibility zero. "The rainy season is here to stay," says the News Letter Correspondent from Clark Field, P.I. "The highways and railroads between Clark Field and Manila were washed out, and for miles covered with up to twelve feet of water. The Third Pursuit with their ZB-3-A furnished Stotsenburg and Clark with their mail, daily paper, milk for the babies, and film for the evening movies until the waters subsided."

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Major Robert D. Knapp, Air Corps, formerly Director of Flying Training at the Advanced Flying School, Kelly Field, Texas, left that station on August 28th for Maxwell Field, Ala., where he will be a student at the Air Corps Tactical School.

Have you written a story of one of your flying experiences under the heading "And I Learned About Flying From That?" We would greatly welcome it for the Air Corps News Letter.

MATERIEL DIVISION NOISE-REDUCING PROGRAM
By the News Letter Correspondent

The chief sources of objectionable noises at Wright Field are the engine and propeller test stands. The worse of these, but fortunately the less frequent of operation, are the propeller test stands. For one whose work or residence may be in range, this noise is at times a persistent intrusion on attention, disastrous to rest or mental concentration. To this harassed individual it is small comfort to remember that the noise is part of a program necessary for the development of dependable airplane engines and propellers. He desires that his attention be free for application as he may direct it in his business or pleasure.

The Materiel Division, U.S. Army Air Corps, has long realized that noise is an unnecessary incubus of motor life and that its continued existence is especially inconsistent with the present fast developing sophistication with respect to home comforts. In 1931, when the old engine test stands burned, new stands were built with special provisions for reduction of noise. The test houses form a thick walled, concrete enclosure practically impervious to noise except through its relatively light doors and through the openings for the inlet and outlet of air in which the engine energy output is dissipated. These openings are in the form of short, vertical stacks arranged to direct the sound released through them upward but not horizontally. Flyers report that the noise from these stacks can be heard over the noise of the airplane at heights up to 5,000 feet. Also, in some engine test installations a device known as a test club can be used instead of a flight propeller. The test club loads the engine without producing as much noise as a flight propeller. The provisions for the reduction of noise just described, though entirely adequate in their time, have become inadequate for the highest powered engines now available. The practice has been to limit the testing of the highest powered engines to working hours. A similar policy has been followed in testing propellers.

Since it is highly desirable to operate tests continuously, the Materiel Division has under way a program for soundproofing all engine test stands. The soundproofing of one engine test stand is now complete. Even with the highest powered engines operating on flight propellers, the noise from this test stand would not be objectionable even at night to people whose homes are more than 500 yards from the test stand. The soundproofing consists, first, of placing sound absorbing material in the test house stacks which are partitioned into a number of smaller stacks by the soundproofing material; second, of providing heavy doors covered with sound absorbent material and rigidly supported to prevent them vibrating as diaphragms.

Now ordinary field noises, such as birds, rustle of leaves or tall grass, or the distant rumble from a highway drown out the noise of the soundproofed stand anywhere beyond the limits of the flying field.

At present, the cost of silencing of propeller stands appears exorbitant, due largely to the size of the stands and the treacherous skip distances of sound; much like the skip distances the radio amateurs have to battle. Overhanging clouds, which control the point at which the noise pounces down on the unsuspecting ear drum, are hard to control. With further study in the acoustics of the problem involved, it is hoped that a ready and inexpensive solution will be evolved. Then the Materiel Division will be able to run a continuous 24-hour test of both engines and propellers and augment efforts to keep pace with other criteria of National Defense.

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CONTRACT AWARDS FOR AIR CORPS EQUIPMENT

The War Department announced on September 9th the award to the Glenn L. Martin Company, of Baltimore, Md., of a contract for spare parts for YB-10, YB-12 and B-10B Martin Bombardment airplanes in the total amount of $47,857.56.

Announcement was also made of the award of a contract to Manning, Maxwell & Moore, Inc., Bridgeport, Conn., in the amount of $47,310.50, covering the purchase of type B-2 Gage Units, and Type C-6 Thermostatic Assemblies and Data.

A change order on a previous contract was announced to the B.G. Corporation, New York City, covering the purchase of additional Spark Plugs amounting to $23,074.45.

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Majors Ira R. Koenig, Philip Schneeberger and Karl S. Axtater, Air Corps, who up to September 1, 1937, held temporary rank as such, were promoted on that date to the regular rank of Major.

The following-named second lieutenants of the Air Reserve were placed on extended active duty to September 4, 1940, at the Air Corps stations indicated:

Richard Filip Vavrina, of Angus, Okla., at Patterson field, Ohio.

Hiette S. Williams, Jr., of Concord, N.C., at Langley Field, Va.

William Iverson Marsalis, Findlay, Ohio, at Mitchel Field, N.Y.

Louis Matthew Gregory, of Shreveport, La., at Mitchel Field, N.Y.

"FLYING FORTRESSES" IN MANEUVERS ON WEST COAST
By the Langley Field Correspondent

During the month of August, the B-17's again proved their mettle. No less than nine of these popularly designated "Flying Fortresses" were concentrated in California to reinforce the 1st Wing, under Brigadier General Delos C. Emmons, during an interesting sequence of exercises which stressed flexibility of operations as well as the actually demonstrated mobility of supporting ground echelons. The movement west started on July 30th, when the Group Commander, 2nd Bombardment Group, Lieut. Colonel Robert Olds, in his B-17, No. 10, command plane, proceeded from Langley Field to March Field, via Barksdale Field, La., and El Paso, Texas, to complete advance arrangements. Majors Meloy and Haynes, with their respedtive 20th and 49th Bombardment Squadrons, arrived two days later. Major Harold L. George joined his 96th Squadron at March Field after a fast ferry trip from the factory at Seattle, Wash. Six C-33 Transports, under the able command of Lieut. Ott, of the Middletown Air Depot, moved the ground echelon to the West Coast and back, and with only three transports available during the exercises, every exacting requirement from the Group for the transfer of ground echelons was met to the complete satisfaction of the combat echelon. Lieut. Ott and his transport pilots performed an outstanding service to the Group which will long be remembered.

The Group immediately established Headquarters in the 1st Wing Administration Building. Three B-18's from Hamilton Field were attached to us for the duration of the exercises. Bombing training was conducted at Muroc Lake and at sea against aluminum slick targets for approximately one week, dropping 1,000 practice bombs on various types of missions.

After the last mission, Saturday morning, August 14th, the Group Commander ordered all B-17's to be prepared for the return flight to Langley Field. Commencing at 5:30 p.m., Monday, August 16th, all B-17's cleared March Field at 15-minute intervals for their home airdrome, via Barksdale, Wright and Maxwell Fields. Navigators received considerable celestial experience, as the planes had to go over the top, around and through the inclement weather over the Rocky Mountain area. The last two planes to take off encountered such a continuous line of electrical storms near Phoenix, Arizona, that they were forced to return to March Field. The crew of one of the latter, after a few hours' rest, took off at dawn for Scott Field, arriving after a nine-hour flight, thence to Langley Field in four hours. The other B-17 returned via Barksdale Field. All planes which were able to get through arrived at their intermediate destination in from eight to ten hours, and proceeded shortly thereafter to Langley Field. The C-33 transports ferried the maintenance and administrative personnel home on August 17th and 18th. The YOA-5 returned on August 19th.

Summing up the results of this exercise, the Group is more than pleased with the performance of the Air Corps new "Flying Fortresses." Every member of the Group feels that our West Coast mission was most successful and that we have made a vital stride in the defense of our country in the employment of the four-engine bombing type of airplane.

We wish to thank the officers and men of March Field and Hamilton Field for their cooperation and efforts in making our visit to their fields so pleasant, and await the opportunity to reciprocate the hospitality. We also extend our thanks to the officers and civilian personnel at Wright Field for the efficient cooperation in preparing the B-17's with the propeller brakes and navigation instruments in the short time available before the departure of the Group for the West Coast.

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91ST OBSERVATION SQUADRON ACTIVITIES

The 91st Observation Squadron, stationed at Fort Lewis, Wash., has just completed its second active participation in a major war game during this calendar year. The Third Division concentration, held at Fort Lewis in May, 1937, made extensive use of the Squadron, during which time its combat teams and airplanes were divided and assigned to both Red and Blue forces. The intensive cooperative training during this period proved to be of unlimited value to both the ground and air forces.

The Fourth Army Maneuvers, conducted at Fort Lewis during the period August 17 - 31, constituted the largest mobilization in the Pacific Northwest since the World War days. During the exercise, the 91st Observation Squadron was attached to the 41st Division, Blue Force (National Guard and attached units), and the 116th Observation Squadron (Washington National Guard) was attached to the 5th Brigade (Regular Army troops), who simulated the Red forces. This system of organizing the two opposing forces from both Regular Army and National Guard was found to have many training advantages in that it allowed each other to become familiar with the other's capabilities, limitations, and

equipment.

Constant reconnaissance and simulated artillery adjustment during daylight hours, along with several night missions, kept every available combat team in the air an average of eight hours a day during the main problem. Needless to say, all concerned welcomed the news that a truce was declared. "We all feel," says the News Letter Correspondent, "that the maneuver was very instructive and that many 'do's' and 'don'ts' about air observation cooperation were learned by both air and ground forces."

A public anti-aircraft exhibition was held on Sunday night, August 22nd. The 63rd Coast Artillery (AA) from Fort MacArthur, Calif., set up their ground installation, consisting of latest anti-aircraft guns, sound detectors and searchlights on the Camp Murray site. The 91st Observation Squadron sent up five airplanes to simulate a bombardment attack on a powerhouse installation back of the front lines.

Blank ammunition fired from the ground gave the necessary realism to the picture. The exhibition continued by having one plane do fast maneuvers in an effort to evade the searchlights, and then a display of tow target operation by night as used for gunnery practice. An interesting sidelight to the show was the radio communication from the airplane to the ground, which was amplified over the loud speaker public address system and also sent over broadcast station KMO of Tacoma. The attending crowd, estimated at 15,000 people, expressed themselves very favorably regarding the entire event.

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SWEET STUFF FOR AIR CORPS PERSONNEL

Officers and enlisted men at the U.S. Army Air Corps detachment base at the Municipal Airport at Atlanta, Ga., had a "honey of a time" one day recently.

The special treat, great quantities of honey, was provided by Private Frank Heath who, in addition to being in charge of the grounds and shrubbery at the airport, is keeper of the bees. Private Heath, whose hobby is bees, donned his hive-robbing attire and relieved a hive of 80 pounds of honey, which he distributed among the officers and to the mess. He declared that he didn't feel a bit bad about robbing the bees of the honey, because they had filled the frames and there was no other place for them to put the honey they were collecting. He further stated that the bees have to travel the distance between the earth and the moon for every pound of honey, so that the honey he took from the hives represents forty round trips to the moon. Needless to say, Private Heath was a very popular individual at the airport on that particular day.

AIR CORPS PARTICIPATION IN LEGION PARADE

To demonstrate to the veterans of the World War and to the residents and visitors of New York the state of training in the Army Air Corps, the War Department ordered one hundred and fifty modern fighting planes, the pick of its air armada, to converge at Mitchel Field on Monday, September 20th, in preparation for the parade of The American Legion National Convention of Tuesday, September 21st.

At noon, at sunset, and at ten o'clock at night, while the doughboys of 1917-1918 keep step along New York's crowded streets, these planes, commanded and personally led by Major General Frank M. Andrews, Chief of the GHQ Air Force, will parade and maneuver in the air along the route of march.

Seven separate squadrons of the GHQ Air Force, from Barksdale Field, La.; Langley Field, Va.; Selfridge Field, Mich., and Mitchel Field, Long Island, will take part in these demonstrations.

Among the organizations ordered to Mitchel Field for this concentration are included:

Two 18-plane squadrons of the 3rd Attack Group, equipped with Northrup A-17 Attack planes from Barksdale Field;

One 6-plane squadron of Boeing B-17 "Flying Fortresses," 4-engine Bombardment planes of the 2nd Bombardment Group from Langley Field, Va.;

Two 9-plane squadrons of Martin B-10 Bombers from the 9th Bombardment Group, Mitchel Field, L.I.;

One 18-plane Pursuit Squadron, flying P-26 single-seater fighters from Selfridge Field, Mich., and

One 18-plane squadron from the 8th Pursuit Group, Langley Field.

After each demonstration, the planes will return to Mitchel Field. They are scheduled to depart for their home stations on Wednesday morning, September 22nd.

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On Friday, August 20th, the troops of the Hawaiian Department paraded in honor of Mr. Henry Morganthau, Jr., the Secretary of the Treasury of the United States. In spite of the extremely rough air, an impressive showing was made by the Air Corps units which turned out every available man for the ceremony.

The 18th Wing Navigation School, conducted by the Fifth Composite Group at Luke Field, T.H., is approaching the half-way point in its program, and the students can now be found wandering around at night looking for all the constellations for which the Greeks had words. Due to the absence of haze, the students are finding that they suffer for an over abundance of stars, making identification rather difficult.

A FORCED LANDING AT SEA

The Ninth Group Navigation School at Mitchel Field, N.Y., suffered its first forced landing since the inception of the School when Major U.G. Jones was forced to land an OA-4 on the sea south of Montauk Point, Long Island, on August 31st.

With 1st Lieut. Dwight Divine as navigator and a crew consisting of Private, 1st Class, Charles Rosenberg, radio operator; Privates Anthony Perrella and John Gogoj, Major Jones was performing a routine navigation mission over the sea south of Long Island and returning to Montauk Point for a landfall. When approximately 35 miles out, the right motor started vibrating excessively and the switch finally had to be cut. Forced landing signals were immediately transmitted to the 9th Group Radio Station VZ6, though Major Jones attempted to fly on one motor. The plane was landed at 1:50 p.m. on a smooth sea and the crew attempted to taxi toward Montauk.

By putting two men out on the wing, putting the left wheel down, and attaching a sea anchor to the left wing, the engine could be idled at 600 RPM, and some headway was made toward land in spite of a considerable drift towards the east.

Immediately upon receipt of the ZAF signal from Major Jones, the 9th Bombardment Group radio station, manned by Private H.E. Monoghan and Private D.A. McMorrow, transmitted this information to the Navigation School plotting room, operated by Sergeant Ira J. Clenny, 18th Reconnaissance Squadron. Coast Guard Headquarters in New York City was notified and asked to send aid, and two B-10B airplanes were dispatched to locate the Amphibian and stand by until surface craft could arrive.

At this time Captain J.K. DeArmond, Group Communications Officer, assumed charge of communications. Taking off within twenty minutes after receipt of the distress signal, the Bombers, one manned by Captain John P. Doyle, Jr., pilot; Lieut. D.P. Laubach, navigator; Sergeant J.H. Romatowski, radio operator, and Corporal J.J. Draus, observer; the other by Lieut. G.P. Moody, pilot; Captain F.B. Valentine, navigator, and Private, 1st Class, H. Cohen, radio operator, proceeded to the location given in the forced landing report and instituted a search for the disabled airplane.

After one hour and ten minutes, the first crew located the OA-4 in a thick haze, broadcast its location, and was joined by the second Bomber. The Coast Guard was notified of this location, which proved accurate within one mile, both through Group radio and by direct contact from the Bomber.

Too much cannot be said in praise of the rapid and efficient aid rendered by the Coast Guard of this district. The Cutter CAMPBELL was dispatched from Sandy Hook; the ACTIVE, a fast little surface craft of the sub-chaser type, from New London; an unidentified motor surf boat from one of the coastal stations near Montauk Point, and two Amphibians from nearby bases.

Radio contact was established on the Coast Guard frequency of 2760 KCs and maintained throughout the rescue operation.

At 7:10 p.m. Eastern Daylight Time, the ACTIVE, guided by a flare from one Bomber and by low altitude contact by the other, arrived at the location of the disabled amphibian after a fast run from the New London base, part of the way through a dense fog, took off the crew and prepared to tow the crippled airplane back to land. At this time the Bombers were relieved and returned to Mitchel Field. After a night enroute, during which it was necessary to attach a sea anchor to the tail of the amphibian to prevent yawing, the ACTIVE and her tow arrived at the New London Coast Guard base, and an incident, which could have been tragic but for smooth cooperation between all concerned, was marked closed. The principal lesson was further proof of the necessity, in emergency, of adherence to a pre-conceived plan in which all units furnish the service they are best qualified to perform.

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THE 3RD BALLOON SQUADRON AT FORT LEWIS

The 3rd Balloon Squadron, Air Corps, formerly the 19th Airship Squadron, of Langley Field, Va., and Moffett Field, Calif., has finally found its way into the great Northwest. Under the command of Major M.E. McHugo, Air Corps, the 3rd Balloon Squadron is now located at Fort Lewis, Wash.

The organization is rapidly rounding into shape as a balloon squadron and, in spite of the handicaps of operating from an outdoor bed and training new personnel, has been flying a type C-3 balloon daily since June 20th.

Construction on the hangar should be completed about November 1st, and it is hoped to have a new type C-6 balloon at about that time. All personnel are looking forward with a great deal of interest to field operations with this new mobile type of balloon.

Major Elmer J. Bowling, Captain Haynie McCormick and Warrant Officer Robert Lassiter are on duty with the Squadron, and, in addition, Major Clarence B. Lober Executive Officer of the Fort Lewis flying Field, is attached for flying.

THE DEATH OF MRS. GENEVIEVE M. SAVAGE

Believing that the many friends of Major and Mrs. Charles M. Savage who have learned of Mrs. Savage's death in an airplane accident on August 27th, the undersigned has gathered the following facts from the Bureau of Air Commerce and from Major Savage.

Mrs. Savage was flying a Ryan S-T, a metal, low wing monoplane, powered with a Menasco engine, which she had rented from the owner, and was flying to the National Air Races, where she intended to enter the Amelia Earhart Memorial Trophy Race.

On August 26th, Mrs. Savage flew from San Diego to El Paso, stopping at Yuma, Tucson and Lordsburg. She remained overnight at El Paso and departed at 12:25 p.m., September 1st, for Midland, Texas. She told the El Paso airport attendants prior to her departure that she was going to fly by way of Pecos and would land there if shortage of gasoline necessitated. She crashed at 2:30 p.m., near Rui Doso, Mexico.

As nearly as can be determined from reports received from persons on the ground, the following is about what happened: Mrs. Savage flew to the southwest after leaving El Paso in order to reach Pecos over the lowest intervening terrain. After she had been out an hour, apparently either due to a compass error, which her husband believes to have been the case, the country over which she was flying did not check with her map and she turned further to the south. Witnesses state that she made an effort to land on the American side east of Rui Doso, but took off again to avoid striking a fence. Very shortly thereafter she attempted to negotiate a landing on the Mexican side, where the terrain from the air would look much more favorable to landing. The elevation was high, the air was gusty, and the day was hot. This, combined with her earlier experience and her undoubted desire to make a very slow landing, probably caused her to stall and "fall in" from about 100 feet. The plane was a complete wreck, and it is believed that death was instantaneous.

"Gen," as we knew her, had been extremely interested in flying for a long time. As soon as possible she began to take pilot lessons and soon learned to fly. At the time of her death she had about 800 hours in the air and held a transport license from the Department of Commerce. Last year she flew very creditably in the Amelia Earhart Trophy Race, finishing third. She had participated in more than seventeen contests and had always placed among the first three. On her last flight she was not engaged in a race. She was making her way leisurely to the National Air Races, where she had planned to enter the plane, for which she was paying from her personal funds, in the Amelia Earhart Memorial Race.

Due to a cumulation of circumstances beyond her control, she suffered the same fate many another great pilot had been unable to beat before her time.

It should be a matter of great satisfaction to her husband, as it is to her many friends, that she was able to do what she loved best and was participating at the finish in an endeavor close to her heart.

"Gen" Savage has done a lot for aviation; she has left a host of friends in the flying world; up in the Valhalla of flyers they have moved over and made a landing place for a courageous flying woman.

IRA EAKER.

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SCHOOL ACTIVITIES AT CHANUTE FIELD

School activities at the Air Corps Technical School at Chanute Field, Rantoul, Ill., are now in full swing.

On September 1st, the following officers commenced the course in Maintenance Engineering:

Air Corps

1st Lieut. Clayton E. Hughes
1st Lieut. Thetus C. Odom
1st Lieut. Carl F. Demberg
1st Lieut. Charles B. Dougher
1st Lieut. Frank C. Jamison
1st Lieut. Richard M. Montgomery
2nd Lieut. Byron E. Brugge
2nd Lieut. Jack E. Shuck
2nd Lieut. Charles B. Harvin
2nd Lieut. Lawrence S. Fulwider
2nd Lieut. Burton W. Armstrong, Jr.

Marine Corps

Captain Zebulon C. Hopkins

Enlisted classes in the following courses commenced on August 30th:

Airplane Mechanics
Aircraft Armorers
Aircraft Machinists
Aircraft Welders
Sheet Metal Workers
Bombsight Maintenance
Carburetor Specialists
Instrument Specialists
Parachute Riggers
Photography
Propeller Specialists
Radio Repairers and Operators
Electrical Specialists
Air Corps Supply and Technical Clerks.

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Contributions to the columns of the Air Corps News Letter have not been received lately from Hamilton Field, Selfridge Field, Barksdale Field, Moffet Field, Rockwell, Fairfield and Middletow Air Depots. The mission of the News Letter is to cover all Air Corps activities. Please cooperate.

AVIATION ACTIVITIES IN NEW ENGLAND
By Captain Paul L. Smith, Air Reserve

New England would like to sound off in the Air Corps News Letter.

Up here in the First Corps Area we get such a kick out of reading about other Air Corps folks, scattered over the face of the globe, that we thought perhaps our activities might be of interest.

We haven't a great deal to offer, because the First Corps has only the one Regular Army station at Boston Airport, maintained primarily for Reserve training and to give the DOL boys the facilities to keep their hand in.

But New England has cradled many Air Corps officers, now far from home, and many Air Corps officers and enlisted men who once served at Boston might like to hear how things are going up here occasionally. So your brand new correspondent ventures the following:

Colonel John N. Reynolds, Air Officer for the First Corps Area, has been busy with CPX at Camp Devens.

The Boston Airport, owned and operated by the City of Boston, is rapidly becoming one of the finest in the country. With the help of WPA, huge cement aprons have been laid in front of the hangars. They are wide enough and long enough for take-offs and landings when winter comes with its snowstorms. Cement stripes for revving up before take-off are located at half a dozen points around the huge airport. There are three sets of powerful flood lights, and the smoke pot burns constantly.

Captain Richard E. Cobb, Commanding Officer of the Air Corps Detachment at the Boston Airport, has made many improvements in the year that he has been on the job. With the loyal cooperation of an efficient enlisted personnel, he has kept the equipment available for both regular and reserve pilots at all times.

At the present time, the First Corps Area has only three BT-9's, an O-25, a BT-2B and a PT-11 for the six New England States. However, we have been promised a couple of A-17's and a couple more BT-9's.

The enlisted personnel of the First Corps Area Air Corps Detachment at the Boston Airport held Organization Day in August, with a program of sports and what have you. Private Thomas J. Flaherty was given the efficiency award for the year. This award consists of having his name engraved on an attractive plaque, provided by the Air Reserve Association of New England. The plaque was designed and presented to the enlisted men at the Airport last year. It hangs in the day room, and the name of Henri Dionne appears as the winner in 1936. The winner each year is chosen by a committee of three, one member representing the enlisted personnel, while the other two members are the Commanding Officer of the Airport and the President of the Air Reserve Association. The men are proud of the plaque and strive for the award.

Captain Milton M. Murphy, who came to the First Corps Area about a year ago from March Field as the new Unit Instructor for the Air Reserves, has found a warm place in the hearts of the officers. He carried on an interesting and instructive series of lectures all through the winter and spring months, and is now preparing for the coming season. The Reserves meet the first Monday of each month for these lectures, and a business meeting, plus a bit of fun, at the Hotel Lenox in Boston. Visitors are cordially welcome.

Many of the Reserves are taking active duty now, two or three at a time, at the Boston Airport. They have formation, blind flying, cross-country and various missions. Some years the Reserves have been at summer camp on Cape Cod, with training in gunnery and bombing, but so many of the young reserves are now on the air lines, it wasn't feasible to try a camp this year. Not enough could take active duty at the same time.

Major Peter C. Borre, National Vice President; Major Howard W. Nester, President of the New England Department, and Captain Paul L. Smith, immediate past president of the Department, will be delegates to the National Convention of the Air Reserve Association of the United States at San Francisco in September.

Major Chris Ford, former Commanding Officer at the Boston Airport and now on National Guard duty at Cleveland, paid us a visit recently. Some of the boys hadn't seen Chris since he went to the Philippines.

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WAR DEPARTMENT ORDERS

To Bolling Field, D.C.: 2nd Lieut. Wilhelm C. Freudenthal, from Mitchel Field.

To Scott Field, Ill.: 1st Lieut. James A. Ronin, from Randolph Field.

To Charlottesville, Va.: 1st Lieut. Stanley R. Stewart, from Chanute Field, to take a course of instruction at the University of Virginia.

Master Sergeant Marion G. Putnam, Air Corps, is placed on the retired list at Hamilton Field, Calif., September 30, 1937, with the rank of Captain, under the provisions of an act of Congress, approved May 7, 1932.

Second Lieut. Joseph B. Parker, of Atlantic City, N.J., has been placed on active duty at Mitchel Field, N.Y., to September 13, 1940.

91st Obs. Sqdn., Fort Lewis, Wash., Sept. 1.

Second Lieut. John P. Stewart, Air Reserve, accompanied by Mrs. Stewart, reported for duty with this unit on August 18th, after having completed a two-year tour of duty in the Hawaiian Department. Lieut. Stewart was immediately set to work when it was discovered that he was a radio wizard, and he performed a commendable job of straightening out the communications problems that always arise when working with unknown ground forces.

Death stalked the hospital (veterinary) and conquered an old favorite of the Squadron. "Queenie," a famous hunting dog, which never hunted, died while awaiting the time she was to be shipped to her master, Lieut. Colonel F.E. Galloway, our former commander, who was enroute to station at Fort Leavenworth. The Squadron expresses its sincerest sympathies to Colonel Galloway on the loss of his loved one, and hopes that Queenie may find the quail in dog heaven which she could never find on earth.

Kelly Field, San Antonio, Texas, Sept. 7th.

Two additions to the commissioned staff of the Air Corps Advanced Flying School have been made recently. First Lieut. David N. Crickette arrived from the Hawaiian Department and has been assigned to Headquarters of the Advanced Flying School and detailed as flying instructor in the Attack Section. First Lieut. Harry S. Bishop, also from the Hawaiian Department, has been assigned to the 63rd School Squadron, Air Corps.

Lieut. Col. Wolcott P. Hayes, formerly stationed at Kelly Field, was a visitor recently as he stopped in on a cross-country navigation flight. Colonel Hayes is now on duty with the National Guard at Atlanta, Ga.

Captain Luther S. Smith, formerly Operations Officer and Pursuit Instructor at Kelly Field, visited friends and relatives in San Antonio and Kelly Field while on leave. Captain Smith is on duty in the Office of the Chief of the Air Corps.

3rd Balloon Sqdn., Ft. Lewis, Wash. Sept. 7th.

Upon arrival at Fort Lewis, the Squadron found that they had come just in time to place a baseball team in the Post League. Starting to play, the team went undefeated through the entire season. In order to claim the championship, the 3rd Balloon Squadron again played the next two best teams, 9th Field Artillery and 3rd Tank Company. The Lighter-than-Air boys conquered the 9th F.A. in two straight games, then proceeded to win from the Tanks in a three out of five-game series.

Under the command of Major M.E. McHugo, an ardent baseball fan, the Squadron supported the team 100% throughout the entire season. After winning the deciding games of the series, the "Top-Kick" invited the entire team to have one on him at the NCO's Club. This turned out to be quite a party, and when it ended it looked more like an Organization Day in the Squadron. It is on the grapevine that the Squadron intends to throw a party to show its appreciation to the boys of the ball team for their efforts on the diamond. This party will be held at American Lake, where the boys can dance and swim throughout the entire day.

The Squadron is now pointing toward the basketball trophy, which will be a worthwhile award to any day room. With a veteran team to take the court, the Air Corps boys intend to make it plenty tough on any team that tries to stop them.

Langley Field, Va., September 4th.

20th Bombardment Squadron: The Squadron is pretty well represented in the Intermural soft ball league with two teams entered.

The following new assignments were made to this organization during the month of August: Master Sergeant Robert Duke, Privates Oscar W. Newell, Carl W. Baum and Eldon J. Bushaw.

49th Bombardment Squadron: This Squadron received the following new assignments during the month of August: Privates Darwin C. Middlekauff, Henry C. Martin, John Kowalczik and Harold E. Pennington.

96th Bombardment Squadron: During the month of August, the following-named men of this organization were promoted to the grades indicated: Sergeant Shilling to Staff Sergeant; Corp. Mogford to Sergeant; Private, 1st Class, Beldin to Corporal.

New assignments to this Squadron during the month of August were as follows: Captain Darr H. Alkire, Lieut. William F. Day, Privates Jean E. Shields and John J. Zuba.

Hqrs. and Hqrs. Sqdn., 2nd Bombardment Group: Captain Davies, having been transferred for duty with the Air Base Force, was relieved from assignment to the Squadron, and Captain Ivan M. Palmer was assigned and assumed the duties of Squadron Commander.

21st Reconnaissance Squadron: The Squadron soft ball team has been very successful in its initial ventures and is looking forward to having a winning team for the season.

New assignments to this Squadron are as follows: 2nd Lieut. Charles W. Bicking, Privates David J. Reich, Forrest E. Smock, Daniel Schappel and Donald D. Waldorf.

San Antonio Air Depot, Duncan Field, Texas.

Major John M. Clark, Depot Supply Officer, with Staff Sgt. Tyler as co-pilot, made an interdepot transfer service trip to the Fairfield and Middletown Air Depots and return, August 25-29. Major Elmer D. Perrin, Chief Engineering Officer, and Lieut. C.B. Collier, Adjutant, also made an interdepot transport service trip to the Rockwell, Fairfield and Middletown Air Depots and return, August 26th to September 1st.

First Lieut. Thomas B. McDonald, Air Corps, with Mrs. McDonald and their infant son, joined this Depot on September 1st, after a month's leave of absence. Lieut. McDonald was transferred here July 31st on his graduation from the Air Corps Engineering School, Wright Field, Ohio, and was assigned to duty as Assistant Depot Supply Officer.

Lieut. Tracy K. Dorsett, Air Reserve, pilot, with Staff Sergeant Paul S. Blair, co-pilot,

and Corporal Elo Hansen, Mechanic, as the crew of one C-33 airplane of this Depot, and Tech. Sgt. Paul B. Jackson, pilot; Master Sergeant C.P. Smith, co-pilot, and Staff Sergeant Paul A. Simcoe, mechanic, as the crew of the Depot's other C-33 Transport, all of the 3rd Transport Squadron, returned August 21st from participation, since July 30th, in transporting personnel in the recent Joint Coastal Air Defense Exercises in California.

Nichols Field, P.I., August 9th.

Although busy as bees, relaxation for the 28th Bombardment Squadron is not neglected. Officers and men play squash, soft ball and golf with a vengeance, and the Squadron swimming team is high point team in the local league as the result of three recent meets with teams from Sternberg General Hospital and the 31st Infantry. If the rain subsides in time to enable them to obtain some practice, the Nichols Field soft ball team will enter the regular season with a goodly sprinkling of 28th pilots ready to uphold the honor of the Air Corps in the local league.

Clark Field, Pampanga, P.I., August 9th.

Our Flight Surgeon, Lieut. Colonel C.L. Maxwell, was recently ordered to Nichols Field, and we are awaiting his successor on the November transport.

Lieut. E.W. Maschmeyer, of this Squadron (3rd Pursuit) was detailed as assistant liaison officer to the U.S. High Commissioner.

The Officers' Bowling Team last week defeated the Artillery Team and expect a successful season. The Enlisted Men's Tournaments have just started, and a winning team is predicted.

Mitchel Field, N.Y., September 9th.

The 18th Reconnaissance Squadron of Mitchel Field turned out in full force for Organization Day at Duffield's West Park Beach, Lake Ronkonkoma, Long Island. The event was to properly commemorate the reconstitution of the Squadron on September 1, 1936, as a long range reconnaissance unit to be attached to the 9th Bombardment Group.

The afternoon was spent with athletic pursuits at which Captain W.C. White, the Commanding Officer, was an outstanding light as a pitcher at soft ball, and Sergeant "Farmer" Byrnes put away all comers at barnyard golf (known in polite circles as quoits). Many of the men took to the beach, proving the semi-amphibious character of the outfit.

At the close of the afternoon a banquet was served at which the all-round capabilities of the Squadron were again proven. PFC "Shandu" Makepeace gave an impromptu magic performance that baffled most of the audience. All members present performed a disappearing act with the fried chicken, and several quartettes rendered "Sweet Adeline" with fervor and gusto, if not with finesse. Captain J.P. Doyle, Jr. who commanded the Squadron when it was first reorganized, said a few words about the early struggles of the outfit and its rapid progress to its present high state. With short responses by other officers and some of the men, the Squadron returned to Mitchel Field a boisterous yearling.

Maxwell Field, Ala., September 8th.

We are looking forward to several increases in grades and ratings within this Squadron in the near future under the new additional allotments of grades and ratings for the Air Corps, which became effective on September 1, 1937.

"Speedy Higdon," our latest speed demon, secured a three-day pass to visit Atlanta, Ga., recently. He reached Atlanta within an hour after departing on his pass, and it took him the remainder of the three days to get back to Maxwell Field. He came to the Orderly Room after returning and wanted to know if he would be reimbursed for his expenses on the return trip, since he had to finance his own way back. He said he thought they should do this since they took him up where in an airplane and that he had to manage to get back on his own.

Master Sergeant Lessels, transferred from the 6th Pursuit Squadron at Wheeler Field, Schofiel Barracks, T.H., reported for duty with this organization as replacement for Master Sergeant Lunday, who was transferred out of the Squadron in May, 1937. We welcome him to the Squadron and trust that he will be as well pleased here as he was at his last station, where he remained for overfive years.

A football team is being organized here in the form of a Post Team, something that Maxwell Field has not heretofore supported, but it appears from the turnouts for the practices that a snappy team will be placed on the field this year to compete with civilian as well as nearby army teams. Headquarters Squadron is well represented in the practice line, as they always are in any form of athletics on the post.

Staff Sgt. Howe, 3rd Weather Squadron (attached to this Squadron) departed on August 26th for detached service at Patterson Field, Ohio, to pursue a course of instruction thereat in connection with duties of the Weather Bureau of the Air Corps.

Private, 1st Class, Burt, also of the 3rd Weather Squadron (attached to this Squadron), purchased his discharge on August 31st to accept a position with the U.S. Weather Bureau, and has been placed in charge of a new station just organized here in Montgomery, Ala., at the commercial airport.

Private, 1st Class, Pilster; Privates, A.M. 2d Class, Anderson and Boyd, and Private, 1st Class Martin, of the Squadron, have all been discharged and reenlisted to fill their own vacancies within the past ten days.

Private, A.M. 2nd Class, Thomas, with the Post Radio Department here, secured his discharge by purchase on August 28th in order to accept a position with the Department of Commerce Airways as a radio operator, and is now on duty at Smiths Grove, Ky.

Privates Waggoner and Worthing, of the 13th Air Base Squadron, and Private Donnell, from the 91st School Squadron, were transferred to this Squadron on August 31st.

Chanute Field, Ill., August, 1937.

During August, the post baseball team defeated Fort Sheridan, 9-4; Buckley, 8-3; 2681 Co. CCC, 9-1; Buckley, 19-2 and Fort Harrison, 12-7. The team lost to Fort Harrison, 13-6; Manhattan, 4- and Shelbyville, 6-4. The post team was organized upon the completion of the Inter-Squadron Baseball League in June.

Bolling Field, D.C., September 18th.

Bolling Field's crack baseball team recently annexed the championship of the Federal League of Washington, D.C., by defeating in successive games the Bureau of Engraving and Procurement Division teams of the League. By these victories, Bolling becomes eligible to represent the Federal League in the elimination tournament for the city-wide championship of Washington. In this tournament, Bolling will be matched against the winners of the seven other leagues in the city and will, therefore, meet the best teams that the Capital City can produce. Plenty of action is expected, and the Bolling contingent is out to meet and defeat the best the city has. After the city championship series, the team will wind up a very successful season in a game with the Navy team from the Anacostia Naval Air Station.

The first attempt to run a Track and Field Meet at Bolling Field has captured the interest of practically every enlisted man at the station. Under the supervision of the Commanding Officer, Lieut. Colonel Ryan, an interesting program of events has been drawn up which includes, in addition to many regular track and field competitions, a number of events providing fun for both the spectators and the contestants. Included in this list are the sack race, shoe race, potato race, three-legged race and many others. Lunch will be served on the field, following which Bolling's championship baseball team will engage the Naval Air Station in the final game of the season. A big turnout is assured, and at the rate entries have been coming in it is anticipated that several heats will be necessary in each event.

An outdoor inter-squadron volley ball tournament is now in progress at the station and is providing some strong competition between the squadrons and platoons represented. At the present time the 1st Staff Squadron and the 1st Platoon of the 14th Air Base Squadron are tied for first place.

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

The 4th Observation Squadron returned to Luke Field after two weeks' duty at Bellows Field, Waimanalo Military Reservation. During this period, pistol firing and ground gunnery training for all squadron personnel was completed. In spite of limited ammunition allowances, qualifications were above average. The recreation program included softball, horseshoes, volley ball, swimming and, on the 25th, a farewell party.

72nd Bombardment Squadron: For the past several years, the "Battling Seventy-Second" has more or less taken it on the well known "chin" as far as athletic competition was concerned. Fate has taken a hand, however, and the sun is beginning to shine. This Squadron's Tank stars splashed their way to an undefeated Swimming Championship in the inter-squadron swim meets. With the softball season in full swing, we find the Gold League team undefeated to date. As it is a bit too early for predictions, we will say we have fine prospects of achieving the top rung. Our worthy opponents, the 50th Squadron, have the team to stand in the way of a clear title, and everyone is looking forward to a real battle.

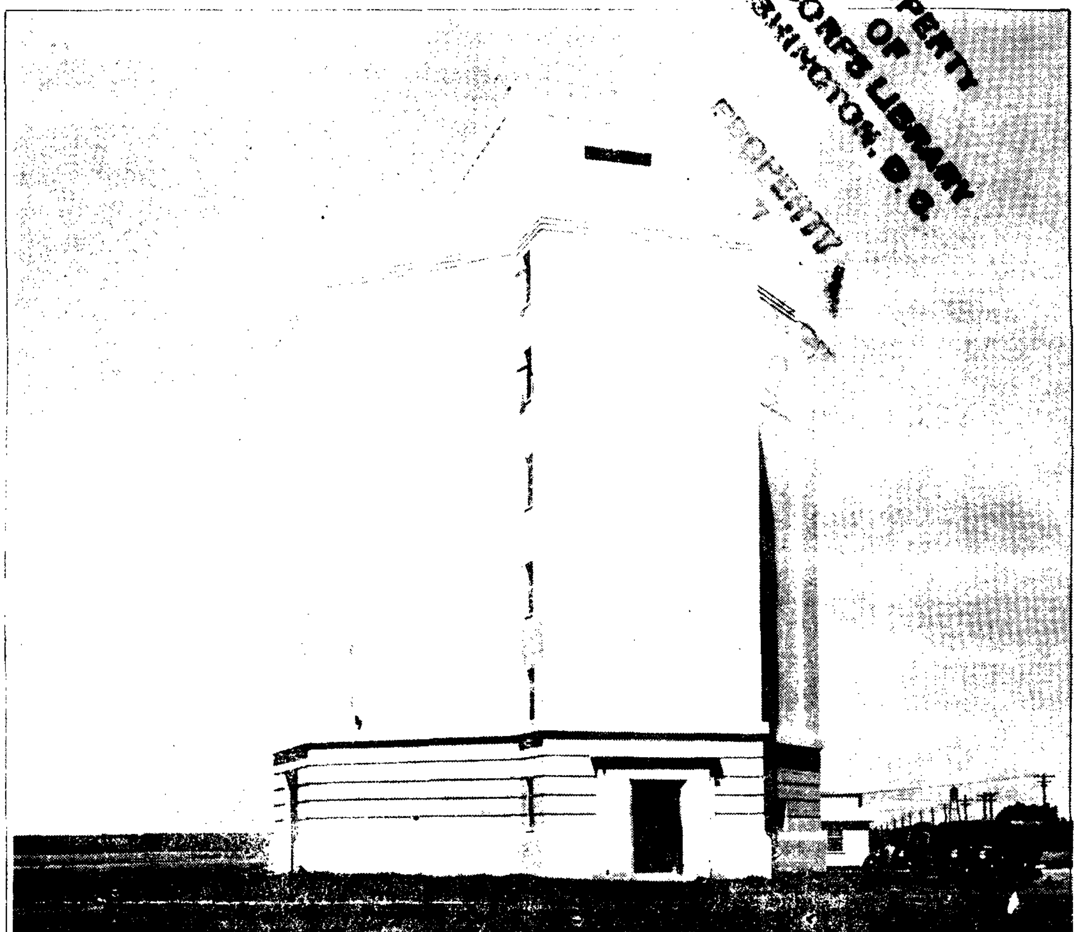
It had been noted that our men were going around with a "hungry countenance" in the AM along about 9:00, so the sandwich and coffee wagon was reinstalled. After the "first call," the smoke cleared and it was found that someone actually had salvaged a sandwich, and that the dark fluid on the floor was coffee. The line forms on the right, and no pushing.

65th Service Squadron: The members of the 65th Service Squadron have received quite a bit of juggling around in the last year. On September 1, 1936, 89 men of this organization were on duty with the Hawaiian Air Depot. September 1, 1937, finds this number reduced to four men as a result of enlisted personnel being replaced by Civil Service employees. Best of luck to the civilians, and we hope they find duty in the Depot to be as pleasant as it was for the soldiers.

Losses from the Squadron during the month of September include one officer and six enlisted men. Second Lieut. Clarence W. Gilkes, Air Reserve, Squadron Adjutant, is returning to the continental United States on leave. Master Sergeant John Tassock is returning on the USAT REPUBLIC for reassignment to Barksdale Field, La. Privates, 1st Class, William J. Kelly and Andrew S. Pienczykowski, and Privates John D. Borowski and Earnest C. "Contact" Ellenburg, having completed their tour of foreign service in this Department, will also be on the REPUBLIC when she leaves Honolulu on September 10, 1937.

Staff Sergeant Paul M. Lindsay, who has been reassigned to this Squadron from Fort Leavenworth, Kansas, will arrive on the REPUBLIC on September 4, 1937. We hope that Sergeant Lindsay finds the climate, beaches and rainbows of Aloha Land more pleasant and enjoyable than the dust of Kansas.

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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THE ARMY IS BEHIND ITS AIR CORPS

By Major General O. Westover, Air Corps
Chief of Air Corps

Some enthusiastic air-minded men in this country, both within the military service and without, have spared no pains to criticize the Army and the War Department for the way in which it has handled the development of military aviation. Some of these critics are professional agitators, men who have learned one of the cardinal principles of human interest and that is that all men love a fight - that controversy is a sure way to flag attention and catch popular fancy. For the most part, however, those who have been disgruntled at the way the air arm has been handled are simply misguided, misinformed. They are sincerely interested in an adequate and well balanced national defense. They have noted the great strides the air industry is making; they have looked across the water to European powers with vast air armadas and have jumped to the hasty conclusion that we are not doing so well at home.

Full well do I realize that nothing can be done to stifle the loud cries of the soap box variety of skilled agitators. They live by their words; their continued existence in the public prints depends upon the continuation of their attacks. They must flay somebody, and so the Army does not escape; it comes in for its share. But the others, those whose dissatisfaction results from misunderstanding of the facts or from incorrectly drawn conclusions reached from but a partial or hasty glance at the facts are worthy of attention. For their benefit I wish to present a clear review of what the Army has done to foster aviation, to show why it has not done more, and finally, to outline what its leaders have in prospect as the immediate program for further progress in the Army Air Corps.

I have heard the claim made, to begin at the beginning, that the Army, whose duty it was to realize that this new machine, the airplane, must have great influence on warfare, did not early arrive at that realization, did not recognize that the genesis of human flight must revolutionize if not the army at least the method of conducting wars. The records do not support that charge. As early as 1908 the Signal Corps of the Army drew up the first specifications for an Army plane and let the world's first contract for a military plane.

Again, it has been said that the Army, from 1914 to 1917, with the whole of Europe aflame, did not awake to the possibility that America should build up an effective Air Corps and be prepared for air fighting. In this connection two points are of interest: In the first place, no one in authority, not even the President, as late as 1916 believed we would be forced to enter the World War. We were a neutral nation, far removed geographically and by interest from the causes and reasons for the mad blood letting overseas. But here is the main point: The Army leader charged directly with the development of aviation at that time, the Chief Signal Officer of the Army, made a strong and an urgent appeal each succeeding year for funds with which to build up the Army's flying forces. Just the other day I was reading over the reports of the Chief Signal Officer for the years 1911 to 1916, and I found that every year without exception he plead for more funds, for more personnel, for more planes. For the sake of historical accuracy and human interest I want to quote briefly from these reports of General Allen, Chief Signal Officer, in his annual report to the Secretary of War:

"The foreign nations have the following personnel now engaged exclusively in military aeronautics:

England . . . 25 officers and 346 men
France . . . 24 officers and 432 men
Germany . . . 20 officers and 465 men

The United States has at present a force of three officers and ten enlisted men to compare with the above figures. With the approval of the Secretary of War, an estimate of two hundred thousand dollars was submitted to Congress at its last session to make a beginning in the subject of proper aeronautical equipment and construction for the American Army. <u>This appropriation, however, failed to be authorized</u>, which fact placed this office at a disadvantage at a critical time."

V-7498, A.C.

That was General Allen, Chief Signal Officer of the Army, speaking in 1908 in his annual report to the Secretary of War.

In 1909 he said:

"All first class powers, except the United States, are systematically providing themselves with aerial fleets, Germany and France being notably in the lead. The United States does not, at present, possess a modern aeronautical equipment and it is believed that a systematic plan of development of this military auxiliary for national defense should be inaugurated without delay."

In 1910 here are some sentences from his plea for sufficient funds to give the U.S. some aviation:

"It is evident the United States should, without delay, make due provisions for carrying on aviation work for the various governmental departments interested and to extend the large number of American inventors and manufacturers at present devoting themselves to aerial navigation.

Aerial navigation has taken hold of the entire civilized world as no other subject in recent times, and represents a movement that no forces can properly check.

For military purposes aviation is a subject which we must seriously consider, whether we wish to or not, and the sooner this fact is accepted and measures taken to put us abreast with other nations, the better it will be for our national defenses."

That sounds so much like a statement in one of my own annual reports of recent years that I might easily be charged with plagiarism. It all boils down to one crucial fact - funds for the Army, be it for food, shoes, cannon or airplanes, are provided by Congress. The War Department does not have a limitless source on which it can draw drafts at will for any project which suits its fancy. These funds have been carefully budgeted for a long time. First, we make up estimates, then we defend these estimates item by item before sub-committees of the House and Senate Appropriations Committees. The legislative fathers then decide which of these items we can have money for and which we cannot. The War Department can only represent as strongly as possible all its needs, then take such funds as are allotted and spend them as appropriated, for the purposes given.

No, this charge will not stick; all the records year by year since 1908 are filled with pleas to Congress by military leaders in an effort to secure additional funds for its flying arm, for more men, for more planes, for additional housing, technical buildings, and ground installations.

Now, let us look briefly at what the War Department has done with the funds which have been allotted. Let facts and figures speak; let history be our witness.

The American Army bought and developed the first military airplane in the world. Very soon thereafter it organized the first aerial squadron, equipped it, and used it in connection with Pershing's Punitive Expedition. The World War brought an understandable inflation to Military Aviation in all the combatant nations. Since the European powers were engaged in that conflict for three years before the United States came in, it is perfectly clear why their air components developed first and faster, and why we, when we did enter the struggle, employed much of their materiel and profited by earlier experiments. This thought, however, should not be overlooked: In 1917, beginning with but a handful of Army flyers, and all of those very young, we were able to supervise the greatest mass expansion which ever occurred in any branch of the military services. In one feverish year and a half, the Army was able to procure more than 11,000 airplanes and 32,000 engines and train over twenty thousand flyers. I believe none will say that our fighting squadrons did not acquit themselves with complete credit to our nation in the air battles over France and Germany. Since the great expansion of military aviation in this country, from April, 1917, to November 11, 1918, was an unnatural growth made necessary by the frenzy incident to a great war, I shall pass over that period with but this hasty reference.

The period immediately succeeding the war years was a difficult one, indeed. It would have been a difficult period had some separate agency had control of military aviation. It was a period of discouragement for Army aviation. That is because we found ourselves with a great surplus of airplanes and engines which could not be junked but had to be used up at the peace-time rate in the post-war years. Having this great surplus, it was not apparent to the "fiscal fathers" why we should have new appropriations. Consequently, funds were cut to a cruel minimum. We had to discharge a great number of our officers and thousands of our enlisted mechanics, and could buy but few new planes until the old ones were worn out. Here, however, is one vital fact: The War Department, realizing that this condition existed, met it sturdily; but it did one other all-important thing. It laid the foundation for aviation experimentation and development. It created at Dayton, Ohio, an engineering division and allotted a great proportion of available funds to experimentation and development. That is the most important aeronautical step which has occurred in this country. That institution, now known as the Materiel Di-

vision, Wright Field, has developed into the greatest aviation experimental center in the world today. It has been largely responsible for the fact that the United States Army has fighting airplanes and engines the equal, and in many cases the superior, to those found elsewhere in the other nations of the earth, many of whom have been trying the independent Air Force experiment.

Not only was this far sighted policy of the War Department, in establishing the engineering division, to have such far reaching consequences in military aviation, but it was the greatest boon to civil aviation which occurred prior to the Lindbergh flight. Many of the developments originated at Wright Field and fostered and supported by Army experimental funds, have been taken over in whole or in part by the civil aviation industry, and have been responsible to a large extent for the progress which has been made in that field. I shall cite a few examples. The United States leaped to the forefront in world civil aviation largely because of its all-metal airliner construction. The first all-metal airplane in the world was built under the guidance and supervision of the Materiel Division at Wright Field, the Army O-19. Modern transport aircraft, with present tremendous speeds, owe their performance virtually to four things: First, one thousand horsepower light-weight airplane engines. Second, metal, low-wing monocoque construction; next retractable landing gears and, finally, adjustable pitch and constant speed metal propellers. Everyone of these inventions, discoveries or improvements is directly traceable in its initial inception and original trials to the Army Air Corps experimental engineering division.

Not alone in the experimental field has the Army led the way to the present air pinnacle. It is early realized that one of the essential components of any Air Force is a group of competent pilots. It therefore established at San Antonio, Texas, the Air Corps Training Center, known as the "West Point of the Air," which is recognized the world over as a model for aviation pilots' training. Here again, not only have Army flyers been trained, but the Army generously trained a surplus which could go to pilot the civil airlines. That the civil airlines were quick to profit from this reserve of trained flyers is attested by the fact that over fifty percent of the pilots who are flying great commercial vans today were Army trained.

I spoke before of the doldrum years, 1919 through 1926. During that time there was little civil aviation industry, aside from the few manufacturing plants, in this country. There was no civil demand for airplanes to keep these factories going. The Army wisely placed all the orders it had money for with these factories and supported their skilled personnel and aeronautical engineers throughout the lean years when there was nobody else to do it.

Military leaders recognized from the beginning that if aviation was to grow there must be created a public interest in it. The Air Corps began in the early days to create and stimulate this interest, as witness whereof I need only mention the first flight around the world by Army pilots in Army planes; the first transcontinental non-stop flight across the United States, by Army pilots, in an Army plane; and the first flight across the continent in the daylight of one day. In this same connection the Army sponsored racing planes and often led the world in flying speeds. It also realized the importance of altitude flying, increased interest in which is now evidenced by the pressure cabins and the stratosphere flights. Army pilots have set world's altitude records both for airplanes and balloons. It was not until 1927 when, under the stimulus and reawakened interest in aviation incident t Lindbergh's and other oceanic flights, the War Department realized it could turn over to civil aviation a large part of the work incident to making America air-minded. Believing that it would tend to retard rather than develop civil aviation for the Army to continue in the racing field, it wisely stepped aside and left that field and many of the more spectacular record-setting exploits to civilian pilots and plane builders. In many other fields connected with aviation from its earliest date, the Army played a vital part; it flew the first air-mail and transferred to the Post Office Department the planes and pilots to continue the genesis of that system. It developed maps, laid out and flew the first model airway, designed and installed the first radio beacon, developed blind landing apparatus, and Army pilots made the first instrument landings, indicating the feasibility of defeating fog and heavy weather. That this experimentation and progress under the Army is still under way is evidenced by the fact that only last week Army Air Corps officers and engineers at Wright Field demonstrated a new apparatus and system whereby planes can be landed automatically without the aid of human hands. This I consider the last great step in eliminating flight hazard incident to zero visibility.

I think there is no better answer to the carping critics who have charged the War Department with mismanagement of things air wise than is contained in the following two tables. The first shows how much of the annual Army appropriation has been devoted to aviation. The year 1911 was taken as the beginning, for in that year for the first time appear

direct appropriations expressly for aviation development and for aviation subjects. The year 1916 was included because it is the last year before the war. The World War years were left out because, as everyone knows, they represent an unnatural and abnormal expansion for all military budgetary items and in no way reflect anything except a frantic desire to win the war by buying, annexing or appropriating everything in sight which might conceivably lend pennyweight toward that end. The year 1925 has been included as a representative one in the mid-period between 1921 and 1932. After 1932, each year is shown as being of interest both because of being close at hand and because it shows the modern trend, expresses the influence of the depression and gives a basis for comparison with the appropriations of the past year:

Comparison of Expenditures of the War Department Military Activities and the Air Corps, direct and indirect, for the following Fiscal Years:

Fiscal Year	War Department (Military)	Air Corps Direct and Indirect	Percent
1911	$ 117,650,265	$ 25,000*	.02
1916	122,391,895	801,000*	.65
1921	292,886,375	32,332,907	11.04
1925	244,688,447	28,965,381	11.84
1930	327,363,054	59,981,778	18.32
1932	344,610,560	72,491,915	21.04
1933	293,314,497	57,755,448	19.69
1934	243,329,151	53,420,614	21.96
1935	273,485,712	68,365,771	24.99
1936	382,654,083	85,836,332	22.43
1937	394,095,800	96,872,333**	24.58
1938	393,460,400	101,851,424**	25.89

*Appropriated ** Estimated

Next I include a table which illustrates for personnel what the preceding table shows for fiscal affairs. It is largely self-explanatory, but it shows a graphic picture. It demonstrates just how much of its total personnel strength the War Department has seen fit to devote to this air arm which it is so often accused of starving and neglecting. After careful study of these tables, I feel that those who have been hostile toward the Army's sovereignty over military flying will feel much less sure of their grounds.

For the benefit of the air enthusiast who is not a member of some one of the military services, I wish to say that many of the increases in personnel which the Army has allowed the Air Corps have been made at the expense of some one or several of the older arms. Often it has been necessary to render inactive or disband established battalions of Cavalry, Infantry, etc., to make it possible to provide for those additional Air Corps increments.

I feel that the War Department need not feel ashamed of the showing it has made in the air, nor fear just criticism for the way it has expanded the funds which have been made available for aeronautical purposes.

That the Executive Branch of the Federal government has continually striven to arrive at just and sound conclusions concerning its air arm and its management, is demonstrated by the fact that since 1919 more than thirteen separate and distinct boards, committees or commissions have been detailed or set up to investigate some phase of military aviation.

In 1926, the report of one of these boards, the Morrow Board, resulted in the enactment into legislation of the Air Corps Act of June 26, 1926, which provided for 1830 airplanes as the number which the Army Air Corps should have. Much criticism has been hurled at the War Department for not having carried out that program on time. Here again I must point out that appropriations, not authorizations, govern the amount of money which the Army can spend. Insufficient money was appropriated to buy the planes to meet that five-year program which was authorized in 1926.

In 1934, again sensitive to the demands being made from many sources that the air arm be augmented, the President appointed a commission, headed by the Honorable Newton D. Baker, to study the needs of the nation and make recommendations accordingly. This commission, after long and careful study, named 2320 planes as the proper figure to give this country adequate military air defense. In an effort to reach that agreed total more that one thousand planes were contracted for in 1937; funds have been appropriat-

TABLE OF COMPARATIVE STRENGTH

Year (June 30 each year)	Total Army Strength		Largest Branch Strength (Infantry)		Air Corps Strength		Comparison of Size Air Corps to Other Combat Arms
	Officers	Men	Officers	Men	Officers	Men	
1911	4,281	73,454	1,471	24,878	6	60	-
1916	4,843	97,013	1,607	34,313	65	339	Last
1921	12,952	206,274	3,427	39,278	996	11,073	Last
1925	12,203	115,132	2,630	40,859	873	8,758	No. 5
1930	12,024	117,797	2,303	41,259	1,203	12,034	No. 4
1932	12,108	113,417	2,260	37,913	1,254	13,369	No. 4
1933	12,227	115,390	2,348	39,049	1,282	13,499	No. 3
1934	12,212	117,517	2,358	39,476	1,299	14,316	No. 3
1935	11,979	118,727	2,292	39,432	1,303	14,720	No. 3
1936	12,069	146,826	2,271	50,477	1,359	15,640	No. 4
1937	12,269	158,626	2,274	54,707	1,408	17,286	No. 4

ed for the procurement of an additional 700 in 1938 and the budget estimates for 1939 include money for 700 more. The Secretary of War, the Honorable Harry H. Woodring, but recently said that if we continue at our present rate, we shall arrive at the 2320 plane figure by 1940.

Here is a factor which often, I believe, has worked to the great detriment of the Army. Individual officers of the combat arms have grown so engrossed in the success and progress of their own branch that they have lost sight of the fact that all the branches are but members of a military team. It is being demonstrated on the battlefields of three continents in very recent times that battles are won and successful wars are fought not by the Infantry, the Artillery, nor the Air Corps, etc., but by teams composed of all these combatant arms ably supported by the supply and technical services. Without any one of these essential team members no fighting force can cope successfully with modern battlefield conditions.

Years ago, I am told, there was a feeling in some quarters, when any new arm or service was created, that it was an interloper, that it was stealing the money away from the older branches. That feeling undoubtedly was a holdover from the time when we had but a small standing army - few regiments at widely separated posts. The experiences of the World War should have washed away the last vestige of such a feeling. Thinking military men now realize that military strength cannot be counted in squads, troops, squadrons or even in divisions. As a matter of fact, man-power may not now be the true measure of military strength. Transportation, manufacture - all industry must be organized and mobilized to achieve a modern victory.

The point I wish to make is that, when men today, anywhere in the world, go to war they go primarily not as infantrymen, artillerymen or flyers, but as working members of the fighting team of combined arms. We of the branches must not let our ardour for our corps and services lead us into attacks upon any of the other branches. What chances of victory would a football team have if, in the midst of a touchdown drive, the quarterback and the full back suddenly quit the main effort and fell to fighting each other to settle some personal difference? Branch enthusiasm must never be allowed to engender branch animosities. If for the moment the requirements of existing conditions seem to make one branch more essential than the others, or indicate its increase in strength, we should remember that no wheel of fortune is so fickle as the wheel of the fortunes of war; the processes and methods in no art change faster. All of us in the not distant future may be overshadowed by some now non-existent arm or service which modern invention or discovery may elevate to prime importance. Who can say that a death-ray, a microbe corps or some other now visionary new arm may not rise up to overshadow us all?

We of the arms and services must bear well in mind that there sits at the seat of government a group of men who have impartially at heart the well being of all of us and whose perspective is not clouded by too close an association with any one element. Their program and plans are more than likely to have good reason and sound common sense in strong support. It behooves every intelligent military man to find out what that program is and support it without equivocation.

For several years now I have been in a position to be conversant with the War Department's plans and policies for military aviation and I can say positively, I cannot emphasize too strongly, that the military leaders are fully conscious of what the nation needs for air defense and they are sparing no effort to provid it.

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MAINTENANCE FLIGHT OF ADVANCED STUDENTS

Two echelons of the present class at the Air Corps Advanced Flying School, Kelly Field, Texas, are now on their maintenance navigation flight. They are composed of one-half of the Pursuit Section and one-half of the Attack Section.

The first echelon of the Pursuit Section is commanded by Major John V. Hart. His assistants are 1st Lieut. Nelson P. Jackson, 2nd Lieuts. William Eades and Chester L. Sluder. This echelon is composed of the following students: 2nd Lieuts. W.L. Kimball, W.M. McBee, C.M. McCorkle, C.M. Parks, T.C. Rogers, V.R. Shores; Flying Cadets W.M. Miller, M.L. McNickle, W.G. Miller, C.T. Olmsted, J.H. Paul, A. Peterson, F.W. Rogers, F.O. Rindon, A.P. Tacon, J.F. Taylor, H.A. Torrey, D.L. Wilhelm.

This echelon is following the itinerary - Kelly Field to Abilene, Lubbock, Texas; Fort Sill, Okla.; Amarillo, Texas Roswell, New Mexico; El Paso, Marfa, Dryden, Kelly Field, Texas. Students will stop over one day at Biggs Field (El Paso) for maintenance of airplanes.

The first echelon of the Attack Section is commanded by 1st Lieut. John H. Ives, whose assistants are 1st Lieuts. Troup Miller, D.N. Crickette and H.S. Bishop. This echelon is composed of the following students: 2nd Lieuts. W.E. Covington, Jr., R.D. Gapen, G.P. Champion, W.G. Lee, Jr., F.R. Bell, R.H. Carmichael, J.J. Nazarro, F.R. Terrell, J.R. Kelly; Flying Cadets A.C. Agan, E.R. Barrett, R.D. Callaway, A.C. Carlson, Jr., C.W. Field, E.B. Fletcher, F.B. Gallagher, C. Harper, C.J. Heflin. They are following the itinerary Kelly Field

Dallas, Midland, El Paso, Texas; Albuquerque, New Mexico; Amarillo, Texas; Fort Sill, Oklahoma; Dallas, Texas; Barksdale Field, La., Kelly Field, Texas, and any necessary intermediate points between these places. They will stop over one day at Fort Sill for maintenance of airplanes.

The Observation Section, commanded by Captain Russell E. Randall and assisted by 1st Lieuts. E.R. Todd, S.E. Anderson and W.L. Kennedy, was scheduled to leave Kelly Field on September 23rd for its maintenance navigation flight. The flight was to be composed of the following students: Major Lester T. Miller, 2nd Lieuts. E.S. Holmes, P.V. Kieffer, J.D. Rutledge, W.W. Jones, C.L. Hosmer, N.C. Spencer, C.B. Stewart, W.C.Barrett, J.K. Arnold; Flying Cadets E.H. Hulch, M.W. Schoephoester, U.B. Baker, F.W. Mills, W.A. Daniel, R.P. Carr, H.M. Truitt, K.A. Tyler, W.G. Ewing. The itinerary followed was to be Kelly Field, San Angelo, Lubbock, Texas; Roswell, New Mexico; El Paso, Texas; Lordsburg, New Mexico; Tucson, Arizona; El Paso, Marfa, Dryden, Fort Clark and Kelly Field, Texas. The one-day stopover for maintenance of their airplanes was to be at El Paso.

The second echelon of the Pursuit Section, commanded by Captain B.M. Hovey, with 1st Lieut. R.J. Browne, 2nd Lieuts. R.D. McCloskey and E.W. Osborne as his assistants, was scheduled to leave Kelly Field on September 27th with the following students comprising it: 2nd Lieuts. J.M. Bartella, C.K. Bowen, E.L.P. Burke, A.P. Clark, L.J. Ellert, F.W. Gillespie, C.T. Goldenburg, W.R. Grohs, S.W. Hulse; Flying Cadets F.J. Black, J.W. Bleasdale, R.M. Caldwell, E. Dyess, W.E. Elder, C.E. Grogan, V.M. Heath, J.W. Hughes, S. Maddux. Following the itinerary, Kelly Field, Dryden, Marfa, El Paso, Texas; Roswell, New Mexico; Amarillo, Texas; Fort Sill, Oklahoma; Lubbock, Abilene and Kelly Field, Texas, the flight was to stop over one day at Fort Sill for maintenance of airplanes.

Captain G.C. Jamison, with 1st Lieuts. C.H. Pottenger, R.B. Epler and 2nd Lieut. C.M. Sartain as his assistants, was to lead the second echelon of the Attack Section, taking off from Kelly Field on September 27th, with the following students: 2nd Lieuts. C.E. Coombs, C.F. Necrason, D.O. Monteith, C.U. True, J.W. Twadell, C.D. Vincent; Flying Cadets C. Hinton, H.F. Lowery, M. Pelham, C. Randall, F.J. Sutterlin, B.K. Vorhees, R.E. Warren, C.K. Wurzbach, C.H. Young, W.L. Younkin. The itinerary to be followed was to be Kelly Field, Texas; Barksdale Field, La.; Hensley Field, Texas; Fort Sill, Okla.; Amarillo, Texas; Albuquerque, New Mexico; El Paso, Midland, Hensley Field, Kelly Field, Texas. El Paso was to be the one-day stopover point for the maintenance of the airplanes of this flight.

PURCHASE OF ADDITIONAL MODEL BT-9C'S

On September 28th, the Secretary of War, the Honorable Harry H. Woodring, announced the award to the North American Aviation, Inc., of Inglewood, Calif., of an additional order on a previous contract for 34 model BT-9C airplanes and spare parts at a total cost of $411,500.90.

These thirty-four additional basic training airplanes are being procured especially for the training of Air Corps Organized Reserves in recognition of its importance in National Defense.

By taking advantage of the contract already under way, and exercising an option for increasing the contract, a considerable saving in individual plane cost is effected.

The BT-9C is a basic training plane powered with a Pratt & Whitney R-1340 "Wasp" engine. Thirty-three such planes have already been procured for the Organized Reserve of the Air Corps and 34 in the present contract increases to 75 the number of new planes to be available for the exclusive training of the Air Corps Organized Reserve.

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RESERVE OFFICERS ARRIVE AT KELLY FIELD

The following-named second lieutenants of the Air Reserve recently reported at Kelly Field, Texas, for extended active duty: Hugh O'Daniel, Stewart H. Murphy, Cecil Scott McFarland, Victor Frank Pixey, Charles Elmo Hart, Elmer Leroy Parsel, Roger Boyer Whitaker, Allan C. Longaker, Bernard M. Lloyd and Legrand J. Mercure. The last three named officers have been placed on temporary duty at Randolph Field. All of these Reserve officers have been assigned to the Flying Department, where they will instruct students.

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RETIREMENT OF NONCOMMISSIONED OFFICERS

The following-named noncommissioned officers of the Air Corps, were, under orders of the War Department recently issued, placed on the retired list, effective September 30, 1937:

Master Sergeant Marion G. Putnam on the west coast, following his return from the Philippines.

Master Sergeant William O. Trager at Randolph Field, Texas.

First Sergeant Edwin O. Booth at Chanute Field, Ill.

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Captain Herbert W. Anderson, Air Corps, stationed at Chanute Field, Rantoul, Ill., has been assigned to duty as Assistant to the Constructing Quartermaster, Denver Branch of the Air Corps Technical School, Denver, Colorado.

THE HAWAIIAN ISLANDS

By an Air Corps Officer who served there

Although a large number of Air Corps personnel has been stationed in or passed through Hawaii, there are still a number of individuals to whom that pleasure has been denied. Some of these latter will soon be ordered there for duty. Living conditions in Hawaii change so rapidly that many of the remarks of one who left Oahu in 1931 may be a trifle misleading, yet it is hoped that the Air Corps people who have not been to this territory may find items of interest in a short series of articles in the Air Corps News Letter, of which this is the first.

From a geological and geographical standpoint, the Hawaiian or "Sandwich" Islands are peculiarly interesting. The present group of islands constitute the most recently formed land body of any considerable size on earth. A flaw exists on the floor of the Pacific ocean, extending from the Siberian coast in a southeasterly direction. Evidence of many extinct volcanic islands to the northwest of the Hawaiian group exists in shoals and reefs, the islands themselves having been washed away through the ages since their formation. Geologists declare that disturbances of the ocean floor to the southeast of the "baby island," Hawaii, indicate that our remote descendants will see the formation of new islands further down the flaw. Hawaii, according to geologists, is 50,000,000 years old.

The present group consists of eight principal islands, namely: Kauai, Niihau, Oahu, Molokai, Lanai, Maui, Kahoolawe and Hawaii, the first mentioned being the oldest and the latter the youngest. It is said "Hawaii" was once two islands until the action of time, tide and erosion joined them together in such fashion that the neck between them is now a plateau ranging in altitude from sea level to as much as 5,000 feet above.

As the islands age, volcanic activity decreases, and of recent years only "Hawaii" has been the scene of actual eruption, although earthquakes are often felt throughout the entire group.

Obviously there is no native vegetation on these islands. Seeds floating on driftwood from various countries, lodging on the sandy shores, apparently took root and the growth spread. Some seeds were undoubtedly carried by far flying birds.

Animate life, except for birds and small animals which floated from Asia to the earlier islands, has been imported by man. Strangely enough, not a snake is to be found anywhere on the islands. One small rock island off the shores of "Oahu" is overrun by rabbits said to have been dumped there from a ship. Otherwise, and fortunately, not a rabbit is to be found. Territorial catastrophe would be wrought if rabbits were rampant in the extensive cane and pineapple fields.

Mongooses were imported to kill off the rats, but instead drove the rats into the trees where they depleted bird nests while the mongooses themselves destroyed eggs of ground-nesting species. Although efforts are being made to import game birds (pheasants and quail flourish on "Molokai" and banded doves are found on nearly all the islands) the "minah" bird, a burlesque edition of the robin, is the principal feathered inhabitant.

The result of volcanic activity and gradual building up of vegetation from many lands has been to make each island a constantly changing panorama to the motorist or flyer. In motoring around "Oahu," a view of typical Californian appearance, seen at one moment, can change in the next to a desert scene typical of the cactus country of West Texas and again change to a purely Hawaiian scene picturing cane and pineapple fields with the inevitable background of ocean and side views of two mountain ranges, one fairly free of clouds and the other either in the midst of heavy rainfall or covered by dense, rain-filled clouds.

Rainfall is the source of all fresh water supply. This is true to such an extent on the island of "Oahu" (where Honolulu is located and where all large business is carried on and most of the population of the group resides) that approximately 30 percent of all rainwater is utilized.

The principal crops of the islands, source of all export commerce, are cane, pineapple and "kona" coffee. The latter is not widely exported. Tuna fishing is monopolized by the Japanese-operated fishing trust, but the canned product ranks fairly high as an item of export trade.

Although the territory is particularly well known for the pineapples produced and canned by a process first made possible by the imaginative genius and determination of John Dole, a young New Englander, cane is really the ranking crop. The cosmopolitanism of the territory of Hawaii is the history of cane raising and sugar producing. This will be explained later.

Aside from the commercial aspects of Hawaii, the territory is of value to our country as its main outpost in the Pacific. It possesses tremendous value as a naval base which, in turn, must be held by our army. In consequence, the various army activities comprise the out-

let for the energies of a large proportion of the white population. In succeeding articles will be pointed out interesting facts connected with the various army posts and military life in the islands.

It is not the intention of the writer to present a history or geography of this interesting group of islands, to describe the tactical problems confronting our armed forces stationed there or to advertise the territory to prospective tourists, all of which are far more ably covered elsewhere, but in succeeding articles it is hoped to give the impressions of and facts gleaned by one who has been there, who is glad to have been there and who hopes to return, in a manner which will interest the reader. Truly has the group of islands been aptly named "the paradise of the Pacific," paraphrased by our soldiers into the "parasite of the Pacific."

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NEW COMMANDER FOR 19TH PURSUIT SQUADRON

By Lieut. R.S. Schumacher, Air Reserve

The 19th Pursuit Squadron, Wheeler Field, T.H., welcomed a new "Skipper" in the person of Captain J.A. Ellison, Air Corps, who recently assumed command. The usual problems which are present in a Squadron when a change of commanding officers takes place were conspicuous by their absence. Captain Ellison fell heir to a smooth running organization and the future looks very bright. His predecessor, 1st Lieut. J.E. Briggs, Air Corps, headed the 19th since last November. During this time the Squadron was engaged in a well rounded schedule of activity, including inter-island flights, gunnery camp and joint Army and Navy maneuvers.

Always on the alert for ways and means to improve the tactics and training of the Squadron, Lieut. Briggs conceived and worked out a plan which shed much light on the controversy of Bomber versus Pursuit. In conjunction with the 50th Observation Squadron of Luke Field, which is equipped with B-10's, the 19th Pursuit Squadron towed targets through all zones of fire of both front and rear guns. The results were tabulated and percentage of hits registered on different approaches and positions. All who have seen the results agree that it is the best and most authoritative work of its kind yet accomplished on the subject.

Under Lieut. Briggs' command, the Squadron averaged 354 hours per month. All pilots completed their proportionate amount of the yearly Training Directive. Since he first assumed command, Lieut. Briggs worked incessantly toward a smooth running organization. Possessed of the happy faculty of making the men under him feel that they were working "with" him and not "for" him, he left a very smooth running unit.

NEW CHIEF SIGNAL OFFICER RADIO PIONEER

With the promotion, effective October 1, 1937, of Colonel J.O. Mauborgne to Chief Signal Officer of the Army with the rank of Major General, older Army officers recall some of his early experiments in the field of military communications, important among which were his early efforts to adapt radio to aircraft.

In 1912 General, then Lieutenant, Mauborgne installed a radio set in an Army airplane, devised the antenna and aided in the first air-to-ground radio communication in history. This primary effort occurred at Fort Riley, Kansas, in October of that year. Brigadier General Henry H. Arnold, Assistant Chief of the U.S. Army Air Corps, then Lieutenant, was the pilot of the plane. The radio operator who manipulated in the air the first air-radio set was Colonel Follett Bradley, now G-2, GHQ Air Force, Langley Field, Va., then a second lieutenant at Fort Riley, Kansas.

Lieut. Arnold had flown one of the Army's twelve planes to Fort Riley, Kans., in order that Lieut. Mauborgne might install a quenched-spark radio set which had been assembled by him, and with which it was hoped air-to-ground communications could be established. The purpose of the tests was two-fold. First, to send from an airplane in flight radio messages to a ground station, which had never before been done anywhere in the world, and to adjust artillery fire from an airplane, while the battery was firing at a target which the battery observer on the ground could not see.

Lieut. Follett Bradley was selected as the operator of the radio set, since he had had some experience in early radio work, and but recently had been transferred from the Navy where he had been radio officer aboard the battleship MICHIGAN.

On November 2, 1912, the experiment was made. Lieut. Bradley's messages transmitted by radio from Lieut. Arnold's airplane were clearly received by Lieut. Mauborgne, operating the ground station. The second part of the test - adjustment of artillery fire from an airplane, so that the battery could fire successfully on targets which its commander could not see, also proved successful. The same officers, radio operator, pilot, and ground radio operator - Bradley, Arnold and Mauborgne - successfully performed this test which marked another "first" in the world of radio - the first time artillery fire had ever been adjusted through the employment of observation and direction from the air.

For the third time in two years, Lieut. Mauborgne of the Army Signal Corps, cooperating with Army flyers, again introduced a new communications system to the world. In the autumn of 1914, for the

(Continued on Page 9)

AN ALOHA REVIEW FOR MAJOR GENERAL DRUM

By 1st Lieut. E.W. Suarez, Air Corps

Honoring Major General Hugh A. Drum, outgoing Commanding General of the Hawaiian Department, the 26th Attack Squadron, as part of the 18th Pursuit Group, participated in the greatest review since the World War.

The great review was held on the Division Review Field of Schofield Barracks, with all organizations of the Hawaiian Department participating. The Air Corps not only contributed the aerial review, but also exhibited 68 motor vehicles and marched two full massed battalions of 724 men.

The enormous amount of work required to prepare and coordinate such a large review is easily appreciated. With all of the transportation, pack mules, tanks, guns, etc., of one brigade of Coast Artillery, one brigade of Field Artillery, two brigades of Infantry, one Air Corps Wing, and numerous Special Troops, the problem of timing was of the utmost importance.

The review was complete, even to the gigantic mobile guns of the Coast Artillery. A month before the review was scheduled to take place, railroad tracks were laid on the parade ground for the railroad guns. New, speedy little tanks presented a grand climax to the part played by the ground troops in the greatest of military reviews.

The aerial review was participated in by two O-33 Transports as the Wing Headquarters Flight, Martin Bombers from Luke Field, and Pursuit and Attack planes from Wheeler Field. The aerial review came as the climax to the ground review. With the passing of the airplanes, all equipment of the Hawaiian Department had passed before the Commanding General in the short space of two and one-half hours.

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AIRPLANES LAND ON NEW HICKAM FIELD

Far from being completed, Hickam Field is rapidly coming along and already has a complement of Air Corps mechanics and airplanes stationed on it, in the form of the 18th Wing Headquarters Flight. This flight, composed of 1st Lieut. Robert W. Warren, Air Corps, and eleven enlisted men, maintains three Pursuit airplanes for use of the Wing Commander and his staff, whose headquarters are at Fort Shafter, and an Amphibian airplane for use of the Hawaiian Department Airways Officer in making numerous necessary flights between the various airways stations on all the islands.

Wing Headquarters Flight was moved onto Hickam Field on September 1st, as it had become necessary to have the Air Corps represented thereon for various purposes. Completed projects and Air Corps equipment had to be accepted and guarded; the use of the field by numerous airplanes made it desirable to have mechanics available there. It has long been desired to have the Wing Staff's airplanes there so as to eliminate loss of time in traveling to and from Luke Field to fly, so this end is also served by stationing this flight at Hickam Field. A hangar had been entirely completed and accepted from the contractor. A small part of it now houses the four airplanes of the Wing Flight, while the enlisted men have found comfortable quarters in one of its offices. Inasmuch as no messing facilities are available, the men are transported to and from the King's Post - Kamehameha - for "chow."

So Hickam Field, if not yet an airdrome, is at least a mighty good flying field - with airplanes assigned. The one completed landing mat has been in use for several months, permission having been given for all military airplanes to land thereon, in order to help settle the new mat.

First Lieut. Robert W. Warren, Air Corps, Officer in Charge of the Wing Headquarters Flight, also Airways Officer of the Hawaiian Department, now has the distinction of being the first Air Corps Commanding Officer of Hickam Field. As duties pile up, this writer wonders if he will consider it a distinction - or - ?

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New Chief Signal Officer Radio Pioneer

(Continued from Page 8)

first time in history, he conducted successfully two-way radio communication between an airplane and a ground station by working with a complex receiver andtransmitting radio set which he built and operated and which he installed in a Burgess-Wright plane flown by Colonel H.A. Dargue, Air Corps, then a lieutenant.

During the 25 years which have elapsed since these tests of 1912, Lt. Mauborgne advanced through the various ranks in the Army Signal Corps, climaxed on Oct. 1st with his promotion to Chief of that Corps. For the past year he was Director of the Aircraft Radio Laboratory at Wright Field, Dayton, Ohio, and was concerned with late aircraft radio equipment, flying almost daily testing his new radio sets in the air.

General Mauborgne was born in the State of New York, Feb. 26, 1881, and is a graduate of the College of St. Francis Xavier.

V-7498, A.C.

A HUSTLING OUTFIT

That the Second School Squadron, Air Corps Technical School, Chanute Field, Rantoul, Ill., is one of the best outfits in the Air Corps is the contention of that organization's correspondent. He proceeds to support that statement with a few facts.

First fact: This organization is composed of "hustlers" who secure promotion and advancement by virtue of study and conscientious work. Of the 42 permanent members, less than 25% draw longevity pay, yet only three men draw a "buck" private's pay; two of these draw flying pay.

Just another example: Private First Class E.A. Richards, who came into the service on October 13, 1936, is now a crew chief on one of the Squadron's airplanes. Remarkable when one considers that airplanes in this Squadron are scarcer than hen's teeth, with the result that competition for crew chief assignment is something like the scramble for berths on an all-star football squad.

There is also the case of Private O.H. Reefer, who came into the service on October 20, 1936, and was advanced to crew chief. But for the fact that he is now in school, he would still be holding that assignment.

During the clean-up month of August, on Chanute Field, the Second School Squadron barracks were given a thorough going-over. Both the outside and inside of the barracks were painted and things were royally torn up around here for a good half of the month. The painting started in the east bay and everyone, with the exception of those students on furlough, had to move to the west bay. Luckily for everyone concerned, there weren't so many men left here that they couldn't be taken care of in the west bay. The interior of the barracks was painted gray and white, which gives it a very clean appearance, as well as making it lighter on the inside. And considering the age of the barracks and the other buildings on the field, our building looks very good. The outside was painted the usual olive-drab and was trimmed with white, giving a very neat appearance. The screens were all taken down, repaired, painted and replaced. The grounds surrounding the barracks were worked over, and everything as a whole looks nice. Who knows? Maybe some of our painters might turn out to be second Rembrandts or Leonardo da Vincis!

After the painting was finished, some of our men were put to work repairing the pool table. They practically tore down and rebuilt the whole thing. What with a half pound of plaster of paris, a hammer, a putty knife, a screw driver and a pair of pliers, all the jumps, bumps and cracks were taken out of the slate, the corner pockets re-braced and the felt covering put back in place. The only thing that wasn't done to it was a varnish job. And that would have probably been taken care off, too, had there been more time.

Now that the painting is finished, the men are comfortably spread out in both bays. Although they don't all have their same bunks and same neighbors, everything is running as smoothly as could be, and the men are enjoying the peace and quiet (????) of our routined life.

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TRAINING BY THE 5TH COMPOSITE GROUP

Training by the 5th Composite Group, Luke Field, T.H., during the month of August included completion of half the required field duty, which is accomplished on the other side of the Island of Oahu and at South Cape, the most southerly part of the Island of Hawaii.

Duty at Waimanalo, on Oahu, has proved to be very popular with all personnel, due to the excellent facilities for swimming and athletics in general after duty hours. In fact, it is noted that there is great wailing and gnashing of teeth from personnel who for various reasons are unable to accompany their outfit. On the other hand, South Cape presents a slightly different situation. From a training standpoint it offers excellent opportunities for personnel to become acquainted with the topography of the largest Island of the Hawaiian Group. It is, however, deficient with respect to facilities for recreation, except for embryo entomologists. In this field, it is unsurpassed, due to the presence of some several millions of the black widow spiders, mentioned elsewhere in this issue of the News Letter. "At this writing," says the News Letter Correspondent, "it is planned to send a cargo of large toads down in the hope that the resultant strained relationships will cause the widows to evacuate. Further research is being carried out to attempt to find some other variety of spider with a native dislike for pests. Suggestions will be welcomed."

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"EGLIN FIELD"

The Bombing and Gunnery Base at Valparaiso, Florida, which is a part of the Headquarters and Headquarters Squadron of the Air Corps Tactical School, Maxwell Field, Ala., has been redesignated "Eglin Field," Valparaiso, Florida, in honor of Lieut. Colonel Frederick I. Eglin, Air Corps, who was killed in an airplane accident near Fort McClellan, Alabama, on January 1, 1937.

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BODY OF MISSING FLYING CADET FOUND

The great Texas aerial search for Flying Cadet Guy W. Edgerton came to an end on September 13th. The body of the Flying Cadet and the wreckage of his airplane were encountered in a thickly wooded section twelve miles southwest of Grapeland, Texas, by Isaac Johnson, a farm worker, who, in searching for stray cows, stumbled across the twisted and scattered plane and its occupant. He immediately notified officials of Grapeland, who communicated with the Commanding Officer of Kelly Field.

Flying Cadet Edgerton was a member of the night navigation training flight of the Attack Section of the Air Corps Advanced Flying School, which was returning from Barksdale Field after dark. The flight encountered a storm, but all members of the flight, except Flying Cadet Edgerton, landed safely at some point in Texas.

The plane did very little damage to the trees and brush, making it practically impossible for aerial searchers to locate the wreck. Examination of Cadet Edgerton's parachute showed that he had made no effort to use it. Neither had he dropped any flares.

The remains of Flying Cadet Edgerton were sent to Kenly, North Carolina, accompanied by Flying Cadet Francis J. Black, Jr.

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ARTILLERY ADJUSTMENT TRAINING AT FT. SILL

The ten student officers and ten flying cadets of the Observation Section of the Air Corps Advanced Flying School, Kelly Field, Texas, began their Artillery Adjustment training at Fort Sill, Oklahoma, on August 29th. To carry out this training, two batteries were assigned to fire daily, one from the 1st Field Artillery and one from the 18th Field Artillery. Firing commenced on August 30th, at 7:00 a.m., both batteries being assigned targets on the same range. Battery commanders had their CP's in the balloon hangar, with telephone lines to the batteries. All ground instruction and assignment of missions were conducted from this location. The students fired six problems each, with an average of 67 rounds, as follows:

(1) A pre-arranged bracket adjustment with H E shell.

(2) Target located by the observer and designated by means of a base point; smoke and shell bracket adjustment.

(3) Target located by the observer and designated by means of a reference point; ladder bracket adjustment with smoke, followed by H E shell.

(4) Target located by the observer and designated by the Lay-on-me method; bracket adjustment; voice communication.

(5) One-gun precision adjustment, with six rounds of improvement fire.

(6) One-target method, coordinated with the 5th problem, using the entire battery for a four-gun precision.

The batteries were exceptionally fast and the adjustments proceeded rapidly. In the opinion of the Senior Instructor of Observation, the students accomplished their missions in a manner which was a credit to themselves and to the school. Upon completion of flying each morning, students maintained their own airplanes. The afternoons were used for recreation.

Two mornings were devoted to sending one-half of the class at a time to the battery positions to observe gun crews in action and to get a comparison of aerial versus terrestrial observation. Firing was completed on Friday, and the airplanes made ready for the return flight to Kelly Field. This return flight was made via Fort Worth and Dallas, Texas, on Saturday, September 4th, with both members of the Observation team flying an instrument mission under the hood.

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MORE WEATHER MEN IN THE MAKING

As a part of the program of organization of the newly constituted Air Corps Weather Service, a school for enlisted forecasters has been established at Patterson Field. This unit of the service has been designated as the Air Corps Weather School. Lieut. Colonel J.H. Houghton, Air Corps, is the Commandant, while Captain Don McNeal, Signal Corps, has been appointed Assistant Commandant and Senior Instructor.

The course of instruction is designed to prepare men, who have had several years' experience as weather observers, and who have a basic knowledge of elementary meteorology, mathematics and physics, for forecasting duty at Air Corps flying fields. The curriculum includes a course in physics commensurate with first year college work, mathematics, embracing algebra such as is offered in normal first year college algebra, expanded to include some work in trigonometry, and a course in meteorology to include the modern theory of air mass analysis and the structure of atmospheric formations based upon the polar front theory. Approximately one-half of the school time is used in preparation of practice forecasts.

The school has a capacity for a class of 25 students. Two classes will be conducted each year, the course of instruction extending over five months. The first class started on September 1, 1937.

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During the month of August, the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, overhauled a total of 20 airplanes and 49 engines, and repaired 42 planes and 23 engines.

SNAKES AND INSTRUMENT FLYING

A friend and well-wisher of the Air Corps News Letter, Captain J.R. Burwell, of Randolph Field, Texas, takes issue with the editor on two statements which recently appeared in this publication, one concerning the length of snakes native to the wilds of Texas, and the other in regard to the date instrument flying was introduced in the course of instruction at the Air Corps Training Center. Captain Burwell is assured that we appreciate his bringing these two matters to our attention and that the News Letter is ready and willing at all times to publish corrections on statements which prove misleading.

Now in connection with the question as to the length of snakes in the Lone Star State, Captain Burwell invites attention to the fact that on page 4 of the June 1st issue of the News Letter, under the heading "Artillery Firing at Camp Stanley," the Kelly Field Correspondent indicated that two very large rattlesnakes, ten feet long, were found in the vicinity of the battery position. An editorial note at the bottom of this article reads as follows:

"According to an authority on reptiles in the State of Texas, the largest rattler discovered in the Lone Star State measured seven feet, and that was way back in 1888. He states that they don't grow that long nowadays, averaging five feet in length."

Captain Burwell enclosed with his letter to the editor a photograph and news item which appeared in the August 21st issue of the San Antonio EVENING NEWS, and which describes a rattler measuring seven feet, two inches, after most of the head was gone, and of sufficient size to be making away with a deer at the time it was killed. He then goes on to say:

"In the fall of 1927, while hunting on the King Ranch between the town of Norias and the Gulf of Mexico, a strip of land ten or twelve miles long with neither roads nor hardly trails through it, I saw a rattler considerably larger even than the one pictured in the inclosure. Unless my memory fails me, this rattler was about seven feet, eight inches long, and its skin was about a foot wide when laid flat. It so happens that there were some rather reliable witnesses to this snake story. They were Mr. Charles Young, son of Owen D. Young, and now a famous engineer with General Electric, and Mr. H.H. Adams, who at that time was Vice-President of the General Electric Company.

I had no part in the killing of this snake, but vividly remember unrolling this huge skin on the floor and deciding then and there that boots were no protection, and in spite of the danger of horseback riding took to horses for the remainder of the hunting trip.

Incidentally, and this part will probably also draw a smile of amused doubt from you, we had seven leopard cats and four bob cats staked out in the yard at one time. We used bulldog collars, cow chains and iron stakes. To substantiate this story, I brought one of the live cats back to Kelly Field and kept it in a cage back of the bachelor building for some time. Being unable to make any progress towards taming it, I had to kill it. Mrs. Goldsborough, whose husband, then "Lieutenant" William C. Goldsborough, was stationed at Kelly Field, took a particular liking to this cat but was also unable to tame it."

Now, taking up the subject of instrument flying at the Training Center, Captain Burwell goes on further to say:

"We were going to pass up the lack of belief in our snake stories, but when it comes to the training, we will really take issue with you. In the August 15th issue of the News Letter, on page 17, the statement is made that Major Ocker's demonstration box was adopted by the Air Corps as routine in May, 1934, and it is implied that actual instrument flying in the Air Corps Training Center followed this.

As a matter of fact, Major Ocker was invited by those of us who were then instructing in the Pursuit Section at Kelly Field to come over and show us his earliest instruments to be used in connection with blind flying. This was in 1929, when not only the majority of officers in the Air Corps, but nearly all pilots thought they could fly blind without instruments.

By January, 1930, these experiments in the Pursuit Section, with the full cooperation of Major Ocker, had proven to our satisfaction that instrument flying was the coming thing and that a course should be presented in this subject. Accordingly, instrument flying for a nucleus of instructors was initiated early in 1930, and the students in Class No. 7B, March to June, 1930, received some instruction in instrument flying. Due to equipment delays and difficulties, however, all members of the class did not get the full course, but beginning with Class No. 8B, July to October, 1930, all students received a full course in instrument flying.

It is believed that these were the first modern courses in instrument flying to be presented to flying students anywhere in the world. It can be seen that the statement which appears on page 17 of the August 15th issue of the News Letter is in error by nearly five years."

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AN ADVENTURE IN THE JUNGLES OF PANAMA

A C-27 (Bellanca) with rations and supplies left Albrook Field, its home station, with rations and supplies for the gunnery range at Rio Hato and El Volcan, Republic of Panama, with 2nd Lt. Thomas J. Schofield, Air Reserve, 80th Service Squadron, as pilot; Corporals, AM 2nd Cl. Callum M. Brooks and Newton D. Hagins, 29th Pursuit Squadron, Privates Glenn W. Vail, Norman C. Hill and Alfred A. Forrest, 80th Service Squadron, as passengers.

Weather conditions were excellent at Rio Hato, but the sky was filled with large towering cumulus clouds. Lieut. Schofield climbed steadily until he reached an altitude of 10,500 feet. After flying for some time at this altitude, he saw ahead of him a darker area than that in which he had been flying, with clear streaks through it. Lieut. Schofield then aimed at some of these clear streaks, and at that time his altitude was about 9,500 feet. He banked his plane 90 degrees to the right, which brought him into a clear area. As the plane was still in about a 45-degree bank, he attempted to level the plane, when a violent shuddering occurred and then a loud blast.

Three of the men were thrown violently out of the ship as a result of the concussion. Some were unconscious and did not know how they got cut, let alone how they pulled the ripcords of their chutes. Happy landings were made in trees and other places. Some even landed in a corn patch. After ascertaining that no serious damages were sustained by the men, first aid was rendered with iodine in the jungle kit. The men then tried to go to some native huts which, before landing, had seemed much closer to them than the spot at which the airplane had crashed. This took a journey of approximately two hours. At this time, some Indians, attracted by the crash, came upon the men and wanted to take them to their huts, but they refused to go with them to the site of the wreck. To add to their misery, it started to rain, and when it rains in Panama it rains. Tired and hungry, the men gave up and went back to the huts.

Signal fires were built the next morning, and one of the men was sent out with a party of Indians to try and retrieve as many of the parachutes as possible. In the meantime, a searching party was sent out from Albrook Field to locate the whereabouts of the C-27 and its crew.

Fortunately, one of the Indians could speak Spanish and knew the trails. This guide volunteered his services and, after traveling over almost impassable trails for two days and a night of continuous going, they arrived at El Jobo, Republic of Panama. It will be surprising to some that a trek of approximately 15 miles should consume so much time, but "Lady Luck" smiled on them by setting the crew of the ship so close to a trail of any sort. You see, much of Panama, even though close to the National Highwey, is without any means of communication whatsoever. At El Jobo, Lieut. Schofield and the rest of the passengers were picked up and ferried in O-19's to David, Republic of Panama.

It was a thankful and grateful group that was brought back to Albrook Field. They were none the worse for their experience, except for minor abrasions received while battling their way through the dense undergrowth of the jungles of Panama.

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SECOND BOMBARDMENT SQUADRON NOTES

Lieut. Colonel Robert Olds, Commanding Officer of the 2nd Bombardment Group Langley Field, Va., gave a short lecture on the "Flying Fortress" to the Coast Artillery Class of 1938 from Fortress Monroe, Va., on their annual inspection of Bombardment type airplanes.

The 2nd Bombardment Group made a nonstop flight to the Cleveland Air Races on September 4th. The Group was met at Akron, Ohio, by the 8th Pursuit Group and was escorted to the Cleveland Airport, where it played an outstanding part in the Army Day Air Pageant.

The Navigation Unit of the 2nd Bombardment Group started class on September 7th, with Lieut. John W. Egan as senior instructor and Lieut. Clifford H. Rees as assistant instructor. The present class is composed of Captains Benjamin W. Chidlaw, James M. Fitzmaurice, William D. Old, Lieuts. John S. Mills, William C. Bentley and Russell L. Waldron. The course consists of lectures and practice flights on Dead Reckoning and Celestial Navigation.

The 20th Bombardment Squadron recently completed a week of field training, September 13th to 18th, at Virginia Beach, Va, which was enjoyed by everyone Aerial gunnery was the order of the day, and at 5:30 a.m. every day, the "rat-tat-tat" of machine guns awakened the mermaids off the Virginia coast Even though the season was officially over at the seaside resort, the ocean was enjoyed as well as numerous other diversions.

Lieut. Adair, of the 96th Bomb. Sqd., and one of its expert bombers, joined the Eastern Air Lines. We wish him a world of success in his new venture.

V-7498, A.C.

LIEUT. COLONEL WILLIAM E. LYND

Lieut. Colonel William E. Lynd, Air Corps, now on duty as a student at the Naval War College, Newport, R.I., was born at Santa Fe, Kansas, September 10, 1893. After graduating from business college at Boise, Idaho, and attending the University of Washington at Seattle for one year, he was later admitted to the Idaho bar and was a practicing attorney until he entered the military service.

On December 16, 1915, he enlisted in the 2nd Idaho Infantry, which was in the Federal service from July 1, 1916, to January 27, 1917, and stationed on the Mexican Border. On March 27, 1917, this regiment was again mustered into the Federal service, being mobilized at Boise Barracks, Idaho. It was stationed at Camp Greene, Charlotte, N.C., from September 24 to October 24, 1917, during the course of which it was converted into the 146th Field Artillery; at Camp Mills, N.Y., for one month; at Camp Merritt, N.J., for a similar period, and then, on December 24, 1917, sailed for overseas service.

Colonel Lynd served with his regiment as Regimental Commissary Sergeant from May 1, 1916, to April 4, 1917, on which date he was commissioned a second lieutenant. He was promoted to 1st Lieut. on October 20, 1917. While in France, he attended the artillery school at Camp de Souge. On February 22, 1918, he was detailed to the Air Service to receive observation training. After graduating from the Observation School at the 2nd Aviation Instruction Center at Tours, April 3d, he was attached to the instructor staff at this school as instructor in Infantry Liaison and Photography until June 8th, following which he graduated from the Aerial Gunnery School at Cazaux on June 30th, and from the Second Aeronautical School, A.E.F., at Chatillon Sur Seine on July 28th.

Assigned to duty at the front, he reported to the 135th Observation Squadron as an observer on August 4th, and on the 19th of that month he was appointed Operations Officer. From October 15 to November 20, 1918, he served as Operations Officer of the 4th Observation Group, and as Adjutant of the Observation Group, 2nd Army, to December 28th. He then assumed command of the 85th Observation Squadron and served therewith for several months at Senzig, Germany, as part of the American Army of Occupation. Returning to the United States on July 29, 1919, he was shortly thereafter honorably discharged from the service.

Commissioned a 1st Lieutenant in the Air Service, Regular Army, on September 17, 1920, with rank from July 1, 1920, Colonel Lynd was subsequently promoted to Captain with the same date of rank. His first station as an officer of the Regular Army was , Post Field, Fort Sill, Oklahoma, where he reported on October 27, 1920, and was assigned as student to take a refresher course in Observation. He was appointed Director of the Air Service Observation School on November 23, 1920, and served in this capacity until January 10, 1921. He was then assigned as student at the Field Artillery School of Fire at Fort Sill and, upon the completion of the course at this School, April 9, 1921, he served as Officer in Charge of Training at the Air Service Observation School until August 3, 1921, and as Secretary thereof in addition to duty on the Academic Board until December 8, 1921.

Assigned as a student at the Primary Flying School at Carlstrom Field, Arcadia, Fla., where he reported on January 21, 1922, Colonel Lynd graduated therefrom as an honor student in the following June, and was then assigned to the Advanced Flying School at Kelly Field, Texas, where he completed the Bombardment course on December 17,1922, and received the rating of "Airplane Pilot." On January 2, 1923, he was assigned to the command of the 40th School Squadron, 10th School Group. He served in this capacity until he reported in September, 1923, as a student at the Air Service Tactical School at Langley Field, Va. Following his graduation from this School in June, 1924, and after duty during the summer months at an ROTC camp at Maxwell Field, Ala., he returned to Kelly Field and assumed command of the 42nd School Squadron, with additional duty as Instructor at the Advanced Flying School. On January 16, 1925, he was relieved from command of the above Squadron and appointed Director of Basic Training, Advanced Flying School.

On December 21, 1925, Colonel Lynd was appointed Director of the Academic Department of the Advanced Flying School, and he served in this capacity and later performed various other functions at Kelly Field, including duty as Director of Training, from January 31, 1928, until November 30, 1928, when he was assigned to special duty at the Headquarters of the Air Corps Training Center at Duncan Field, Texas. On January 3, 1929, he was appointed Director of Training at the Air Corps Training Center.

Ordered to duty in the Office of the Chief of the Air Corps, Washington, D.C., in April, 1929, Colonel Lynd was assigned to the Inspection Division, where his work in large measure was connected with the Visual Inspection System. On August 6, 1930, he was assigned to Crissy Field, Presidio of San Francisco, Calif., and he served as Commanding Officer and Operations Officer at that field until

October 4, 1930, when he was transferred to Mather Field, Calif., where he performed duty as Commanding Officer of the 20th Pursuit Group Headquarters and Post Operations Officer until August, 1931.

Following duty as student at the Command and General Staff School, Fort Leavenworth, Kansas, for two years, Col. Lynd, after his graduation therefrom in June, 1933, and from the Army War College in June of the following year, was assigned to station at Mitchel Field, N.Y., until March, 1935, when he was transferred to the Office of the Chief of the Air Corps, Washington, D.C., for duty in the Plans Division. He served in the Chief's Office until June, 1937, when he was assigned to his present duty as student at the Naval War College.

Colonel Lynd was cited for gallantry in action during the World War and awarded the Silver Star, the citation therefor being as follows:

"William E. Lynd, captain, Air Corps, then first lieutenant, 135th Aero Squadron, Air Service, American Expeditionary Forces. For gallantry in action over Essey, France, August 25, 1918. Lieutenant Lynd with Lieutenant Walter M.Jagoe, pilot, while on a mission to photograph the enemy line from Montsee to Vieville-en-Haye, with two protection planes, was pursued by an enemy formation of seven pursuit planes. One of the protection planes was seen to be in difficulty, the controls being damaged and the observer having been seriously wounded. Going to the assistance of this plane Lieutenant Lynd and his pilot succeeded in driving off the enemy, although the injured plane crashed behind our lines. His mission not being completed, Lieutenant Lynd returned to the field, secured new photographic plates and with one protection plane again endeavored to fulfill his mission. On arriving over the lines he was met by an enemy patrol of five pursuit planes and driven back over the allied lines three times, when not having sufficient gas to continue, he was forced to return. Securing another plane and pilot, Lieutenant Lynd endeavored the third time to complete this mission, but after obtaining the necessary altitude, it was too late in the day to properly photograph the terrain."

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LIEUT. COLONEL DONALD P. MUSE

Lieut. Colonel Donald P. Muse, Air Corps, now on duty at Barksdale Field, Shreveport, La., was born at Jonesboro, Ark., July 29, 1891. After graduating from Junction City, Ark., high school in 1908, and from the Ouachita College, Arkadelphia, Ark., in 1912 (B.A. and B.S. degrees), he attended Eastman College, Poughkeepsie, N.Y., for one term, specializing in accounting. Joining the 1st Arkansas Infantry, National Guard, he was commissioned a second lieutenant on June 2, 1913, and promoted to first lieutenant on March 12, 1914. He was connected with a mercantile establishment at Junction City until June, 1916, when his regiment was mustered into the Federal service and ordered to station at Deming, New Mexico, for border patrol duty. This regiment was mustered out of the Federal service on February 22, 1917, but was mustered in again on April 1, 1917, and its designation subsequently changed to the 153rd Infantry.

Ordered to Hazelhurst Field, Mineola, L.I., for flying training, Colonel Muse completed his tests for the rating of Reserve Military Aviator on September 26, 1917, and remained at that station as flying instructor until December 15, 1917. He was then ordered to Gerstner Field, Lake Charles, La., and assigned to the school for flying instructors. On February 6, 1918, he was ordered to Kelly Field, Texas, where he served as a flying instructor to April 26, 1918. He next served in the same capacity at Barron Field, Fort Worth, Texas, also as Officer in Charge of the Cross-Country Stage and Commandant of the Cadet Detachment until October 4, 1918, when he was transferred to Ellington Field, Houston, Texas. During the period from June 1 to 20, 1918, he was on detached service at Taliaferro Field, Hicks, Texas, taking a course in aerial gunnery.

At Ellington Field, Col. Muse performed various duties, including those of Post Exchange Officer and Instructor in Garrison School for Officers, until July 23, 1919, when he assumed command of the 20th Aero Squadron. He was transferred to Kelly Field, Texas, September 25, 1919, and assigned as Commanding Officer of the Headquarters Detachment, 1st Day Bombardment Group, and Adjutant of this Group. In December, 1919, he commanded the 12th Aero Squadron, and on January 1, 1920, assumed command of the 96th Aero Squadron for a period of three months. He was on duty with the 96th Squadron until June 19, 1920, and was then placed in command of the 11th Aero Squadron.

Transferred to McCook Field, Dayton, Ohio, Colonel Muse began the one-year course of instruction at the Engineering School at that post on November 1, 1920, and then remained after graduation on duty in the Armament Section of the Engineering Division until March 13th, 1922. From the latter date until the latter part of August, 1923, he commanded Grissard Field, Cincinnati, Ohio, and was on duty with the 100th Division, Organized Reserves.

At his next station, Luke Field, Hawaiian Department, Colonel Muse was Post Executive Officer and Commanding Officer of the 65th Service Squadron, holding the last named position until December 1, 1923. On April 8, 1924, he again assumed command of the 65th Ser-

vice Squadron, and he functioned in this capacity until May 9, 1925, when he was assigned as Adjutant of the 23rd Bombardment Squadron, also as Operations Officer and Group Supply Officer, 5th Composite Group.

Upon the completion of his tour of service in Hawaii, February 5, 1926, he was assigned to station at Bolling Field, D.C., and was in command of the 56th Service Squadron from May 17, 1926, to the following September; Assistant Engineering Officer to March 4, 1927; Commanding Officer of the 56th Service Squadron from November 12, 1926, to April 29, 1927; Squadron Supply Officer, from January 14 to April 29, 1927; Assistant Air Corps Supply Officer, April 29 to June 10, 1927, and Air Corps Supply Officer to October 24, 1927. During the remaining portion of his tour of duty at Bolling Field, to October 17, 1928, he served as Adjutant of the Field and Commanding Officer of the 18th Headquarters Squadron.

Transferred to Maxwell Field, Ala., Colonel Muse was assigned as Officer in Charge of Flying and as Post and Squadron Inspector. On March 25, 1929, he took over command of the 22nd Observation Squadron in addition to his other duties. Relieved as Officer in Charge of Flying, July 6, 1929, he was appointed Executive Officer. At various times he temporarily commanded the post for short periods. He commanded the 54th School Squadron from July 15 until the middle of September, 1931, and was then assigned to duty as student at the Air Corps Tactical School.

Shortly following his graduation from the Tactical School, Colonel Muse was transferred to Crissy Field, Presidio of San Francisco, Calif., being attached to the 91st Observation Squadron on September 8, 1932. At various times he temporarily commanded the Squadron and the post, in addition to serving as Executive Officer. He assumed command of Crissy Field and the 91st Observation Squadron in June, 1933, and from August 4, 1934, he performed the additional duties of Air Officer of the 9th Corps Area.

In April, 1935, Colonel Muse was ordered to duty in Panama, and during the course of his two-year tour there he was on duty as Executive and Operations Officer of the 19th Composite Wing at Albrook Field, Canal Zone, for the most part. In May, 1937, upon the expiration of his tour of service in Panama, he was assigned to Barksdale Field, Shreveport, La., for station.

Colonel Muse was commissioned in the Air Service, Regular Army, as a 1st Lieutenant, September 16, 1920, with rank from July 1, 1920. He was promoted to Captain with the same date of rank; to Major, October 1, 1931, and to Lieut. Colonel (temporary) September 26, 1935.

BAT FINDS REFUGE IN AIRPLANE COCKPIT

Army airplanes have carried many strange animals in the past, but none so strange as the one found recently in a Northrop A-17 Attack plane belonging to Headquarters and Headquarters Squadron of the General Headquarters Air Force. The airplane, piloted by Colonel Walter G. Kilner, Air Corps, had just returned from a navigation flight to Spartanburg, S.C.

Sergeant Ralph A. Miner was cleaning it up a bit, getting it ready for the next day's flying, when he found, hanging to the machine gun release cable, and of all things, a bat! It was a peculiar appearing creature, not at all like the chiropterous mammal, in that it was brown instead of the conventional color - black.

The bat showed a rather pugnacious spirit when it was picked up by one of the men comprising the crew of the plane, for it reared back and looked as if it were willing to take on all comers. It was finally released, however, and took refuge in the hangar, there to await nightfall, when it could more readily navigate and possibly find the correct air lane to its home station.

"At last accounts," says the News Letter Correspondent, "it had disappeared from the hangar. No PX has yet been received from Spartanburg.

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MAJOR MOON TO GO ON RETIRED LIST

Special Orders of the War Department, recently issued, relieves Major Odas Moon, Air Corps, from assignment and duty at Langley Field, Va., October 10, 1937, and directs him to proceed to his home to await retirement.

Major Moon, who is to retire for disability incident to the service, has been a member of the Air Corps since the World War. He was born February 11, 1892, at Cullman, Alabama, and attended Baylor Academy for two years and Baylor University, Waco, Texas, for a similar period. On October 13, 1917, he enlisted as a Private, 1st Class, Aviation Section, Signal Enlisted Reserve Corps. After completing the ground school course at the School of Military Aeronautics, University of Texas, Austin, February 9, 1918, and his flying training at Kelly Field, Texas, May 16, 1918, he was commissioned a second lieutenant in the Air Service, and assigned to active duty at Kelly Field. He attended the School for Flying Instructors at that field and then served as flying instructor until August 8, 1918, when he was transferred to Love Field, Dallas, Texas., where he continued duty as flying instructor.

Prior to his appointment as a second lieutenant in the Air Service, Regular

(Continued on Page 20)

A LETTER TO A RETIRED FLIGHT SURGEON

The following letter, given by Lieut. Colonel T. S. Voss, Air Corps, Commanding Officer of Nichols Field, Rizal, P.I., to Lieut. Colonel F.C. Venn, Medical Corps, upon his departure from the Philippine Department last July, needs little amplification. The letter was delivered in a sealed envelope with instructions to be opened September 30th, 1937.

Lieutenant Colonel F.C. Venn,
United States Army.

My dear Colonel Venn:

Today you are being retired from the service of the United States, due to physical disabilities incurred in line of duty, after completing more than twenty years' service as a Medical Officer in the United States Army. Many years of this service have been spent as a Flight Surgeon with the Army Air Corps. While on this duty you not only endeared yourself to the personnel of the Air Corps by the manner in which you performed your official duties, but your congenial personality and all round good fellowship will be long remembered by the hundreds of friends you made while on such duty, and I know that they, thru me, the commanding officer of the post where you last served, want to wish you all happiness in your well deserved retirement and to express to you their thanks for your untiring service to them while serving with them.

I cannot but feel that a part of your great popularity as a Flight Surgeon and as an officer in the Army is due to the fact you have been blessed with a wife one finds only in a million. The fine qualities she has exhibited will remain an example to younger ladies coming into the service and a source of great pleasure to the older ones who were privileged to know her.

Again expressing my gratitude to you both as an officer and as a friend and inviting you to remember that on this day we will drink a Scotch and Water to you and Dorothy and say,

Mabuhay,

T.S. Voss,
Lieutenant Colonel, Air Corps,
Commanding

"We hope, and feel sure," says the Nichols Field Correspondent, "that this little item will come to the attention of Colonel and Mrs. Venn, that they may know that we at Nichols Field are still thinking fondly of them and wishing them the best of everything for many, many more happy years, as we know their friends throughout the world are doing."

TOADS VERSUS BLACK WIDOW SPIDERS

Crates of huge toads consigned to a camp in Hawaii for the purpose of wiping out a thriving and thickly populated colony of black widow spiders recently constituted the unique cargo of an Army Transport plane in the Hawaiian Department.

Declaring that the 23rd Bombardment Squadron had been called upon to do many varied and unusual missions at one time or another, the News Letter Correspondent from Luke Field, T.H., adds:

"It seems that as time goes on, these missions become stranger and stranger. A few years ago, squadron pilots and bombers were called upon to bomb the lava flow of Mauna Loa in order to attempt to divert or stop the flow which was endangering the town of Hilo, Hawaii. While all the natives of the region believed that everlasting doom would fall on any one rash enough to attempt to prevent 'Madam Pele' from carrying out her designs, the mission was successful and the flow of lava was stopped. To the great surprise of many, 'Madam Pele' didn't seem to resent this intrusion into her domain and the squadron has carried on without any trouble from that source.

The Squadron recently completed another mission which could hardly be included in our line of work. A telephone call from the Group Operations Officer made the Squadron Operations Officer shake his head and wonder, but promptly at 7:45 a.m., Major Beaton, pilot, and Lieut. Capp, co-pilot, took off on an inter-island flight to South Cape, Hawaii, in the Douglas C-33, its cargo consisting mainly of crates of huge toads prevalent in these parts. It seems that the first camp established at South Cape this year proved to be a gathering place for millions of black widow spiders. The hardy pioneers stuck it out for their required week, but returned to Luke Field a tired lot, claiming that if they took a chance and dared sleep the spiders would take complete control. We hope that after the toads make themselves at home that the spiders will cease to exist.

As to the success of this latest mission of the 23rd, time alone will tell, but it will be some time before our Squadron Commander will carry a more unusual load in his shiny pet."

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NEW SQUADRON COMMANDERS

Major Oliver P. Gothlin, Jr., a recent graduate of the Command and General Staff School, assumed command of the 72nd Bombardment Squadron, Luke Field, following his arrival in the Hawaiian Department.

Captain Homer W. Ferguson joined and assumed command of the 50th Observation Squadron, also at Luke Field, T.H.

MORE PILOTS FOR THE ARMY AIR CORPS

Class 29-B of the Air Corps Advanced Flying School, Kelly Field, Texas, will graduate on October 6th, according to the following schedule:

8:00 a.m. Graduating Class report at ~ Sections.

8:55 a.m. Student officers and flying cadets from the Basic Stage at Randolph Field report in front of Post Operations Office.

9:00 a.m. Graduating Class take stations in airplanes.

9:05 a.m. Graduating Class taxy out on the field.

9:10 a.m. Take-off.

9:30 a.m. Aerial Review.

9:45 a.m. Training airplanes on display in front of Operations Office.

10:25 a.m. Student Officers and Flying Cadets from Randolph Field arrive at Post Theatre.

10:30 a.m. Graduating Class arrives at Theatre.

10:45 a.m. Graduation Exercises at Theatre.

The graduating class of October 6, 1937, comprises 40 officers of the Regular Army and 49 Flying Cadets, total 89. Of the 40 officers, one, Major Lester T. Miller, Air Corps, heretofore a member of the Lighter-than-Air Branch, annexes the additional flying rating of "Airplane Pilot," to go with three already held by him, namely, "Airplane Observer," "Balloon Observer" and "Airship Pilot." One officer, 2nd Lieut. Carl M. Parks, Infantry, is a member of the 1935 graduating class of the United States Military Academy. The remaining 38 officers graduated from the Military Academy in June, 1936, and constitute 60 percent of the 63 members of that class who were assigned to the Air Corps for flying training. Of the 25 who failed to graduate, 18 were relieved from further training during the course of the year and the remainder are being held over for further training, due to time lost through illness or other causes.

A total of 102 Flying Cadets started training at the Primary Flying School, Randolph Field, Texas, in October, 1936, of which number 49, as above stated, or 48%, are graduating. Five Cadets of the original number are being held over for further training.

The officer graduates will, in the very near future, be transferred to the Army Air Corps and thus augment the present commissioned flying personnel of this branch of the service. The Flying Cadet graduates who, as well as the commissioned graduates, will be given the rating of "Airplane Pilot," will be commissioned second lieutenants in the Air Reserve and will be placed on extended active duty with Air Corps tactical squadrons on October 7th. The graduates are listed below, as follows:

OFFICERS

Major Lester T. Miller, A.C.	Ohio

2nd Lieutenants

Arnold, John K., Jr. CAC	Washington, D.C.
Barrett, Wallace C. Inf.	Port Arthur, Texas
Bartella, John M., Inf.	Escanaba, Mich
Bell, Frederick, CAC	Troy, Kans.
Bowen, Carl K., Jr. FA	Claremont, N. H.
Burke, Edward L.P., Inf.	Helena, Mont.
Carmichael, Richard H., FA	Austin, Texas
Champion, George P., Inf.	Marion, Ill.
Clark, Albert P., Jr. Cav.	Fort Logan, Colo.
Combs, Cecil E., Cav.	Dallas, Texas
Covington, Wm. E., Jr. Inf.	Rockingham, N.C.
Ellert, Laurence J., Inf.	Beechurst, L.I., N.Y.
Gepen, Robert D., FA	Grand Marais, Minn.
Gillespie, Frank W., CAC	Gaines, Mich.
Goldenberg, Carl T., Inf.	Sweet Briar, Va.
Grohs, William R., Cav.	St. Paul, Minn.
Holmes, Ernest S., Jr. Inf.	Missoula, Mont.
Hosmer, Clark L., Inf.	Dunseith, N.D.
Hulse, Seward W., Jr., FA	Fort Mason, Calif.
Jones, William W., Inf.	Perry, Okla.
Kelly, John R., Inf.	Chicago, Ill.
Kieffer, Pierre V., Jr., CE	Del.
Kimball, William L., Inf.	Denver, Colo.
Lee, William G., Jr., Inf.	Washington, D.C.
McBee, William M., Inf.	Eureka Springs, Ark.
McCorkle, Charles M., FA	Newton, N.C.
Monteith, Dwight O., CE	Centerville, Iowa
Nazarro, Joseph J., Inf.	Brooklyn, N.Y.
Necrason, Conrad F., SC	Cooperstown, N.Y.
Parks, Carl M., Inf.	N.C.
Rogers, Turner C., Inf.	Statesville, N. C.
Rutledge, Jay D., Jr., FA	Red Lion, Pa.
Shores, Von Roy, Jr., Inf.	Ardmore, Okla.
Spencer, Norman C., Jr., FA	Concord, Mass.
Stewart, Charles B., CAC	Mass.
Terrell, Frederick R., FA	Tujunga, Calif.
True, Clinton U., Inf.	New Orleans, La.
Twaddell, James W., Jr., Cav.	Andalusia, Pa.
Vincent, Clinton D., FA	Natchez, Miss.

FLYING CADETS

Agan, Arthur G., Jr.	Corpus Christi, Texas
Baker, James B.	Bird Island, Minn.
Barrett, Everett R.	St. Cloud, Minn.
Black, Francis J., Jr.	Tallahassee, Fla.
Bleasdale, Jack W.	Palo Clto, Calif.
Caldwell, Robert M.	Madison, Wis.
Callaway, Richard D.	Washington, Ga.
Carlson, Arthur C., Jr.	Jerome, Ariz.
Carr, Richard P.	San Antonio, Texas
Daniel, William A.	Birmingham, Ala.
Dyess, William E.	Albany, Texas
Elder, William E.	Wichita, Kans.
Ewing, Willard G.	Chicago, Ill.
Field, Charles W.	Rocky Face, Ga.
Fletcher, Eugene B.	San Diego, Calif.
Gallagher, Francis B.	El Paso, Texas
Grogan, Charles E.	Indianapolis, Ind.
Harper, Carl	Lubbock, Texas
Hatch, Edwin H.	Lisle, Ill.
Heath, Victor M.	Fond du Lac, Wis.
Heflin, Clifford J.	Fresno, Calif.
Hinton, Coleman	Lakeland, Fla.
Hughes, Jack W.	St. Joseph, Mo.
Lowery, Herman F.	Hattiesburg, Miss.
McNickle, Marvin L.	Vermillion, S.D.
Maddux, Sam, Jr.	Lawton, Okla.
Miller, Warren M.	Rockford, Ill.
Miller, Wilbur G.	Livingston, Mont.
Mills, Frederic W.	Ponca City, Okla.
Olmsted, Charles T.	Brownsville, Texas

V-7498, A.C.

Paul, Joseph H.	Marriottsville, Pa.
Pelham, Morris	Auburn, Ala.
Peterson, Arman	Flagstaff, Ariz.
Randall, Clifford	Pasadena, Calif.
Rindom, Frank O., Jr.	Liberal, Kans.
Rogers, Floyd W.	Chicago, Ill.
Schoephoester, Melvin W.	Madison, Wis.
Sutterlin, Frederick J.	Miami Springs, Fla.
Tacon, Avelin P., Jr.	Mobile, Ala.
Taylor, J. Francis, Jr.	Columbus, Ind.
Torrey, Alfred J.	Nashville, Tenn.
Truitt, Homer M.	Booneville, Mo.
Tyler, Kermit A.	Berkeley, Calif.
Voorhees, Burton K.	Evanston, Ill.
Warren, Roy E.	Hagerstown, Md.
Wilhelm, Don Louis, Jr.	Dayton, Ohio
Wurzbach, Clemens K.	San Antonio, Tex.
Young, Charles H.	Wellington, Kans.
Younkin, William L.	Summerfield, Kans.

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ADDITIONS TO INCOMING CLASS AT RANDOLPH FIELD

In the article in the previous issue of the Air Corps News Letter on the new class at the Primary Flying School, which will begin training on October 15th next, it was stated that the students will number approximately 216, comprising 106 second lieutenants of the Regular Army who graduated from the U.S. Military Academy on June 12th, last, 103 candidates from civil life, four enlisted men of the Air Corps and three enlisted men from other branches of the Regular Army. It was predicted, however, that the number of flying cadet appointees would be augmented to some extent before the new class actually started training.

Since the date of the previous issue of the News Letter, 49 additional cadets were added to the list, comprising 45 civilians and 4 Air Corps enlisted men. At the same time, 8 candidates selected for appointment, and whose names appeared in the original list, declined to accept same. Thus, there is a net gain of 41 Flying Cadets for the new class, raising their total to 151 and the total for the entire class to 257, (adding the 106 officers).

The eight candidates removed from the original list are -

Hornsby, Claude Eugene, Jr.	Centerville, Ala.
Murray, Samuel Fenton	Palo Clto, Calif.
Giesecke, Paul	Rockville, Conn.
Bourgoin, Raoul Joseph	Frenchville, Maine
Travis, Frank Hotchkiss	Tarrytown, N.Y.
Reynolds, Thomas C., Jr.	Valliant, Okla.
Smith, Charles John	Rutland, Vt.
Reed, Charles Wesley	Raymond, Wash.

The 49 additional candidates recommended for Flying Cadet appointments are listed below, as follows:

CIVILIANS

DeShazo, Robert V.	Birmingham, Ala.
Fitzgerald, Maurice Joseph, Jr.	Ft. Smith, Ark.
Wade, Horace Milton	Magnolia, Ark.
McGowan, Leland Stanford	Alhambra, Calif.
Hopper, Rowland Wells	Fresno, Calif.
Eisenhart, Charles Marion	Los Angeles, Calif.
Greenbalgh, Leo Joseph	Los Angeles, Calif.
Lawrence, Reesor Mott	Redding, Calif.
Flack, Rudolph Emil	West Los Angeles, Calif.
Toliver, R. Frederick	Fort Collins, Colo.
Starkey, James Fred	Greeley, Colo.
Wheeler, Warren Ned	Greeley, Colo.
Greasley, Phillip Henry	West Hartford, Conn.
Sheahin, John Thomas	Washington, D.C.
Shilling, Erikson E.	Washington, D.C.
Schwartz, Paul	Tampa, Fla.
Proctor, John Peebles	Athens, Ga.
Baugher, John Oliver	Chicago, Ill.
Floyd, Albert	Chicago, Ill.
Salzarulo, Raymond Paul	Richmond, Ind.
Nichols, Thomas Brooks	Lexington, Ky.
Hamilton, McHenry	Alexandria, La.
Merritt, James Franklin, Jr.	Benton, La.
Smart, Robert Alan	Kittery, Me.
Bane, John Charles	Bethesda, Md.
Osborn, John William	Lincoln, Neb.
Hutchins, Leroy Gage	Dover, N.H.
Milligan, Robert Louis	Rochester, N.H.
Ward, Brewster	Buffalo, N.Y.
Wiper, Samuel B.	Sheldon, N.D.
Criqui, Francis Bernard	Toledo, Ohio
Millsaps, James Carter	Kiowa, Okla.
Sullivan, Wm. Alexander, Jr.	Aspinwall, Pa.
Sullivan, John Lynn	Scranton, Pa.
Teats, Edward Charles	Sharpsburg, Pa.
Borsi, Lawrence Renzo	West Wyoming, Pa.
Wyatt, Thomas Cleveland, Jr.	Knoxville, Tenn.
Baskin, Robert W.	Murfreesboro, Tenn.
Free, Edward Gorman	Nashville, Tenn.
Knox, John Max	Nashville, Tenn.
Taylor, Ozburn Early	Nashville, Tenn.
Howery, Allen Moore	Russellville, Tenn.
Barksdale, Ralph A.	Gainesville, Texas
Flowers, Noel Quentin	Mount Vernon, Wash.
Martin, Robert James	Eau Claire, Wis.

ENLISTED MEN

Green, Benjamin Clyde, Pvt.	Perry, Fla.
Panama Air Depot, France Field, Panama.	
Welborn, Kenneth M. Sgt.	Auburn, Ky.
13th Air Base Sqd., Maxwell Field, Ala.	
Keyser, Donald McKay, Pvt.	McComb, Ohio
Hq. and Hq. Squadron, Chanute Field, Ill.	
Gaydos, John, Pvt.	Jamestown, Pa.
14th Air Base Squadron, Bolling Field, D.C.	

In the revised list of Flying Cadet appointees California, with 16 students, still has the largest representation of native sons, followed by Texas with eleven and Oklahoma with eight. Los Angeles leads the cities represented with four students, followed by Washington, D.C., and Nashville, Tenn., with three each.

It is quite likely that there will be further additions to the list of Flying Cadet appointees before the new class starts work in earnest.

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A NEW RANGE FOR THE 37TH ATTACK SQUADRON

To date there has never been a local attack range available for the 37th Attack Squadron of Langley Field, Va. Construction of the much needed range has at last begun at Mulberry Island, 22 miles northwest of Langley Field, and the 37th is looking forward to being able to qualify its flying personnel. Lieut. James M. Jones, Air Reserve, Armament Officer of the Squadron, is working on the project and contemplates range control by a system of flags and by a sub radio station erected on the range.

MINIATURE BOMBING RANGE AT ADVANCED FLYING SCHOOL

The Kelly Field miniature bombing range, a photograph of which appears on the cover page of this issue of the News Letter, is said to be the only one of its kind in the world, and it is now being used by flying students in bombing practice. It is here that they receive their first training in air artillery adjustment and infantry missions.

Standing 84 feet high and 45 feet in diameter, the building from the outside resembles somewhat a modernistic farm silo or grain elevator. Its walls are fire-proof and sound-proof.

Climbing several flights of stairs, one reaches the observers' balconies, which circle the building, and the instructor's platform suspended from the top. From these balconies the observers look down below on the terrain board, or the miniature range.

The terrain suggests an airplane view of San Antonio and its various military posts, with a criscross of roads and streets. This board, which covers the entire ground floor, is perforated with 600 holes. Small lights are underneath the holes.

The bombing student does not drop a missle, but scores his hits with a system of lights and a radio hook-up. The radio operator sits before a large switch panel and operates the lights as directed by the student who theoretically is firing from the balcony. Each student is aided with a chart, and his strike is represented by a light which appears on the board below. The circular observation balconies will accommodate 100 students at a time.

Looking from the top of the tower, the artificial terrain has the same appearance San Antonio would have if viewed from 15,000 feet.

The range constitutes the first step in bombing practice of the students.

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Retirement of Major Odas Moon

(Continued from Page 16)

Moon

Army, on July 1, 1920, Major was on border patrol duty at Marfa, Texas, with Flight B, 104th Aero Squadron. He was transferred to the Panama Canal Department, February 20, 1921, and served on the Isthmus for three years, being stationed at France Field, and performing during this period at various times duty as Post E. & R. Officer, Post Survey Officer, Athletic Officer, Engineering Officer and Adjutant.

At Kelly Field, Texas, his next station, where he was on duty for 4½ years, he served as Flying Instructor for over three years and, in addition, was Director of Bombardment Training at the Advanced Flying School for two years. He also completed the 5-months' Special Observation course.

Transferred to Rockwell Field, Calif., August 17, 1928, where he was on duty until June 25, 1930, Major Moon served for the most part in the capacity of Operations Officer. For a period of five months he was on detached service at Wright Field, being a student at the Air Navigation School.

After graduating from the one-year course at the Air Corps Tactical School, Langley Field, Va., in July, 1931, he returned to Kelly Field where, during a two-year tour of service, he was on duty for the most part as Bombardment Flying Instructor. In July, 1933, he was transferred to the Air Corps Tactical School at Maxwell Field, Ala., where for 2⅔ years he was on duty as an instructor, and for nearly a year Chief of the Bombardment Section.

Major Moon was transferred to his present station, Langley Field, in July, 1936.

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CHANGES OF STATION OF AIR CORPS OFFICERS

To Chanute Field, Ill.: Captain Norme D.Frost, from Selfridge Field, Mich.

To Washington, D.C.: Captain William J. McKiernan, Jr., from duty as Instructor, 44th Division Aviation, New Jersey National Guard, Newark, to duty in the Office of the Chief of the Air Corps.

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RESERVE OFFICERS PLACED ON EXTENDED ACTIVE DUTY

Second Lieutenants

Randolph Field, Texas: Edward Preston Dimmick, San Antonio, Texas, to September 13, 1940; Hans Kraft Kircher, Los Angeles, Calif.; Robert Hamilton Monroe, Los Angeles, Calif.; Robert Harry Quigley, Whiting, Ind.; Charles Alexander Watt, Detroit, Mich.; Walker Arval Hazelwood, Salem, Oregon; Joseph Roy Delaune, Jr., Beaumont, Texas, to September 21, 1940; Vernon Lester Phelps, Jennings, La., and Charles Ernest Trostel, Cincinnati, Ohio, to September 19, 1940; Anthony Gerard Hunter, Kansas City, Mo., to September 25, 1940; Eckford Hodgson, Gallipolis, Ohio, to September 25, 1940; Robert Wilbur Henderson, Glendale, Calif., and George Samuel Pello, Seattle, Wash., to October 1, 1940; Norton Harding Van Sicklen, III, Mansfield, Ohio, to October 9, 1940.

Lawson Field, Ga.: James Edward Darby, Chicago, Ill., to September 26, 1940.

March Field, Calif.: Roger Williams Smith, San Francisco, Calif., and James Clifford Jensen, Fresno, Calif., to September 21, 1940.

Rockwell Air Depot, Calif.: Harry Lewis Dulin, Oakland, Calif., to September 21, 1940.

Langley Field, Va.: James Britt League, Greenville, S.C., to September 12, 1940.

Effective upon the completion of their present tour of foreign service, Major Harvey W. Prosser, Captain Shelton E. Prudhomme, 1st Lieuts. Richard A. Legg and Francis M. Zeigler, now in the Philippines, and 1st Lieut. John M. Price, now in the Panama Canal Department, are assigned to duty at Randolph Field, Texas.

Major Hugh Mitchell, Signal Corps, has been relieved from assignment and duty at Fort Monmouth, New Jersey, and assigned to duty as Director of the Aircraft Radio Laboratory at Wright Field, Dayton, Ohio. Major Mitchell succeeds the recently appointed Chief Signal Officer of the Army, Major General J.O. Mauborgne, who, as Colonel, Signal Corps, held that position for the past year.

Langley Field, Va., Sept. 20th.

Eighth Pursuit Group

Headquarters and Headquarters Squadron:

All airplanes participating in the Cleveland Air Races returned to the home port, and an enjoyable time was reported.

After a month's well earned vacation, 1st Lieut. Joseph A. Bulger is again back on the job as Assistant Group Operations Officer.

First Lieut. John E. Barr is taking a 15-day rest cure, his duties as Group Adjutant being taken over for that period by Captain W.L. Wheeler.

Major Melvin B. Asp spent a week end at Sarasota, Fla., and it is presumed that the finny population of the neighboring waters was materially reduced.

33rd Pursuit Squadron:

With the Cleveland Flight safely back at home and the squadron going in full swing, we again turn to that important phase of Pursuit Training - Aerial and Ground Gunnery, Group training missions of instrument flying, formation, etc., in the morning, and in the afternoon qualification of new pilots and requalification for those who need it.

Lieut. L.H. Kumish comes out from under the stacks of technical orders, Base orders, local flying rules and regulations and, after "feeling out the layout" of the Squadron, he emerges as Flight Commander. His years of experience and hours of flying time make him qualified for the job, and we feel quite sure he will make a very capable leader.

35th Pursuit Squadron:

Record firing, in accordance with TR 440-40, is being conducted to qualify three officers who recently reported to the Squadron.

The six officers who went with the Group to Cleveland returned on September 8th, reporting an interesting time at the Races as both participants and spectators.

The Squadron officers and men presented Lieut. Jeffus and Mrs. Jeffus with a beautiful Sheffield tray as a wedding gift.

The 35th reports the promotion and loss to the Squadron of Staff Sergeant C.M. Ernst. He is now 1st Sergeant of the 36th Pursuit Squadron.

36th Pursuit Squadron:

The 36th contingent to the Cleveland Air Races returned in varying moods, though all agreed that the five days there were well spent. The days were inclined toward fullness, what with their own flying in the mornings, witnessing the many events of the Races throughout the remainder of the day, and upholding the social reputation of the Air Corps in the evenings. If such a thing is possible, a few of the boys were perhaps too conscientious in the execution of the latter.

Our association with Lieut. N.E. Powel was quite brief. Assigned to this organization a month ago, he has now been transferred to the 2nd Bombardment Squadron. The Engineering Department will miss you, Ernie.

The congratulations of the outfit go to Sergeant Joe Laver, promoted to Master Sergeant on September 1st. As First Sergeant he has handle his job in a manner which will be very hard to duplicate, and his successor has his job cut out for him.

Second Bombardment Group

Headquarters and Headquarters Squadron:

Captain Ivan M. Palmer was appointed Squadron Commander, effective August 25th, vice Captain Ward J. Davies, who assumed the duties of Post Exchange Officer.

20th Bombardment Squadron:

Congratulations are extended to Master Sergeant Elga M. Glendy and Tech. Sgt. James C. Elder, who received their promotions on September 1st.

Lieut. Frederick E. Glantzberg returned from a month's leave in New Jersey and assumed his duties as Operations Officer.

96th Bombardment Squadron:

First Sergeant George E. Harrison returned to the organization after a 30-day trip to Texas.

Sergeant Anthony J. Zamberlan departed for Chanute Field to take a special six weeks' course in carburetor installation.

Lieuts. Paul G. Miller and Warren H. Higgins returned from extended leaves.

New arrivals in the organization include Captain Wittkop, of the GHQ Air Force, and Lt. Powell, a recent engineer graduate of the Technical School at Chanute Field.

Lieut. William F. Day was transferred to the 37th Attack Squadron.

Fishing at the Yorktown Mine Docks was officially reported very good when Captain Robinson gave away a 4-foot string of bass.

All Squadron officers are becoming fully acquainted with the bomb trainer and, under the able tutelage of Lieut. Miller, expect to be able to qualify as expert bombers during the next few months.

21st Reconnaissance Squadron:

The Squadron softball team played one game since the official tournament started on August 30th, scoring a win over Headquarters and Headquarters Squadron.

Technical Sergeant Bollenbach was appointed Master Sergeant on September 1st. Congratulations are in order, but where are the cigars?

The Squadron gained four new members in the persons of Privates Reich, Schappell, Snock and Waldorf from Base Headquarters and 1st Air Base Squadron.

Kelly Field, San Antonio, Texas, Sept. 22nd.

First Lieut. George F. Smith arrived at Kelly Field on September 14th in a BT-9B airplane to deliver lectures to the students of the Air Corps Advanced Flying on Engines and Equipment. The first lecture was given on the morning of September 16th and the second one on the following morning. Lieut. Smith then departed for Wright Field.

Captain Arthur J. Lehman, formerly stationed at Mitchel Field, arrived here for duty on September 21st and was assigned to the 62nd School Squadron.

The following promotions affecting personnel at Kelly Field were announced on September 1st: Technical Sergeant Edward Miller to Master Sergeant; Staff Sergeants Edward L. Carr, Clyde L. Falls, Grover C. Moss and Michael Chuturich to Technical Sergeant.

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

4th Observation Squadron: The Squadron lost Lieut. W.R. Boutz and Pvt. 1st Cl. Lester E. Faust on the last boat, the former going to Duncan Field, Texas, and the latter to try his luck with the Seversky Aircraft Company. Good luck to both of them.

Sergeant R.G. Boyd, from Kelly Field, arrived on September 4th as replacement for Sergeant Peters. Aloha, Sgt. Boyd! We hope you will like the Islands.

A young tent City was erected to house the influx of recruits who arrived on the last two boats.

New chevrons are being proudly displayed by Tech. Sgt. C.M. Gilbert, Staff Sergeant Taylor, Sergeant Ralph and Corporal Bauer. Cigars should be plentiful for a while.

23rd Bombardment Squadron: In sailing from Honolulu on September 10th, the Army Transport REPUBLIC carried with it many officers and men who had finished their tour of duty in the Hawaiian Department. This Squadron lost two of its most popular officers who will be hard to replace - Lieut. Capp, who is to report at Hamilton Field after a short leave, and Lieut. Coddington, who goes to Duncan Field, San Antonio, Texas. The latter will be remembered as one of the bombers who bombed the lava flow on Mauna Loa on December 26th, 1936. Lieut. Capp's absence will be felt in both the Group and Squadron flying records, as he ended up the last fiscal year as high man on flying time in the 5th Composite Group.

Lieut. Dugan, one of our more recently assigned officers, reported to the Squadron after a siege of illness in Tripler General Hospital, where he has been during most of his time in the Islands. One of his first and most enjoyable tasks after returning to duty was that of handing out cigars to his friends at Luke Field, the arrival of a bouncing baby boy being the prime reason for both the cigars and the broad grin that went with each individual smoke.

50th Observation Squadron: During the period from September 2nd to 15th, the Squadron was engaged in annual field training at the Waimanalo Military Reservation. During this period the Squadron completed its ground small arms and machine gun firing. The attachment of two BT-2B's from the 4th Observation Squadron enabled the Squadron to catch up on instrument flying.

Captain Homer W. Ferguson, on September 4th, joined and assumed command of the organization.

On September 4th and 13th, the Squadron's strength was increased by the assignment of 13 recruits for each date.

On September 13th, the Squadron held its annual organization day while at the Waimanalo Military Reservation. Plenty of good food, soft drinks, with softball games and swimming, enabled all to have a good time.

72nd Bombardment Squadron: Major Oliver P. Gothlin, Jr., a recent graduate of the Command and General Staff School, assumed command of this Squadron. First Lieut. Sory Smith was attached to the 72nd for flying.

First Sergeant W.E. Gerton, Technical Sergeant Benton D. Glasscock, Staff Sergeants C.H. Woodling and Jay W. Null all left on the REPUBLIC for mainland stations. Sergeant Gerton went to Selfridge Field, Sergeants Glasscock and Woodling to Maxwell Field and Sergeant Null to Barksdale Field. Master Sergeants Kashe and Magaha and Technical Sergeant Akers arrived on the REPUBLIC and were assigned to the 72nd.

The 23rd and 72nd Squadrons wound up as playoff teams for the post baseball championship, each having emerged victorious in their respective softball leagues. The series stands one and one, the deciding game to be played in a few days.

65th Service Squadron: The Squadron was scheduled to go to the Bellows Field target range on September 16th to fire the ground machine gun and pistol. The organization as a whole looked forward to this trip in the same manner as children look forward to the coming of Christmas and Santa Claus. Is it that the boys are going to fish for some of the larger denizens of the deep while they are out, or does Waimanalo hold some secret attraction for them?

For the personnel leaving on the transport REPUBLIC, sailing from Honolulu on September 10th, the Squadron gave an Aloha dinner which was enjoyed by every person attending. First Sergeant J.A. Holt, elected as master of ceremonies, conducted the entertainment like a veteran. Speaking for the Squadron personnel as a whole, Private 1st Class Paul H. Miller is to be congratulated upon his ability to plan, cook and serve such a delicious dinner.

The tennis fans in the Department will get a treat when they have the opportunity of seeing 2nd Lieut. Dolf E. Muehleisen go into action. Lieut. Muehleisen is the leading tennis player in the service. He arrived in the Department on September 10th, and his duties include those of Post Transportation Officer and Squadron Adjutant.

Hawaiian Air Depot, September 13th.

Major Branshaw returned from leave on the mainland on September 10th and resumed command of the Depot the following day. Major Albro, who was temporarily in command, assumed the duties of Chief Engineering Officer. Captain Frank Klein reported for duty with the Engineering Section.

Organization Day was celebrated by all employees and their families at Kailua Beach on August 28th.

General Andrew Moses, the new Hawaiian Department Commander, paid an informal visit to the Depot recently and acquainted himself with our staff and shop foremen, and appeared keenly interested in the many phases of our work.

Hickam Field is progressing slowly, and our employees are anxious to get into shops which will provide more elbow room.

Maxwell Field, Ala., September 21st.

Headquarters and Headquarters Squadron: Our Squadron was recently reduced in enlisted personnel from 237 to 227 enlisted men, and adjust-

ments within the various departments were made accordingly to correspond with our reduced strength.

On September 1st, this Squadron was increased in grades and ratings, as follows: One Sergeant, two Corporals, twelve Privates, 1st Class, and several Specialist ratings, all of which were very welcome additions. There were usually a large number of expectant Privates, 1st Class, etc., hovering around the bulletin board for several days prior to the posting of the new order on promotions, watching and hoping that they would be among those more fortunate eligibles to fill one of the new vacancies. Private, A.M. 2nd Class, Davis of the Photo Section was appointed Sergeant, and Privates, 1st Class, Martin and Weaver, also of the Photo Section, were appointed Corporals, while the Private, 1st Class, vacancies were distributed throughout the various departments.

Private, 1st Class, AM 2nd Class, Gross departed from our midst via the purchase route on the 17th. He has views of a brighter future among the ranks in Civilian life back in Nashville, Tenn., his home town. Private Samuel has accepted a position with a restaurant down in the "Everglades" and also secured his discharge by purchase.

Captain Pratt, Photographic Officer; Staff Sergeant Lucas and Corporal Davidson are on an extended photographic mission at Wilson Dam (Muscle Shoals) Alabama.

Private, 1st Class, Cheek was transferred to the 91st School Squadron, this station, on the 20th, this being a mutual transfer with Private, 1st Class, Houston, of the 91st, who came to this Squadron.

The Squadron is anticipating entering a "Crack" bowling team in the Montgomery City League, which opens in the very near future. We understand that the two other squadrons here are also intending to enter a team. We are certainly glad to hear that our rivals here on the post will be among those to compete against in the City League, as we believe we have some good material to go into action on the opening night.

Ed. Note: How about news from other Squadrons at Maxwell, eh, what!

Patterson Field, Fairfield, Ohio.

Climaxing an exciting tournament filled with upsets and inconsistent playing, Captain Don Riley, Infantry, downed Captain Thomas H. Chapman, Air Corps, in the Fifth Corps Area Golf Tournament, by 2 and 1; while Major R.O.Probst, Engineers, won the Consolation from Colonel W.W. West, General Staff Corps. Other Flights and Consolations were: First - Captain C.M. McQuarrie, 10th Infantry, defeated Lieut. M.S. Roth, Air Corps, and Captain J. Johnson USA, Retired, downed Captain R. Colton, 325th Engrs; Second - Lieut. G.F. Smith, Air Corps, won over Captain H. O'Leary, Ordnance Dept, and Lieut. S. Stern, Field Artillery Res., CCC, won over Colonel R.B. Patterson, Adjutant General's Department; Third - Major R.O. Van Vliet defeated Captain N.S. Wiggs, Field Artillery Res., and Captain K.P. Cooley, 10th Infantry, defeated Lieut. Ruff.

The following indicates the activity of the Depot Supply Department at Patterson Field:

Cargo to and from the Supply Department During the month of August, 1937:

Air Transport: Outgoing, 77,318 lbs., Incoming, 47,634 lbs.

Freight and Express: Outgoing, 131.9 tons, Incoming, 245.9 tons.

Parcel Post: Outgoing, 2,552 lbs., Incoming, 2,271 lbs.

Truck: Outgoing, 103.4 tons, Incoming, 59.7 tons.

The warehousing program, which has been in progress at the Fairfield Air Depot, of re-binning and rearranging stock, which was started under the supervision of Captain G.V. McPike, and furthered by Captain R.L. Williamson, is now being rushed to completion by the present Depot Supply Officer, Major R.S. Heald. Bins, racks and tiers have been constructed with white pine lumber and are being painted white with black lettering. The approved method of numbering bins by the Materiel Division is being used.

The office of the Depot Supply Officer has recently been rearranged so as to provide more light for office employees. Desk trays have been dispensed with, and correspondence inserted in large manila folders for transfer from one unit to another. The absence of desk trays enables the janitor to accomplish his dusting more easily.

A service test is being made of assigning Stock Tracers from the Engineering Department to the jurisdiction of the Depot Supply Officer.

San Antonio Air Depot, Duncan Field, Texas.

Recent visitors at this Depot by air included Lieut. Colonel Morris Berman, Assistant Executive of the Air Corps Materiel Division, Wright Field, and formerly Executive Officer of this Depot to August 4th, last, on a cross-country flight in an O-25, September 20th; Major E.V. Harbeck, Jr., of the Office of the Chief of the Air Corps, September 13-16, while on a visit to Randolph Field; Major C.W. Ford, Air Corps Instructor with the Ohio National Guard, Cleveland, September 16-19, for repairs to his O-38 plane; and Captain W.P. Paul, of Hamilton Field, Calif., September 13-14, for repairs to his A-17 plane while on cross-country trip to Randolph Field.

Notification was received of the promotion to 1st Lieutenant of 2nd Lieut. Leonard P. Kleinoder, Air Reserve, effective September 24th. This officer is on extended active duty at this Depot with the 3rd Transport Squadron.

Second Lieut. Paul S. Blair, Air Reserve, reported September 10th for three years' active duty, and was placed on duty with the 3rd Transport Squadron at this Depot. As a Staff Sergeant and as a pilot, he had been an enlisted member of that Squadron since November, 1936.

Orders were received for the transfer of 2nd Lieuts. William R. Boutz and Nathan H. Coddington, Air Reserve, on extended active duty, from duty in the Hawaiian Department to duty with the 3rd Transport Squadron at this Depot, effective on their sailing on the transport from Honolulu on September 10th.

Interdepot transport service trips by person-

nel of the 3rd Transport Squadron were made by Lieut. L.P. Kleinoder, Air Reserve, co-pilot, with Staff Sergeant Tyler, pilot, and Staff Sergeant Simcoe, mechanic, to Middletown Air Depot, Pa., Los Angeles, Calif., Rockwell Air Depot, Calif., and return, September 8-14; Lieuts. T.K. Dorsett and J. Will Campbell, Air Reserve, pilot and co-pilot, respectively, to the Fairfield and Middletown Air Depots and return, September 10-14; and Lieut. P.S. Blair, Air Reserve, co-pilot, with Technical Sergeant Jackson, pilot, and Staff Sergeant McColbum, mechanic, to the Fairfield and Middletown Air Depots, departing September 18th.

Mr. James R. Williams, Senior Aircraft Engine Mechanic of the Rockwell Air Depot, Calif., asrived at this Depot September 13th for a few days' temporary duty, observing engine test methods and systems in use here.

Mr. Anas T. Economy, General Foreman of the Electrical Branch, Engineering Department, this Depot, departed on September 11th on a temporary duty tour of about 28 days, to visit several factories manufacturing aeronautical supplies in the East, as well as the Fairfield and Middletown Air Depots and Wright Field, studying methods of manufacture and maintenance of late types of aircraft electrical equipment and carburetors. Mr. Charles F. Wortz, Junior Aircraft Electrician of the Engineering Department of the Depot, also departed, September 17th, on a similar tour of about one month, attending a course of instruction in the detailed repair of electrical type instruments being manufactured for the Air Corps.

Technical Sergeant Edward L. Carr, formerly Staff Sergeant with the 61st School Squadron, Kelly Field, was transferred to the 3rd Transport Squadron on September 9th to provide for the additional technical sergeant allotted to the 3rd Transport Squadron.

Recent promotions in the 3rd Transport Squadron were Sergeant C.S. Rublee to Staff Sergeant, Corporal R.L. Cole to Sergeant, Private, 1st Class, Mike Solomon to Corporal, and Private G.J. Kester to Private, 1st Class, on September 10th, and Privates J.W. Jackson, M.R. Pierce and J.M. Price to Private, 1st Class, on September 1st.

Chanute Field, Ill., September 30th.

According to the Rantoul PRESS, seven new classes are to get under way at the Air Corps Technical School, Chanute Field, Rantoul, Ill., during the month of October. There will be three new classes starting on October 4th, three on October 11th, and one on October 25th.

The classes to start on October 4th include one regular army reserve officer class in communications, regular army enlisted men in carburetor specialists, and radio repairers and operators. Those to start October 11th include regular army enlisted men in airplane mechanics, propeller specialists, electrical specialists, and there is a class of regular army enlisted men to start October 25th in instrument specialists.

This will make a total of twenty-five new classes that have started at the Air Corps Technical School since the beginning of the new school year, August 30th. Several more new classes are scheduled to start during the month of November.

The school is operating at its highest degree of efficiency under the able direction of Lieut. Colonel Junius W. Jones, Air Corps, Commandant.

MECHANICS GIVEN CREDIT FOR AIR SAFETY PROGRESS

The mechanic should get the credit, in the estimation of Colonel E.A. Lohman, Assistant Commandant of the Advanced Flying School at Kelly Field, for the remarkable safety record which has been maintained there.

"He is the unseen and too often unsung hero of the Air Corps," remarked Colonel Lohman as he reviewed the record. "Of course, he does not stand alone in upholding the safety features of Kelly Field, but he is a vital and integral part of any flying."

Colonel Lohman also credited the thorough primary training at Randolph Field which the students receive before being sent to Kelly, as well as constant supervision and proper training by Kelly instructors.

"All these forces must work together," he added, "if a flying school is to safeguard the lives of its students. The recent fatal crash of Cadet Guy Edgerton was the sixteenth casualty at the field since the first class of 1933. In that period, 1041 students have been graduated. The fatality ratio is 1.53 per hundred."

According to Colonel Lohman, that 1041 constitutes approximately 96 percent of the total enrollment. Assuming 1⅔ percent fatally crashed, only 2⅔ percent is left to be eliminated by sickness, inability to complete the course, and other miscellaneous causes.

While commenting on the excellent work of instructors, both at Kelly and at Randolph, Col. Lohman was voluble in praising the work of Kelly Field "greaseballs." He declared that in three weeks many of our planes would be grounded were it not for our mechanics. No one ever knows how many hours they put in on Sundays, holidays, and nights in order to keep our planes in the air.

There have been 15 classes since the first class of '33. Only 16 casualties have occurred at Kelly. In that period, five classes had none while the second class of 1934 had the greatest number - three fatal plunges.

Kelly Field officials take great pride in their safety record, which is one of the best in the country. Major Isaiah Davies, Secretary of the Advanced Flying School, has a graph of the record under the glass of his desk. From this it is possible to compute the number of fatalities per class, per student graduated, or per student hour in the air.

- San Antonio Light.

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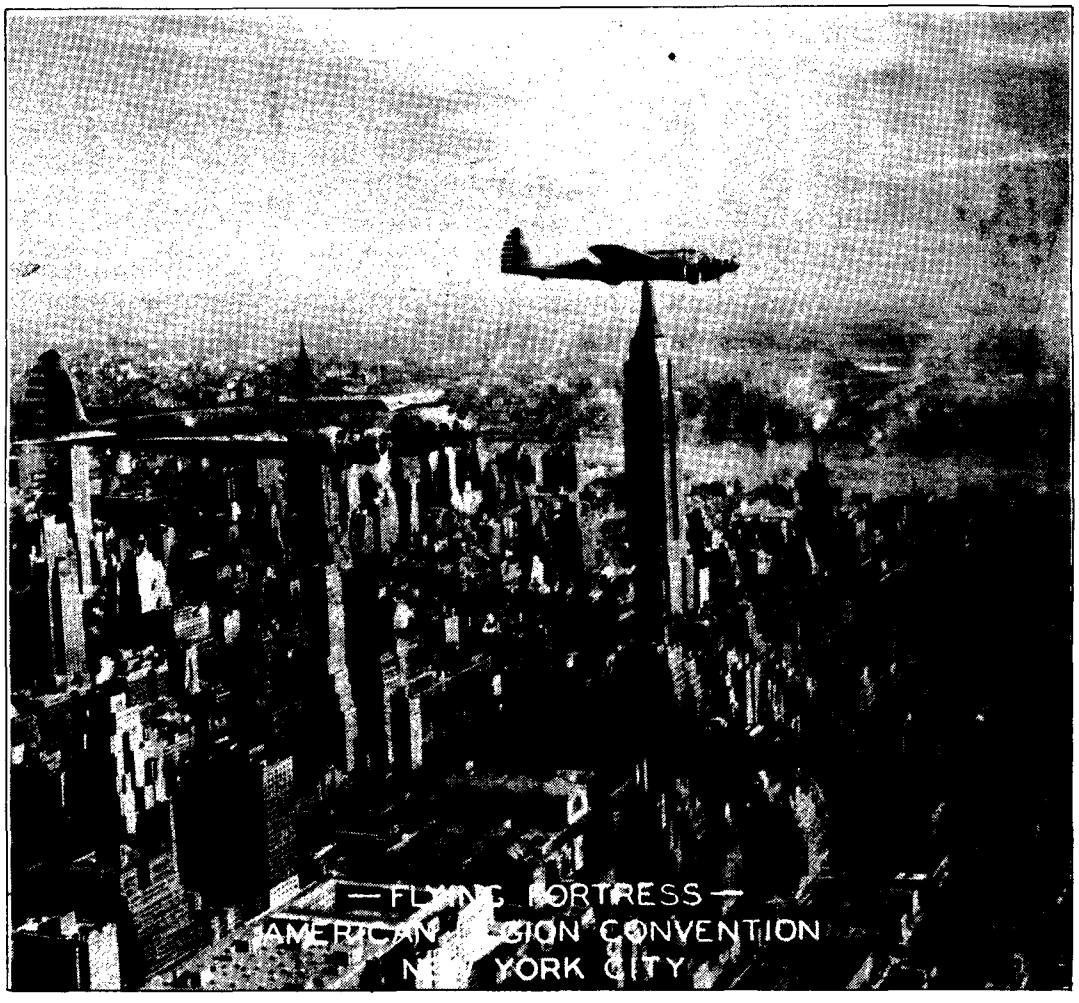
TO NEWS LETTER CORRESPONDENTS ---

Now and then a News Letter Correspondent makes inquiry concerning the dead line date for the contribution of material. There is no established rule for this, but if material is mailed so as to reach the Information Division on the 5th and 20th of each month it would help considerabl

AIR CORPS NEWS LETTER



—FLYING FORTRESS—
AMERICAN LEGION CONVENTION
NEW YORK CITY

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WAR DEPARTMENT
WASHINGTON

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VOL. XX AIR CORPS NEWS LETTER NO. 20.

Information Division, Air Corps — October 15, 1937 — 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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ECHOES FROM THE AMERICAN LEGION CONVENTION

PARTICIPATION BY THE THIRD WING

By the Barksdale Field Correspondent

The high light of the National American Legion Convention, held in New York City, September 20-23, 1937, was the GHQ Air Force participation on Tuesday, September 21st, involving the Second Wing, Langley Field, Va., and the Third Wing, Barksdale Field, La.

Composing the Second Wing were the 2nd Bombardment Group, consisting of four B-17 Bombers; the 8th Pursuit Group, consisting of eighteen Consolidated P-B2 Pursuit Bombers, and the 1st Pursuit Group, consisting of eighteen P-26 Pursuit planes from Selfridge Field, Mich. Mitchel Field, Long Island, was represented by the 9th Bombardment Group, consisting of B-10 Bombers.

The Third Wing was represented by the 3rd Attack Group, consisting of the 13th and 90th Attack Squadrons, each equipped with eighteen A-17A Attack planes, the total personnel numbering 36 officers and 36 enlisted men, under the command of Major P.L. Williams.

At 6:00 a.m., Sunday, September 19th, the 13th Attack Squadron, under the command of 1st Lieut. R.H. Lee, departed from Barksdale Field for New York, via Atlanta, Ga. Staying overnight at Bolling Field, D.C., the Squadron arrived at Mitchel Field, N.Y., on Monday morning. The 90th Attack Squadron, leaving Barksdale Field shortly after the departure of the 13th Attack, followed a route via Maxwell Field, Ala., and Pope Field, N.C., staying overnight at Langley Field, Va., and arriving at Mitchel Field on Monday morning.

Quarters were assigned shortly following arrival at Mitchel Field and instructions relative to operations on the following day were received. A cordial welcome was extended by Mitchel Field officers, many of the visiting officers being their guests while there.

Being free until 10:00 o'clock the following morning, many of the officers took advantage of the opportunity to become better acquainted with everything in general. This was to prove very interesting to many, as the majority of the Barksdale Field officers are from the West and the South, not yet contaminated by the affliction of speech, or what have you, which besets so many in a city as far north and as cosmopolitan as Manhattan and its adjoining districts.

Those of us who were fortunate, or unfortunate enough, as the case may be, to get into town, found the American Legion at play and, true to their traditions, were in complete charge of the city - a place where anything can happen and everything does happen, especially on such an occasion as this. Civic orders, rules and regulations seemed to have vanished completely, but everything was done in a good natured way. Everything except the spirit of the occasion was forgotten. It was contagious and was to be reflected in the demonstrations as we flew them the next day.

On Tuesday, September 21st, the first demonstration was scheduled to take place over New York City at 12:00 noon. The Third Attack Group led the formation, taking off at 11:10 a.m., followed by the 9th Bombardment Group, the 8th Pursuit Group, the 1st Pursuit Group and the 2nd Bombardment Group in the order named. The positions of the units in the formation were the same as the order of the take-off.

The Initial Point being Miller Field, Staten Island, at "H" hour less five minutes, the leading squadron, the 90th Attack, reached that point at 11:55 a.m. A minimum altitude of 2,000 feet was maintained throughout the flight.

Three passes were made over the city, the first being in column of squadrons, from the Battery along Fifth Avenue to the upper end of Central Park; the second in column of flights from the Battery along Fifth Avenue to Mount Vernon, and the third in a column of flights from Mount Vernon to Central Park, along Fifth Avenue to the Battery. On the last pass, the B-17 Bombers were given the throttle and they quickly passed over the remainder of the flights. After the second pass the 8th Pursuit Group left the column at Mount Vernon and followed the B-17 Bombers to Central Park, where a special demonstration was given after the B-17's had left the immediate vicinity.

For the second parade formation, the Third Attack Group took off at 4:25 p.m., C.S.T., followed by the remaining units in the same order as the first demonstration. This demonstration was scheduled to take place at 5:15 p.m., differing from the previous parade in that the for-

mation was in column of elements.

The route for the daylight flights was as follows: Mitchel Field, Valley Stream, Long Beach, Babylon, Huntington, Mineola, Miller Field, Battery, up Fifth Avenue to the upper end of Central Park, down the Hudson River to the Battery, up Fifth Avenue to Mount Vernon, Mount Vernon to Central Park, down Fifth Avenue to the Battery, Mitchel Field.

Led by the 3rd Attack Group, consisting of 36 A-17A Army Attack planes, flying in formation at 2,000 feet, the sun reflecting from their wings in bright flashes, the entire formation made an impressive sight to the thousands below. The sight of the planes from Barksdale Field, led by Major Williams, flying in wide sweeping turns around the Statue of Liberty, up Fifth Avenue and across the Battery, followed in quick succession by the other planes, was one that even impressed the pilots as they looked back across their wings. It was one of the largest aerial demonstrations that New York had ever seen and one that will not soon be forgotten.

Following the satisfactory completion of the daylight missions, the scheduled time was awaited for the night demonstration. The Third Attack Group took off at 10:35 p.m., followed, as in previous demonstrations, by the other Groups, except the First Pursuit, which did not participate in the night flight, and passed over the city in a column of elements at 11:15 p.m. The Barksdale Field Group flew with their formation lights on, making the planes more visible to the spectators. The procedure of this formation closely followed that of the daylight demonstrations.

As the planes passed over Fifth Avenue, 900,000,000 candlepower searchlight batteries of the 62nd Coast Artillery Anti-Aircraft Regiment at Fort Totten, N.Y., sent piercing beams of light toward the sky. Upon the completion of this, the last demonstration, the planes returned to Mitchel Field, landing by elements at approximately 12:10 a.m.

The Barksdale officers accepted without protest the news that the Group would not return to Barksdale Field until Thursday morning. On that day the departure from Mitchel Field was at 10:00 a.m., the 13th and 90th Attack Squadrons following their respective routes, both remaining at Maxwell Field overnight.

Shortly after the Group had effected a landing at Maxwell Field, the group of men walking towards the Operations Office would have caught anyone's eye. Members of the 13th Squadron, an impressive group to say the least, were burdened as it were with their "swagger sticks" acquired at Mitchel Field under questionable authority, and with the unescapable influence of the "big city" upon them. In spite of an air of superiority, etc., there was preserved a high degree of modesty and dignity, forming an impregnable defense against any criticism.

At 10:30 a.m., Friday, September 24th, the Third Attack Group landed at Barksdale Field, all planes and men intact, apparently in first class condition, again demonstrating the ability and efficiency with which this Group performs a mission, where and whenever it might be called upon to do so.

PARTICIPATION BY THE SECOND WING
By the News Letter Correspondent

In a crowd estimated at two and one-half to three million people, every spectator occupied a reserved seat when the Second Wing, GHQ Air Force, paraded against New York's skyline during the American Legion activities on Tuesday, September 21st. Thousands who had purchased peach baskets at four bits apiece, in order to get a better view of the ground parade through the maze of heads lining the sidewalks of the city's famous avenue, swayed dangerously on their rickety perches and wished to heaven they had not been so extravagent as squadron after squadron sped swiftly overhead. Legionaires, among them many World War pilots who had been out of touch with aviation since the days when their hands and feet played sweet music on the controls of Spads, Nieuports and Salmsons, were afforded an opportunity to compare the trim speedy planes of today's Air Force to the affectionately termed "crates" in which they fought the battles of twenty years ago.

The following planes, fully manned by combat crews, engaged in the Legion flight:

36 A-17A's from the 3rd Attack Group, commanded by Major P.L. Williams.
18 B-10B's from the 9th Bombardment Group, commanded by Lieut. Colonel C. W. Connell.
18 PB-2's from the 8th Pursuit Group, commanded by Captain Ned Schramm.
18 P-26's from the 1st Pursuit Group, commanded by Lieut. J.F. Egan.
6 B-17's from the 2nd Bombardment Group, commanded by Lieut. Colonel Robert Olds.

The Attack Squadrons, normally Third Wing units, were attached to the Second Wing during the Demonstration period.

On September 19th, General Brant, Commander of the Second Wing, Langley Field, and his staff, arrived at Mitchel Field, from which all operations incident to the aerial exhibition were conducted.

Throughout the following day, the air about Mitchel Field was filled with the drone of aircraft as the units from Barksdale, Selfridge and Langley Fields converged on the Long Island Base. As each unit landed, the planes were flagged to pre-designated parking areas where they

were staked down for the night. Liaison officers from Mitchel Field, schooled to near perfection in the answers to "Where do we eat?" - "Where do we sleep?" - "When does the next train leave for New York?" went to work with a vengeance as the dying engines gasped their last breath of 92 octane.

Three aerial parade formations were flown on Tuesday, the 21st; the first at 12:00 noon, the second at 5:15 p.m., and the third at 11:15 p.m., Eastern Daylight Saving Time. The first and second flights were identical, the formation making three passes over the route of the ground parade. Squadrons passed by the first time in column and the last two times in column of flights. The leading element of the Attack Squadrons, which headed the flight, maintained a speed of 150 m.p.h., and an altitude of 2,000 feet. During the third pass-by, the B-17's, which brought up the rear of the column, gave the throngs on the ground an idea of the speed of our most modern Bombers by speeding up and overtaking the remainder of the formation.

During the two daylight flights, the 8th Pursuit Group pulled out of the formation after the second pass-by and remained over Manhattan to stage the string formation which created so much favorable comment at the National Air Races at Cleveland early in September. The PB-2's also formed the letters "A.L." over the scene of the parade.

The night formation differed from the daylight flights in that the squadron of P-26's did not participate. As a precautionary measure, the separate flights were spread at increased intervals.

Major General Frank M. Andrews, Commanding the GHQ Air Force, cruising in his C-32 over the city, observed the noon flight. He was accompanied by General Gerald C. Brant, Commanding the Second Wing of the GHQ Air Force. Also, during the noon flight several O-46's and a B-18 hovered over the formation to obtain photographs.

A more convincing demonstration of the excellence of modern military aircraft and of the proficiency of the Air Corps flying personnel would have been difficult to attain, for with the exception of two flat tires and a scraped wing tip the flights were totally devoid of any mishaps. Radio contact with the flying units was maintained through the Mitchel Field Control Tower, and the rapidity with which the units cleared the airdrome on take-offs and landings was due in no little degree to the efficiency of radio control.

Newspaper reports on the flight were most complimentary, one paper going so far as to say that the aerial review "stole the show." Superlative as such a statement may seem, there is a certain amount of satisfaction in knowing that a routine flight over Manhattan received so much favorable comment on a day that was jammed with eye-filling spectacles on the pavement of Fifth Avenue. The streets were filled with high stepping feminine drum majors, with floats bearing legions of feminine charmers tossing everything from snowballs to oranges into the arms of spectators. And when the spectators in the street took time out to cheer the aerial activities at a moment when there was so much pulchritude on the ground to attract them, there was reason for a little backslapping by those who were doing the flying.

All participating units, with the exception of the Attack squadrons, departed for home stations on September 22nd. The A-17's took off the following day.

Hundreds of spectators, attracted to Mitchel Field by the never ceasing drone of motors, visited the Long Island Air Base during the three days of the concentration.

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THE B-17'S IN THE AMERICAN LEGION REVIEW

Six B-17 Bombardment airplanes, led by Lieut. Colonel Robert Olds, Commanding Officer of the 2nd Bombardment Group, Langley Field, Va., participated in the American Legion Review over New York City, September 21, 1937. The Group was based at Mitchel Field, L.I., flying the last position of the 100-plane review. Flights were made over the Legion Parade on Fifth Avenue at 11:00 a.m., 5:00 p.m. and 11:00 p.m. During the 11:00 a.m. Review, the "Flying Fortresses," in column of airplanes, were "opened up" near George Washington Bridge and raced above the 94 other planes, reaching the Battery in 3½ minutes. So terrific was the wind pressure against the gian ship that the windshield over the pilot's cockpit in one of the B-17's cracked at the high speed. The windshields did not break, however, and all planes finished the three flights of about one and one-half hours' duration each without incident.

One of the highlights of the Review was the NBC hook-up on which Col. Olds broadcast while flying his B-17 over Central Park.

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The 49th Bombardment Squadron returned to its home station, Langley Field, Va., on September 18th, after completing a very successful week in the field at Virginia Beach, Va. With six days of very favorable weather in its favor, the Squadron carried out an intensive program of record gunnery. Twenty-four enlisted men, members of combat crews, qualified as expert aerial gunners, many making very creditable scores. The Squadron is proud of this week of field training in that some very valuable and necessary work was accomplished.

A LITTLE "DOPE" ON 7TH BOMBARDMENT GROUP

Just eighteen years ago, the 7th Bombardment Group, the tactical unit of Hamilton Field, was organized at Park Field, Tennessee, as the 1st Army Observation Group. Its growth, from its inception on October 1, 1919, to its present-day status has been synonymous with the growth of all aeronautical science.

During these eighteen years its mission has changed from simple observation, which at that time was considered the most important phase of aviation, to the present-day bombardment task of not only finding but destroying the enemy. Its equipment has changed from its original Keystone Bombardment airplanes (then a marvel of efficiency) to the modern, huge Douglas B-18 type, using in between during the advancing years Douglas B-7 and Martin B-10 and B-12 airplanes.

The 7th Bombardment Group served its initial phase as the 1st Army Observation Group for only two years, becoming inactive in 1921. Redesignated as the 7th Bombardment Group, it was made active at Rockwell Field on June 1, 1928. Later, on October 29, 1931, it moved to March Field and, on December 5, 1934, to its present home at Hamilton Field. On March 1, 1935, the Group became an integral part of the GHQ Air Force, which was organized on that date.

At the present time the 7th Bombardment Group is composed of Headquarters and Headquarters Squadron, 9th, 11th and 31st Bombardment Squadrons, with the 88th Reconnaissance Squadron attached. Commanded by Lieut. Colonel George E. Stratemeyer, it is currently the prime air defense of the Northwest.

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MORE "FLYING FORTRESSES" PURCHASED

The Hon. Harry H. Woodring, Secretary of War, announced on October 8th the award of a contract to the Boeing Aircraft Company, Seattle, Washington, for 13 additional B-17B multi-engined Bombardment airplanes and spare parts therefor at a total net cost of $2,518,346.83.

The planes involved in this purchase are 4-engine Bombers. The B-17B is the latest series of the B-17 type and includes minor changes which have been found advisable as a result of the service tests which have been in progress for more than a year in the 2nd Bombardment Group, Langley Field, Va., with the B-17's, popularly called the "Flying Fortress."

Each of the airplanes involved in this order is powered with four Wright "Cyclone" engines, manufactured by the Wright Aeronautical Corporation of Paterson, N.J.

These Bombers can fly at speeds in excess of 225 miles per hour, carry five machine guns and a crew of from seven to nine men, including a commanding officer, pilot, co-pilot, navigator, engineer, bomber, radio operator, and gunners. All the members of the crew can freely change stations, and for long flights sufficient additional personnel can be carried so that the operators of the airplane may be relieved from time to time.

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VALUE OF AIR TRAVEL AS A TIME SAVER

In the life of an Air Force Commander, every minute counts. The value of a speedy command plane in saving hours and even days in the working schedule of Major General Frank M. Andrews, Air Corps, commander of the General Headquarters Air Force, was vividly illustrated in his recent visit to the air demonstration which was recently held at Fort Riley, Kansas.

Departing from his home station, Langley Field, Va., at 5:50 o'clock on the morning of September 30th, he flew to Fort Riley, via Louisville, Ky., and early in the afternoon arrived at the Cavalry School in plenty of time to witness the GHQ Air Force demonstration of aerial fire power. Taking off after the demonstration was completed, General Andrews was back at Langley Field at 1:15 a.m. the next day and at his desk at the usual time.

Other personnel making the flight with him in his Douglas C-32 command plane were Brigadier General Edward M. Shinkle, Assistant Chief of the Ordnance Department at Washington; Colonel Walter G. Kilner, Operations Officer, GHQ Air Force; Lieut. Colonel Russell L. Maxwell, Ordnance Officer; Lieut. Colonel Cedric W. Lewis, Signal Officer; Major Charles C. Chauncey, Assistant Operations Officer; Lieut. Hiette S. Williams, co-pilot; Staff Sergeant Arthur S. Andrews, Crew Chief, and Private L.A.L. Craig, Radio Operator.

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33RD PURSUIT SQUADRON GOES PLACES

"The 33rd Pursuit Squadron, Langley Field, Va., has really been going places andtaking part in demonstrations and reviews," says the News Letter Correspondent, "Captain Springer, leading the regular combat flight with the 8th Pursuit Group in the American Legion Review, which included 99 modern tactical ships from Barksdale, Selfridge, Mitchel and Langley Fields. Two day flights were made and one night flight.

The Red Cross wanted a flight of planes to fly over Washington on the 25th, and again the 8th Pursuit Group got the call, with the 33rd Squadron helping to form a symbolic cross over the city of Washington. The pilots not only enjoy these

(Continued on page 5.)

NEW SHOULDER TYPE SAFETY BELT
By the Materiel Division Correspondent

With a view to preventing head injuries in forced landings and crashes, a new shoulder safety belt has been developed at the Materiel Division, Wright Field. This belt, although it may be worn slack during flight, affording all necessary freedom of body movement, can be pulled taut instantaneously in impending accident, holding the pilot's body rigid in the seat.

The shoulder belt is designed in the form of two suspender-type shoulder straps which extend over the back of the seat and are fastened to an adjusting device on the seat, while the opposite ends are brought forward and fastened in conjunction with the regular pilot's lap-type belt. By pulling the release latch on the lap-type belt, both belts are instantaneously opened, permitting the aviator to jump with his parachute if he so desires. When worn slack, the aviator may lean forward in the seat approximately 60 degrees. A single upward pull of a chain at the front of the seat places the belt in the taut position, holding the body of the flyer immovable. Since recent medical reports have indicated that a large percentage of fatalities which occur in connection with crashes or forced landings are the result of head injuries, it would seem that the belt would have an important place in modern flying equipment.

Another advantage of the shoulder belt not related to safety is its use in the taut position while the aviator is operating a stationary machine gun. Under these conditions the pilot's body would not be jarred out of position and better aiming could be obtained.

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CURTISS EXECUTIVE VISITS AIR CORPS FIELDS

Mr. Burdette S. Wright, President of the Curtiss Aeroplane Company, division of the Curtiss-Wright Corporation of Buffalo, N.Y., and formerly a Captain in the Air Corps, visited the San Antonio Air Depot, Duncan Field, Texas, recently, greeting old friends and discussing aeronautical matters with the Commanding Officer. Mr. Wright was traveling by air in a Stinson Cabin plane, and also visited the other Air Corps stations in the vicinity of San Antonio. Mr. Warren, Engineer with the Curtiss Aeroplane Company, was also a visitor at the San Antonio Air Depot, conferring on engineering matters connected with airplane construction. From San Antonio he was scheduled to proceed to Barksdale Field, La., for conference in connection with the A-18 Attack airplanes.

33rd Pursuit Squadron goes places
(Continued from Page 4).

trips and demonstrations, but from a tactical point of view these flights have tended to improve the flying of each man concerned."

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ULTRA MODERNISM AT ITS HEIGHT

The Materiel Division at Wright Field is one of the show places of Dayton, and the citizens of that community justly feel proud of the Air Corps Experimental Engineering plant at that field.

Wright Field is the Mecca of individuals connected in one way or another with aviation; also air-minded citizens whose travels take them to or through Dayton make it a special point to drive out to Wright Field.

Not long ago, one of the Wright Field guides, conducting a party of visitors around the field, paused in front of some modern type Air Corps planes parked on the line and proceeded to deliver a well rehearsed lecture regarding each of them.

"This," he said, pointing to a huge plane, particularly familiar to citizens residing in the vicinity of Langley Field, "is the B-17 Bombardment airplane popularly termed the 'Flying Fortress,' ****; this one is the Northrop A-17, which is used by the Attack Squadrons of the Air Corps*****; this little fellow here is the very fast little P-26 Pursuit plane which is flown by the First Pursuit Group at Selfridge Field, Mich., and that big fellow over there is the Douglas B-18 Bomber flown by the Bombardment Group at Hamilton Field, Calif., and --"

At this juncture there was an interruption. A little old lady at the rear of the gathering, who appeared to evince great interest in Uncle Sam's latest type combat planes, caught sight of a C-8A Fairchild Photographic plane (purchased by the Air Corps in 1931). Its appearance did not seem, in her opinion, to fit in with the modern charadteristics of the new combat airplanes nearby.

"Guide!" she called out, pointing to the C-8A, "is this the airplane that was built by the Wright Brothers?"

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MORE BT-9's FOR KELLY FIELD

Four more BT-9 training airplanes were added to the equipment of the Advanced Flying School, Kelly Field, Texas, during the first week of October. The planes were ferried to their destination from Glendale, Calif., by Major W.E. Richards, 1st Lieuts. R.F.C. Vance, J.H. Bundy and Troup Miller.

V-7514, A.C.

PILOT BALLOON OBSERVATION IN HAWAII

By Lieut. Harold L. Maddux, A. C.

An unusually long pilot balloon observation was made recently at Wheeler Field, T.H., which constituted a record for the Air Corps Weather Station at that field. The observation started at 6:50 a.m., and was concluded at 7:46 a.m., when the balloon burst at an altitude of 33,900 feet, after having been followed by the observer for 56 minutes.

The prevalence of cumulus or scattered strato-cumulus clouds. due to orographic influences at this station, ordinarily prevents pilot balloon observations of any very great length. On this occasion, however, there was present in the sky only one-tenth of strato-cumulus cloud, i.e., the canopy was only one-tenth covered. When the balloon was released, the surface wind was from the northwest with a velocity of seven miles. The horizontal projection of the balloon's flight shows that the wind direction was generally east and northeast, with a velocity between eight and twenty-one miles per hour up to 10,500 feet. Between 10,500 and 20,700 feet, the wind was northeast and north, with an average velocity of six miles per hour. At an altitude of 21,300 feet the wind direction shifted abruptly to south-south-west, with a velocity of two miles per hour, from that altitude on the wind direction was south and south-south-east, with an average velocity of six miles per hour up to 30,300 feet. Between 30,900 and 32,100 feet, the wind direction was directly west with an average velocity of six miles per hour. Th last three minutes of the balloon's flight showed variable winds, shifting from south through east to north-north-east, with a velocity of two miles per hour.

The maximum horizontal distance of the balloon from point of observation was 28,470 feet at the 49th minute of the observation. The barometric pressure, reduced to sea-level, at the time of the observation was 30.07 inches, temperature 68.5 and relative humidity 84%.

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JUNIOR INSPECTOR JOBS FOR RESERVE PILOTS

Lieuts. Joe E. Barton and John L. Templeton, Air Reserve, recently terminated their active duty tour with the 49th Bombardment Squadron, Langley Field, Va., to accept positions with the Department of Commerce as Junior Inspectors.

"These two men are highly thought of by all who knew them," says the News Letter Correspondent, "and both the Squadron and the Group deply regret the loss. Our sincere wishes for good luck follow these two."

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Watch out for the next issue of the News Letter, which will be a special Air Corps Technical School number.

WEST COAST FLYERS VISIT SELFRIDGE FIELD

Speeding over the Rocky Mountains, the Great American Desert and the western plains, twenty-one brand new Northrop Attack airplanes of the 17th Attack Group roared into Michigan on the night of September 12th and took sanctuary at the Army Air Base at Selfridge Field. Led by their Group Commander, Lieut. Colonel John G. Colgan, 42 officers and enlisted men inspected the field the following day and then took to the air again and sped on their way south. The flight was made for the purpose of familiarizing members of the General Headquarters Air Force stationed on the West Coast with the facilities and operation of other Air Bases throughout the country.

Practice in moving whole squadrons and groups rapidly by air from one coast to the other, a most vital phase of air defense studies, was likewise the mission of the flight, according to Major Victor H. Strahm, Operations and Training Officer of the Group. Following the visit to Selfridge Field, stops were scheduled to be made at Dayton, Ohio; Pope Field, N.C.; Maxwell Field, Alabama, and Barksdale Field, La., before returning to the home base of the Group at March Field, Calif., some 50 miles from Los Angeles.

The airplanes with which this well known Group is now equipped are the latest in design to be delivered to the units of the GHQ Air Force. Each plane carries six machine guns, numerous small bombs, and has streamlined special tanks for laying smoke screens. The retractable landing gear has increased the speed of these ground-strafers to nearly 200 miles per hour, and fuel has been provided for more than six hours of sustained flight.

Personnel of the 17th Attack Group participating in the flight included, in addition to Col. Colgate and Major Strahm, Majors Emil C. Kiehl, Samuel G. Frierson, Louie C. Mallory, Perry Wainer, 1st Lieuts. Donald H. Baxter, William H. Maverick, Hudson H. Upham, Thomas S. Moorman, Jr., Donald O. Vars, 2nd Lieuts. Carl Swyter, Frank R. Cook, William E. Creer, Conrad J. Herlick, Clyde Box, Henry R. Spicer, Arthur W. Kellond, Delmar E. Wilson, Donald W. Eisenhart, Ben I. Funk, John H. Turner, Wallace E. Nau, Murray A. Bywater, Tech. Sgt. H.D. Leroy, Staff Sgts. T.T. Dundore, L. Carter, C.D. White, W.M. Palmer, E.L. Higgins, L.W. Chlosta, Sgts. I.E. Howard, M.J. Martini, L. Sviechoviez, Corporal Y.A. Stranad, Privates H.K. Roberts, M.J. Auer, W.E. Brausa, H.B. Dintaman, W.C. Osburn and E. Decker.

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Fifty members of the Coast Artillery School, Fort Monroe, Va., paid a visit to the 96th Bombardment Squadron, Langley Field, Va., on Sept. 18th and gave B-17 No. 63 a very thorough inspection.

AN ADEQUATE AIR ARM FOR THE NATION'S DEFENSE

ADDRESSING on September 23rd, last, the convention of Reserve officers at Oakland, Calif., Major General C. Westover, Chief of the Air Corps, spoke as follows:

"For three consecutive years now I have had the pleasure and privilege of being present at the annual convention of the Reserve Officers. It gives me pleasure to meet with men engaged in important pursuits who are willing and able to devote a portion of their valuable time to national defense. I count it a distinct privilege to address you in order to acquaint you with some of the problems which confront the Army Air Corps in its vital effort to provide an adequate air arm for the nation's defense, and to ask your continued interest and support of the program.

While the great majority of you are undoubtedly interested in every phase of the military establishment, obviously you want me to discuss primarily subjects closely related to the Army Air Corps Reserve. Presently I shall do this, but first I want to emphasize another matter which I fear is too often overlooked. The Air Corps Reserve comprises but a small portion, numerically, of the total Reserve strength. For years, however, I have held strongly to the conviction that none of us can afford to be primarily Air Corps, Infantry, Field Artillery, Cavalry, etc. Every military man is primarily a soldier. All of us in the War Department are coming more and more to the feeling that officers of the various branches cannot separate themselves into little water-tight compartments and work exclusively for their respective arms.

It has been demonstrated on the battlefields of three continents within the space of the last few months that battles are won by military teams. True, these teams are composed of elements - Infantry, Cavalry, Engineers, etc., - the combat branches, which are supported in the field by the supply and technical services. Without everyone of these essential elements no fighting team is complete, nor can it deliver at maximum efficiency.

Years ago there was a feeling, in some quarters, when any new arm was created, such as the Air Corps or Chemical Warfare services, that these 'young upstarts' were interlopers; that they were taking the money away from the older services. That feeling was a hold-over from the time when we had a small standing army - a few regiments at isolated posts.

The World War washed away, or should have, the last vestige of that feeling. Thinking military men now realize that military strength cannot be counted in squads, troops, squadrons, or even in Divisions. Successful war in modern times is no longer a skirmish between tribes, mobs, or hastily assembled and hurriedly equipped little units of warlike men. As a matter of fact, manpower may not now be the best measure for military strength. Man-power is merely one of the essential elements. Transportation, manufacture - all industry - must be mobilized and organized to achieve victory. The old political rallying cry, 'A million men can spring to arms over night' is now recognized as a futile cry of pacifists, pinks or the uninformed.

The point I wish to make, the thought I wish to leave with each of you, is that when men today, anywhere in the world, go to war they do it primarily, not as Infantrymen, Artillerymen, or Flyers, but as working members of the fighting team of combined arms. That is why every up-to-date, worthwhile officer must be familiar with the tactics and the strategy of all the arms. Tactics are not learned on the drill ground. Individual or unit training in its more rudimentary elements may be taught there, but tactics are learned in our higher schools and they are tried out in Army maneuvers and perfected in exercises involving all the arms and services.

With this preliminary therefore, gentlemen, I feel no hesitancy in taking a few minutes of your time to tell you something of the problems, plans and policies of the Air Corps as it fits into the national defense picture.

First, for some specific details on the Air Corps Reserve plans and policies in which I know you will be interested.

For many years following the War all we were able to do was to give the Reserve flyers an opportunity to fly a little on their own time at our Air Corps stations. The planes were few in number, funds for gasoline and oil and maintenance were extremely limited and, as a consequence, the War Department was often charged with abandonment of the flying reserve and with lack of interest in keeping it in an up-to-date, well trained and healthy state.

Much of that criticism was unjust. After the War there was a general let-down in provision of funds for military purposes of every character. A great many people felt that we had just concluded a war to end all wars. Re-armament in Europe and succeeding conflicts had just began to impress us with the necessity of maintaining an active military establishment in this country when a terrific and general fiscal depression settled on the world and did not leave America out. The provision of food and shelter for the unemployed left little money to provide for anything else. So, we have had a hard time during a great many of the

twenty years since the war in securing the financial sinews to provide as large a military establishment - Regular, National Guard and Reserve - as many of us felt we should have.

True, the Reserve was allowed to deteriorate and flying time was cut to the minimum, but during those same years the Air Corps of the regular establishment was reduced to a pitifully inferior state of size and effectiveness. Now that the national consciousness has awakened to the vital necessity for an increase in size and efficiency for the regular establishment, that same impetus is making it possible for us to make more adequate provisions for the Air Corps Reserve. Last year thirty-three new airplanes were furnished to Reserve Units. This year we are buying thirty-three more and next year we have funds in the budget for an additional thirty-three. These planes are of modern type with the latest equipment in every regard.

I am informed that Corps Areas are progressing as rapidly as possible with the plan which the War Department approved more than a year ago of organizing Air Corps Reserve officers into military units - squadrons, and groups - to insure that organizational as well as individual training can be accomplished. This is a far-reaching step in the right direction. It will enhance materially the general value of the Reserve in the Air Corps.

We have sufficient funds available to call between five hundred and five hundred fifty Reserve officers to extended active duty for periods from three to five years. These men will be put into GHQ tactical units for the most part and will become working members on exactly the same status as regular officers; that is, flight leaders, engineering officers, operations officers and group staff officers. Not only is it our desire to make these men as effective as the regular officers in those units, but it is absolutely essential that we so employ them, because we have not enough regular officers to furnish complete complements for our squadrons. It is unfortunate, but it is unavoidably true that the great progress in recent years in the development of Army airplanes has made it more difficult to fit the flyer without recent training into the active combat unit. No longer is it enough for an Army airman to be a capable pilot. He must be skilled in radio technique and navigation, and he must be familiar with the many modern devices and accessories which have been built into the up-to-date fighting airplane.

During the last war we turned out more than thirty thousand flyers, each with less than two hundred hours, put them in airplanes and sent many of them out to do combat. We can never do that again. We have important reasons preventing any such procedure in the future. In the first place, these air combat crews will be riding in a machine which may cost a quarter of a million dollars, and which takes a long time to build if it has to be replaced. It is too powerful and too important a fighting machine to be intrusted with any but a well-trained crew. Likewise, we know from what is going on in the rest of the world, whomever our opponent may be, he will oppose us with excellent aircraft manned by thoroughly trained and experienced crews. It will take six months at a minimum to train the military pilot of the future, even in war time. Then it will take another six months to give him the unit and organizational training to fit him for air combat.

It is the realization of these facts which has assured and continued our interest in our flying reserve. The men whom we are turning out from our flying schools and whom we cannot, unfortunately, take into the regular establishment for lack of funds, have, and will continue to have for several years, if they stay in any branch of the civil flying game, a very high potential value, since they will have had at least that first six months' training and can start immediately on the second six months' phase when hostilities threaten.

Often I am asked as I travel over the country, how may Reserve officers do any worthwhile peace-time training the better to fit them into the military set-up. An example came to my attention recently which I think is the best answer to that query. At Schoen Field last July a group of Reserve officers assembled for their two weeks' training period. They organized themselves into a squadron, with all staff and command positions manned by Reserves. They took the six planes which were available to them, made up their flying schedules, and conducted their operations so thoroughly and efficiently that each pilot was enabled to secure more than fifty hours of flying in the two-week period. This pilot time included more than ten hours blind flying per pilot; it included night flying, radio communications, photography, and formation flying in addition to excellent instructions in essential ground subjects.

Now for a brief discussion of more general military topics. I have noted a tendency of late in certain quarters, both in this country and abroad, to point to the Ethiopian war and to the struggles now in progress in Spain and China as evidence of the fact that airplanes are not vital nor essential war machines and that Air Force operations do not have the far reaching effect on military campaigns many have long contended. As you Air Corps Reserve officers have gone about your daily pursuits, you have undoubtedly

met many people who have made queries like these to you, knowing that you are Army flyers: 'Why is it that Japan does not destroy Chinese cities with her Air Force? How does it happen that in Spain air operations have not been more extensive and conclusive?'

Questions like these have been propounded to me frequently, some of them by friends of ours who are not antagonistic to our purposes but are really asking for information which they have not been able to secure in tangible form from press reports. Others, and probably the majority, come from individuals really at heart antagonistic to military aviation and are asked in the hope that they will embarrass us.

Here, briefly, are the explanations which I make to such queries. I explain that all air operations are divisible into two distinct categories. First, there is the use of airplanes in conjunction with ground arms which form a combat team. When thus employed airplanes furnish observation for the Infantry, fire-control data for the Artillery, and information and photographs for command and staff purposes. Attack aviation is also frequently used as a highly mobile 'air artillery' for a direct assault on ground troop concentrations, troop and transport columns, etc. Then I point out that the second and major sub-division of air operation is what we term 'air force employments.' Here, large units of Bombardment aircraft may be employed far beyond the influence of ground arms against strategic centers such as great cities, important commercial arteries, manufacturing centers and fleets of surface craft.

I then show that Italy employed aviation very effectively in Ethiopia in conjunction with her other arms; that, in fact, many of her own leading military men have pronounced airplanes one of the decisive factors in the hasty conclusion of those campaigns. I also show that both in Spain and China similar operations have proved successful and have materially influenced the progress which the military team has been able to make. The principal point to bear well in mind, however, is that there have been no modern Air Force operations attempted in either of these three theaters. Anyone, therefore, who attempts to draw any conclusions as to the probable effect of Air Force operations from the fighting either in Ethiopia, Spain, or China, as they have occurred to date, makes this grievous error - undoubtedly due to a confusion between Air Corps operations and Air Force operations. I think all of us who have the interest of military aviation close to our hearts should be quick to do all that we can to prevent false conclusions being drawn about air power.

There is another matter which I wish to bring to your attention. We have heard the War Department criticized at one time or another because, in the opinion of these critics, it was not devoting enough attention and spending enough money on aviation. It is always easy to criticize destructively. Too often criticism of that type is made without a full realization of the whole picture. Because I have noted this tendency, I am now anxious to tell you some of the things the War Department has done, is now doing and plans for Army Aviation. One of the tangible evidences is the fact that we have now more than one thousand planes on order, many of which are nearing completion. These are the most modern military types and, in my opinion, are equal to or superior to those being produced in any country in the world. The budget for 1938 provides for over 700 additional planes. If we continue at our present rate of progress we shall have the Army Air Corps built up to the 2320 airplanes authorized by 1940. Our enlisted strength has been increased to 17,784 men as of June 30th, last. Our commissioned strength has not been proportionately increased, but the War Department is thoroughly conversant with our problem, and the reason for our commissioned personnel shortage is due to limitations of funds for their pay.

I have found both the Secretary of War, the Honorable Harry H. Woodring, and the recently appointed Assistant Secretary, the Honorable Louis Johnson, to have the interest of military aviation close at heart. I know that I am correct when I say that no other phase of military affairs gets more of Secretary Woodring's time or personal attention than does Army aviation and the procurement of aircraft. In this connection, I want to quote from a speech he made over a nation-wide hook-up, believing that some of you may not have had the opportunity to hear his remarks. Said the Secretary of War on the night of August 6th:

'At the present rate of procurement the strength of 2320 planes for the Air Corps will be reached by June 30, 1940. There have been great advances in aircraft development in the last three years. This strength of 2320 planes, when obtained, will give us an Air Force far more powerful than that fixed by the Baker Committee of 1934. Our new planes possess greatly increased power, speed, endurance, maneuverability and reliability. We can say with confidence that the airplanes now being delivered to the United States Army are the best and most highly efficient in the world.'

Mr. Woodring also said: 'We have made more recent progress in development of our Air Force than in any other direction. Four years ago we had a small and very widely scattered Air Force under a number of different commanders. Today we have a compact and highly efficient Air Force under a single commander. It is a highly mobile force of great striking power. In conclusion, our personnel

and planes are at least the equal of the world's best.'

The Honorable Louis Johnson, Assistant Secretary of War, on August 14th, last, in an address at the dedication of an airport in his home State, West Virginia, showed his interest in Army Aviation and his great pride in its accomplishments. He pointed at length to what our Experimental Division at Wright Field has done for the civil aviation industry and the great influence military aviation has played since the beginning in the world of aeronautics.

I think it behooves every patriotic American to get behind our military leaders and support their efforts in our behalf; to aid them in every possible regard in their earnest attempt to further the progress of our air arm. Take it from me, the Secretary of War has an air program - the biggest air program this nation has ever had in peace time. He is keenly alive to our troubles and our needs. The least we can give is our whole-hearted support and full cooperation.

You Reserve officers who flew with us during the War and who have maintained your Reserve status during all the intervening years have, I feel, lasted out the long dry spell. You have come with us over the worst part of the journey. I sincerely believe that you will be rewarded henceforth in many tangible ways. In the first place, I can assure you that I and all my staff realize your great value to the air arm in the military defense of the nation. Every effort will be made to permit you to maintain your fighting efficiency at a high level. If trouble comes, many of your members will be qualified to hold and will be placed in positions of great responsibility."

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MIMIC WARFARE ON THE PACIFIC COAST

The Pacific coastline, just off-shore from Bolinas, will shortly be the scene of an intensive mimic war, where screaming Bombardment airplanes will bring down in flames innumerable enemy Pursuit ships in the guise of a target towed from another airplane.

In order to maintain their ability "to fight, to bomb, to shoot," the 7th Bombardment Group will shortly start intensive training to sustain their aerial marksmanship. The target, a sleeve-like canvas cone, towed behind an airplane, will be attacked from all angles by the Hamilton Field aerial gunners.

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Lieut. Colonel Orlo H. Quinn, stationed at Chanute Field, Ill., was assigned to duty as student to take the photographic course at the Air Corps Technical School at that post.

SELFRIDGE PURSUITERS TO TEST NEW TARGET

Citizens of Michigan living in the vicinity of the various aerial gunnery ranges used by the fighting planes of the famous 1st Pursuit Group of Selfridge Field, Mich., will soon be stretching their necks at a most unusual sight. The Group is about to begin tests on a new type of aerial gunnery target which promises to be a vast improvement over the old familiar white sleeve target.

According to Major Edwin J. House, Commanding Officer of the Group, who recently returned from Dayton, Ohio, where the new target is being manufactured at the Materiel Division at Wright Field, the new target is in the form of a panel 60 feet long and 6 feet wide. It is so designed that it may be towed through the air with the plane of the target either horizontal or vertical. Tests have already been conducted, using as much as 7,000 feet of towing cable, although it is thought that 4,800 feet will provide sufficient protection for the towing airplane.

By using a target of this type, recent changes in Pursuit gunnery training to include mass firing on large ground targets can be extended to include mass firing at a flying target. The huge panel, towed by a bombing plane flying one mile ahead, will be used to test the accuracy of aerial fire delivered by whole flights and squadrons firing simultaneously while maneuvering in mock air battles. An electric windlass provides means of releasing and retracting the target.

Earthbound citizens need have no fear of a rain of bullets from the sky - at least so far as our own Army is concerned - since all firing on aerial targets is done far out over the lonesome waters of Lake Huron where only an occasional ore boat is to be seen. Even then firing must be halted until all possibility of danger is past.

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SCORE ONE FOR THE WORLD WAR VETS.

Touching on the participation of the 36th Pursuit Squadron, Langley Field, in the aerial demonstrations over New York City during the time of the American Legion Convention, the Scribe of that outfit says that it came home convinced of at least one thing, viz: Our modern equipment may make us more formidable a force in time of war but, when it comes to celebrating peace, the World War Vets have it over us like a chattel mortgage. "Our most dependable social lions," he declares, "came back like lambs after a few hours on lower Manhattan."

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THE HAWAIIAN ISLANDS

By an Air Corps officer who served there

On a perfect day towards the end of June, after more than the usual baggage trouble, we terminated a vacation in California and set foot on the Army transport "Chateau Thierry." This was the first of many happy surprises for, compared with the many horrible tales we had heard of travel by this means, our accommodations were very comfortable.

Our trepidation at the expectation of mal de mer were soon allayed, and the six-day passage settled into a routine of pleasant lassitude broken thrice daily by the assuaging of the pangs of hunger, never quite so acute as on shipboard.

The most vivid recollections of a smooth passage are those of constant motion, of the almost black and metallic appearance of deep water and of our first definite knowledge that flying fishes (Malolos) really fly.

At about 2 a.m. of the sixth morning out of "Frisco," the delightful cool breeze which had been entering our port hole suddenly ceased, and in our restlessness we realized that the throbbing of the engines had ceased, as had the lulling rocking of the ship. Knowing we were near our destination, the first sunbeam found us on deck, eager for a view of our new home. Imagine our surprise at seeing the sun rise over Diamond Head. In our ignorance we had expected to see all land to the westward, but ships arriving during the night anchor in the lea of the southeastern tip of Oahu, the world-famous extinct volcanic crater known as "Diamond Head."

Within a few minutes we were thrilled to be greeted by a large mixed formation of all types of military airplanes stationed in the territory, constituting our first view of an "Aloha" flight, which is sent to greet each Army Air Corps officer on his arrival and to speed him on his departure. In each case a thrill of pride in the Corps is bound to be felt.

About eight o'clock we docked, and another tremendous thrill was felt when the large military band struck up with "Aloha Oe," and the many friends of each person on board strung beautiful flower "leis" around his neck. This custom is not confined to the military service but applies to every person arriving at or leaving the islands.

From the docks, after attending to the required formalities, we were driven through the city of Honolulu, Fort Shafter and the navy yard to the dock, where we embarked on a 15-minute boat trip to Luke Field, situated on little Ford Island in the center of Pearl Harbor, the Navy's anchorage and base.

By the end of the first few months, mainly spent in getting settled, acquainted and started on new duties, we had driven and flown around the Island of Oahu sufficiently to have a very good idea of the scenery and topography and had gained a knowledge of a number of customs and the forms of amusement available.

The first beautiful drive taken by everyone is up through Nuuanu Valley to Nuuanu Pali, where the bottle-neck formation of the hills gives rise to the violent air currents so universally talked about because so unusual. On the trip up the steep, well-paved road, beautiful houses in ideal settings are the rule. Lovely Oahu Country Club and its grounds appear on the left. An unusual tea room, operated by the Salvation Army, is a little further up the valley but off the main road.

After passing the last buildings, the road winds through forests, dotted here and there with light-topped kukui trees and comprising luxuriant greenery. Near the Pali and across the valley from the road appears a small waterfall which, on exceptionally windy days, is blown back upon itself in a spray and only falls a few feet intact.

After a few more bends in the road and a slightly steeper incline, one's breath is fairly taken away by the suddenly appearing view from the pass itself. The beauty of the hill formations on each side, the sudden drop straight ahead, and the beautiful view of the low land and sea constitute a scene which will never leave the memory of one fortunate enough to have viewed it.

The road continues down the side of the mountain and then splits so that the traveler can round the Eastern Point of Oahu, stern Makapu Head, passing Coco Head and Coco Crater; Fort Ruger, a Strong Coast Artillery defense; and Diamond Head, and returning to Honolulu by means of a drive of about fifteen miles. The traveler may also take a drive of some 100 miles, circling Windward Oahu and returning to Honolulu through the central plateau. This latter trip contains so many interesting features that it will be described later.

The next trip usually made is to the summit of Mount Tantalus. The verdure throughout the climb is so dense that one has to stop and walk to the edge of the steep slope of the mountain itself before catching the magnificent views of Honolulu, its harbor, Punchbowl Hill, Diamond Head, Waikiki beach, the Pacific to the south and east and the neighboring islands of Molokai and Lanai. If the season is spring or early summer, the profusion of color lent by the many flowering trees adds to the beauty of the picture. The Poinciana, or Flame

tree, lends dashes of deep red while the less spectacular but individually more beautiful yellow shower and purple shower trees harmonize in the riot of color.

If one is fortunate he stumbles on the rarer specimen of a "Rainbow Shower" tree, which is immediately recognized because so aptly named, due to the variety of colors contained in its cluster-shaped blossoms.

In late May and early June the lover of unusual and particularly beautiful flowers will forego the pleasure of early retirement for the purpose of viewing the blossoms of the night-blooming Cereus. These blossoms are fully a foot in diameter and at least six inches in depth. They are predominantly white with yellowish centers and are exotic beyond casual description. The vines on which they bloom look much like "Aaron's-rod Cactus" but trail along rock walls. The only public places where they are planted, to our knowledge, are at Punahou Academy and Kamehameha schools.

In the next article it is proposed to elaborate on the trip "around the island."

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AIR FIGHTERS OF THE GHQ AIR FORCE TO WEAR NEW SHOULDER PATCH

Unadorned no longer will be the broad shoulders of the officers and enlisted men of the General Headquarters Air Force, according to a recent announcement by Major General Frank M. Andrews, commander of that organization.

The General stated that the Secretary of War, the Honorable Harry H. Woodring, had approved a distinctive shoulder patch for the air guardians of the United States.

Symbolizing the speed which characterizes the Bombers, Pursuit, Attack and Reconnaissance planes of the GHQ Air Force, the new shoulder patch will consist of an ultra-marine blue three-bladed impeller, the curved surfaces emanating from the points of an imaginary three-quarter-inch equilateral triangle. This will be outlined against an orange disk which will be two and three-quarters inches in diameter.

The three blades of the impeller, or propeller in motion, will represent the three wings of the GHQ Air Force. This was the number of wings in the original organization and is the number now assigned. The First, a three-group unit, is on the Pacific Coast; the second, with four groups, is on the Atlantic seaboard, and the third, a two-group organization, guards the Gulf Coast.

The patch will be worn on the left shoulder on both officers and enlisted men. It will provide a colorful addition to the present khkahi and olive drab uniforms. It is expected that the Philadelphia Quartermaster Depot will start issuing it within the next few months.

General Andrews requested the War Department for authority for the shoulder patch several months ago and was asked to submit a design. The approved patch is the result of the collaboration of many members of the Air Force and is believed to represent well in heraldric form the organization and capabilities of the GHQ Air Force in National Defense.

Staff officers at headquarters stated that approximately 7700 enlisted men and 550 officers would be wearing the patch when everyone has been outfitted. These are stationed at Langley Field, Va.; Mitchel Field, N.Y.; Selfridge Field, Mich.; March and Hamilton Fields, Calif., and Barksdale Field, La.

In his letter of approval, the Secretary of War described the shoulder patch as follows:

"The design represents the GHQ Air Force, that is, the striking combat element of the Air Corps as originally organized into three wings. The action expressed by the three-bladed impeller is symbolic of speed, mobility, flight through space and destructive power exemplified by the GHQ Air Force."

The GHQ Air Force, with General Andrews as its first commander, and directly under the Chief of Staff of the Army, was organized and placed into active service on March 1, 1935, as the culmination of years of agitation for an Army air force. Its organization followed closely on the heels of the recommendations of the Baker Board, appointed by the Secretary of War in 1934 to determine the needs of America's air defense.

Two GHQ Air Force concentrations have been held, using all available planes. The first was held in Florida in December, 1935, back in the days when it was struggling with obsolescent airplanes and the inevitable creaks and groans attendant on any new and untried organization.

The second concentration was held in California in May of this year. Better airplanes and a smooth running efficient organization, still at reduced strength, however, permitted the precise execution of simulated war problems. Hordes of midwinged and streamlined Bombers zipped through Western skies with terrible accuracy; low-winged Attack jobs performed their missions with snap and verve, and the entire Air Force turned out such a creditable exercise that high praise was elicited from representatives of the Secretary of War.

Other worthwhile missions have been the cold weather tests of 1936 and 1937, the first flight of land planes across the Caribbean early this year, and three joint exercises with the Navy.

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V-7514, A.C.

A BRIEF FOR OIL DILUTION FROM THE RECEIVING END OF UNSATISFACTORY REPORTS

By the Materiel Division Correspondent

"Why, that is something we should have thought of long ago," said a Wright Field visitor the other day after listening to the explanation of the oil dilution system.

Like all other ideas, after being conceived, they are so simple. The self-starter on the automobile, for example. You can easily picture the brown-derbied dapper Dan of 1900 with his girl friend jumping out of his horseless carriage and positively announcing, "Must be that new fangled self-starter that caused all the trouble."

Not being thoroughly acquainted with the makeup of the horseless carriage, our early friends must be classed as uninformed. It never occurred to them that old Lizzie might have some of the million other things wrong that is still causing her 1937 grandchild to stop occasionally even now. The self-starter today, like other man-made articles, still has its "bugs," but contributes only its proportionate share to automobile failures. Similarly, your oil dilution system, which incidentally has most of its bugs ironed out, contributes only its proportional share of grief to the complexities of your modern airplane but, like the self-starter in the hands of the uninformed, shoulders all the blame for everything that happens.

"It must be that new fangled oil dilution system," say the uninformed and, following the line of least resistance, write an Unsatisfactory Report.

Now, on the end where the engine Unsatisfactory Reports usually wind up (incidentally with a million more or less indorsements and in about as many days later), there are other Unsatisfactory Reports which complain of similar troubles for similar or like engines under similar or like conditions, on airplanes that never heard of oil dilution. What is the answer?

Over a period of some three years, extensive tests in the laboratory and in service have indicated that oil dilution is fundamentally sound. The cold room, the dynamometer, the torque stands, and flight in airplanes of various types with both air-cooled and liquid-cooled engines, have proved that oil dilution is fundamentally sound. Those best acquainted with it, swear by it. Those unacquainted with it, swear at it. Tests referred to above include full throttle operation for some 75 hours on Model 1535 engines, with stops at one-hour intervals; 50 hours of full throttle on Model 1820 engines without frequent stops; and the normal service in airplane installations under all climatic conditions.

In none of these tests have there been failures or difficulties except the slight corrosion on aluminum alloy parts of some overhaul engines as a result of lead-salt compounds formed from the lead used in the gasoline. Some parts of the engine that are highly stressed, such as bearings, crankshafts, etc., come through overhaul in exceptionally good condition inasmuch as a small amount of lubrication evenly distributed is better than no lubrication at some points and an accumulation of heavy oils at others, during those first few critical revolutions of the engine at starting. Proper treatment of aluminum alloy parts along with reduction of lead content in our new gasolines is expected to reduce the lead-salt corrosion to a negligible level.

The mysteries that surround your hopper tank are no more than a stovepipe with holes at the bottom placed in the oil tank. Oil coming from the engine enters the top side of the stovepipe and goes more directly to the engine than if it were splashed in normally. This arrangement does not prevent new oil adjacent to the stovepipe from bleeding in at the bottom and thence to your engine. Laboratory tests indicate that the oil circulating through the most direct route wears out and away, with little contamination to the remaining oil, which stays practically new.

This phenomenon, although quite desirable, was not expected from original ideas. In spite of the commercial ballyhoo of changing oil every 500 or 1,000 miles, comprehensive tests indicate that this is an unnecessary waste with the oil dilution system. Out of a clear sky we stop changing oil in those airplanes equipped with oil dilution; and over night mechanics and pilots pay particular attention to their oil. It's black, and contains soft particles of carbon. Screens and Cuno's come in for a third degree. Soft particles of carbon, although they do look bad, really do no harm to the engine. They've been there for years, and the oil industry will pay homage to the man who can pass the magic wand and do away with it.

Give oil dilution its just blame or credit, but don't make it shoulder the responsibility for all the engine failures which in most cases could be traced to previous hours of abuse in the form of running too lean, stretching the gas supply, overspeeding, climbing too steeply, or just plain cockpit trouble, a disease which we all have and which is humanly permissible considering the complexities of our modern airplanes.

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Captain Milo N. Clark recently took over the command of the 77th Pursuit Squadron, Barksdale Field. He was formerly stationed at Randolph Field.

B I O G R A P H I E S

LIEUT. COLONEL ROSENHAM BEAM

Lieut. Colonel Rosenham Beam, Air Corps, now on duty in the Plans Division, Office of the Chief of the Air Corps, was born at Bardstown, Ky., June 11, 1895. After graduating from high school, he attended the University of Louisville, Louisville, Ky., for three years. In June, 1915, he was commissioned a second lieutenant of Infantry, Kentucky National Guard, and on July 19, 1916, he was attached to the 7th U.S. Infantry at Fort Bliss, El Paso, Texas, where he was on border patrol duty until April, 1917.

Ordered to Fort Sill, Oklahoma, to take the battery officers' course at the School of Fire for Field Artillery, Col. Beam, upon completing this course, remained at Fort Sill to complete the course at the School for Aerial Observers. From July 3rd to September 12th, 1918, he was on duty at the Aviation Concentration Camp at Camp Dick, Dallas, Texas, and for several weeks thereafter he attended the Aerial Gunnery School at Selfridge Field, Mt. Clemens, Mich. He was then ordered to the Air Service Depot at Garden City, Long Island, N.Y., preparatory to proceeding for duty overseas, but with the signing of the Armistice he remained on duty as a casual officer at Garden City until December 13th, when he was transferred to Kelly Field, Texas, and assigned to the 6th Company, 2nd Provisional Wing, as its commanding officer.

On January 4, 1919, Colonel Beam was assigned as Assistant Personnel Adjutant, and shortly thereafter assumed additional duties as Assistant Transportation Officer and Commanding Officer of the 313th and 681st Aero Squadrons. He also underwent flying training and completed same on July 12, 1919. On July 29th, he was assigned to the Headquarters of the 8th Aero Squadron, with which organization he served as Radio Officer and Aerial Observer at McAllen, Texas, for the period of one year.

Transferred to Godman Field, Kentucky, Colonel Beam served as Adjutant, Personnel and Survey Officer of the detachment at that post until May 5, 1921, when he was transferred to Langley Field, Va., for duty as Operations Officer of the 14th Bombardment Squadron. He participated in the bombing operations on German ships off Cape Hatteras.

Returning to Godman Field on October 1, 1921, he performed the duties of Operations Officer, Intelligence Officer and Educational Officer with the 88th Observation Squadron, in addition to other duties, until September 20, 1922, when he was assigned as a student at the Field Officers School at Langley Field (later changed to the Air Corps Tactical School). His graduation from this School was followed by a tour of duty in the Philippines, where he served as Operations Officer of the 28th Bombardment Squadron from October 17, 1923, to December 3, 1923; Post Operations Officer at Camp Nichols; Commanding Officer of the 28th Bombardment Squadron; Post School Officer and Post Survey Officer until October, 1925. At various times he was in temporary command of Camp Nichols and the 4th Composite Group.

In December, 1925, Colonel Beam returned to Kelly Field, Texas, where he assumed command of the 41st School Squadron, served as Squadron Supply Officer and as a member of various boards of officers. On October 6,1926, he was transferred to Duncan Field, Texas, for duty at the Air Corps Training Center, serving as its first Executive Officer. On July 26, 1927, he assumed command of the 11th Bombardment Squadron, and served in this capacity until the end of December, 1927, when he was detailed for duty at Havana, Cuba, as senior officer of a mission of Air Corps officers to assist the Cuban Government in the establishment of a flying school.

Returning to the United States in July, 1931, Colonel Beam, after completing a two-year course at the Command and General Staff School at Fort Leavenworth, Kansas, was ordered to duty at Fort Riley, Kansas, as instructor at the Cavalry School. Two years later, on July 1, 1935, he was assigned to the Office of the Chief of the Air Corps for duty.

Colonel Beam was commissioned in the Air Service, Regular Army, as a second lieutenant on July 1, 1920, and on this same date was promoted to Captain. He was promoted to the rank of Major on January 1, 1932, and to Lieut. Colonel (temporary) on June 16, 1936. He holds the flying ratings of "Airplane Pilot" and "Airplane Observer," and is on the General Staff Corps Eligible List.

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LIEUT. COLONEL HARRY H. YOUNG

Lieut. Colonel Harry H. Young, Air Corps, entered the Air Service from the Infantry, New Jersey National Guard, in November, 1917. He served with the National Guard (non-federal service) in all grades from Private to 1st Lieutenant for 8½ years, and when it was in the Federal service as Battalion Sergeant Major for four months and as 1st Lieutenant for seven months. He was born April 28, 1888, in Germany, and was educated in the schools in that country.

Prior to joining the Air Service, he served with the 113th Infantry at Camp

McClellan, Ala., for three months. Following the completion of the ground school course at the School of Military Aeronautics, Austin, Texas, he was sent to duty overseas and took the observers' course at Saumur, France. He also took courses in aerial observation at the 2nd Aviation Instruction Center at Tours, France, and at the French School at Camp De Souge. He then served at the front as an observer with the 8th Observation Squadron for two months, and as Operations Officer for the 354th Observation Squadron for one month.

Shortly after returning from overseas, Colonel Young received orders to organize the 4th Observation Squadron. He took this Squadron to Hawaii and served as its commanding officer during his entire tour of duty there (January 24,1920 to March 10, 1923), except for short periods when he was on special duty as Operations Officer of the Hawaiian Division Air Service. Upon returning from Hawaii, he was assigned to Kelly Field, Texas, where he served as Assistant Wing Operations Officer, in addition to performing various other duties, until September 15, 1923, when he began the course of training at the Primary Flying School at Brooks Field, San Antonio, Texas. He completed this course on April 7, 1924, and the advanced course at the Advanced Flying School, Kelly Field, Texas, on September 13, 1924.

In October, 1924, Colonel Young was transferred to Langley Field, Va., where he was on duty as a member of the Air Service Board until November, 1926, when he was assigned to duty as Air Corps Instructor, 35th Division Air Service, Missouri National Guard, St. Louis, Mo. He served on this detail until June, 1930, and was then assigned to duty as a student at the Air Corps Tactical School at Langley Field, Va. Upon the completion of the one year course of instruction at this School, he was assigned to station at Brooks Field, Texas, where from August 14, 1931, to March 6, 1932, he was in command of the 22nd Observation Squadron. Thereafter, until August 2, 1932, he performed the duties of Executive Officer of the 12th Observation Group and of Brooks Field, and at various periods was in temporary command of the post and the Group.

At his next station, Fort Crockett, Galveston, Texas, Colonel Young was on duty as Executive Officer of the post and Operations Officer of the 3rd Attack Wing until September, 1934, when he was assigned to take the two-year course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas. Following his graduation in June, 1936, he was assigned to duty in the War Plans and Training Division, Office of the Chief of the Air Corps, Washington, D.C.

Colonel Young was commissioned in the Air Service, Regular Army, as a First Lieutenant on September 13, 1920, with rank from July 1st of that year. He was promoted to Captain with the same date of rank; to Major, February 1, 1932, and to Lieut. Colonel (temporary), June 16, 1936. He holds the flying ratings of "Airplane Pilot" and "Airplane Observer," and is on the General Staff Corps Eligible List.

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GRADUATION AT ADVANCED FLYING SCHOOL

On Wednesday, October 6th, Class 29-B, composed of 40 student officers and 49 flying cadets, finished the course of instruction and were presented certificates of graduation from the Air Corps Advanced Flying School, Kelly Field, Texas. The ceremonies of the day began with an inspection of the airplanes and crews at 8:00 a.m.

Following the inspection, airplanes began to take off at 9:10 a.m. Effecting rendezvous at Kelly Field No. 2, airplanes began passing in review at 9:30 a.m. The graduation review flight was composed of formations of Keystone Bombers, BT-2's, O-25's, BT-8's, BT-9's, A-12's, A-17's and P-12's.

At 10:45 a.m., the graduation exercises were held at the Post Theatre, with Brigadier General Frederick L. Martin, Air Corps, Commanding the Third Wing, Barksdale Field, La., delivering the address.

The names of the officers and flying cadets who are members of this graduating class were published in the previous issue of the News Letter.

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ELECTRIC RAZORS AND RADIO DO NOT MIX

The Bureau of Aeronautics, Navy Department, in announcing that Scouting Squadron Two took over the LEXINGTON Base Radio Station with all its attendant woes, stated that with new shops an reinstallation of power equipment, many hitherto unnoticed squalls and groans from various sources of local interference cropped up to the detriment of clear and rapid communication. After a sweeping investigation, a power drill was isolated as the offender in cutting out practically all voice traffic. As the Communications Officer and his gang of "trouble shooters" were relaxing in the Base Radio Station, a terrific din came from the loud speaker, completely drowning out all authorized sounds. Scouts were hurriedly dispatched to trac down the source of interference. A rapid search of the shops disclosed no power equipment operating. No nearby trucks offended. No one was dialing a nearby phone. Baffled, the trouble shooters paused. One of the scouts, more alert than the rest, searched steathily

(Continued on Page 19)

BARKSDALE FLYERS SHUFFLE OFF TO BUFFALO

The 20th Pursuit Group, led by Major Armin F. Herold, Air Corps, departed from Barksdale Field, Shreveport, La., on September 12th on a routine training flight to Buffalo, N.Y. The 27 single-seater Boeing fighters took off in three echelons at half hour intervals. Headquarters accompanied the 77th, which cleared the airdrome at 6:30 a.m., the 55th and 79th following in order.

The planned itinerary was followed closely, with refueling stops at Memphis and Cincinnati, with the exception that inadequate servicing facilities at Cincinnati made it necessary for the 79th and 55th to proceed to Columbus, Ohio, and Patterson Field, Ohio, respectively, for full service after picking up a small amount of gas at Lunken Field. The time saved by this move permitted the group to land at Buffalo before dark, only one hour behind schedule, although the last squadron to land reported difficulty in judging the black cinder runways in the gathering dusk.

At Buffalo the Group was the guest of the Curtiss-Wright Company, and seldom in its history had it been more hospitably received. After a gala dinner at the Trap and Field Club, the party split into two parts, one heading for the hay and the other for the hey-hey, with the former considerably outnumbered.

Following a good night's rest, the Group was privileged to meet Burdette Wright and his associates at the Curtiss Factory, and then to go through the plant where all the phases of airplane manufacture was painstakingly explained to the pilots. After lunch at the airport, the new Bell Fighter was turned over to the Group for inspection, and a keen interest was displayed in its many novel features.

After such an extremely pleasant and absorbingly interesting visit, the boys were reluctant to leave, but the inevitable take-off was made at 3:00, and Major Herold's "So-long Buffalo" over the radio marked the end of an unusually profitable experience. The trip to Selfridge Field was made via Niagara Falls, where the Texas and Louisiana contingents nearly fell out of their cockpits for rubbernecking. The weather was perfect, although considerably colder than down below the Mason and Dixon Line.

At Selfridge Field an agreeable evening was spent renewing old acquaintences and visiting friends. The Group took off at 8:15 the following morning for Dayton, Ohio. Two ships remained behind, one for an engine change and the other for replacement of a starter. The latter rejoined the flight at Scott Field later in the day, and the former proceeded to Barksdale Field the following day.

Upon arrival at Dayton, the flight was shown about the various technical branches at Wright Field under the courteous direction of General Robbins, Chief of the Air Corps Materiel Division. Considerable interest was aroused and interest-in comparisons made by the availability of all three of the new Pursuit ships for inspection, the P-35, P-36 and P-37. The Group left for Scott Field at 3:15 p.m.

The remainder of the flight was made after dark and was accomplished without incident. The ships refueled again at Memphis and proceeded to Barksdale Field, where they arrived at five minutes before midnight.

Perhaps the most significant aspect of the flight was the degree of public interest aroused by the Group at the civilian airports of Memphis and Buffalo, where advance notice of its arrival had been given by Major Carlton F. Bond, S-3. Several thousand spectators witnessed the landings at Memphis, both going and on the return stop, while at Buffalo some ten thousand persons were on hand, and highways leading to the airport were jammed with cars, necessitating a heavy police detail for the protection of the pilots and the airplanes.

The personnel taking part in the flight were as follows:

Headquarters: Majors A.F. Herold, Carlton F. Bond and Lieut. O.R. Deering.

77th Pursuit Squadron: Captain M.N. Clark, Lieuts. P.K. Morrill, N.D. Sillin, C.P. Lessig, P.R. Learned, L.M. Rohrbough.

55th Pursuit Squadron: Captain M.R. Nelson, Lieuts. L.P. Dahl, B.L. Boatner, G.P. Disosway, L. Saxton, J.W. Hinton, H.B. Young, T. Keith, J.O. Reed and G.A. Blakey.

79th Pursuit Squadron: Lieuts. T.S. Olds, R.B. Landry, R.M. Kellogg, F.O. Easley, W.D. Camp, J. Ferguson, L.F. Stetson, and C.R. Greening.

The schedule made good by the leading squadron was as follows:

DEPARTED	TIME	DATE	ARRIVED	TIME
Barksdale Field	6:30 am	9-12	Memphis	8:25 am
Memphis, Tenn.	9:30 am	9-12	Cincinnati	12:45 pm
Cincinnati, Ohio	4:00 pm	9-12	Buffalo	6:40 pm
Buffalo, N.Y.	2:55 pm	9-13	Selfridge	4:30 pm
Selfridge Field	8:15 am	9-14	Dayton	9:45 am
Dayton, Ohio	3:15 pm	9-14	Scott Field	5:40 pm
Scott Field, Ill.	6:55 pm	9-14	Memphis	8:35 pm
Memphis, Tenn.	9:25 pm	9-14	Barksdale	11:40 pm

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PROMOTION OF AIR CORPS OFFICERS

The following-named Air Corps officers were promoted, effective October 1, 1937, to the rank indicated: Colonel John N. Reynolds (temp.) to Colonel; Lieut. Colonel Robert LeG. Walsh (temp) to Lieut. Colonel; Majors (temp.) George C. Kenney, George M. Palmer, John P. Temple, Byron T. Burt, Jr., and Earle G.Harper to Major.

Effective Sept. 24, 1937, Major Charles M. Savage, Air Corps, who held temporary rank in that grade, was promoted to the permanent rank of Major.

METEOROLOGICAL ACTIVITIES ON WEST COAST

The First Weather Squadron, Air Corps, was organized on July 1, 1937, for the purpose of furnishing an adequate weather service to Air Corps units which may be located either permanently or temporarily in the Pacific Coast Region.

The Squadron will, in the near future, have a strength of approximately sixty men and is at present under the command of Lieut. H.H. Bassett. Fixed weather stations are in operation at March Field, Calif.; Hamilton Field, Calif.; Moffett Field, Calif., and Fort Lewis, Wash. The March Field and Hamilton Field stations are in charge of Lieut. Sam H. Wiseman and Lieut. Theodore M. Bolen, respectively. Both of these officers are recent graduates of the course in Meteorology given at the California Institute of Technology.

Present operations include the taking of surface observations and winds aloft at all stations; the transmission of these reports by teletype and radio to other Air Corps and Department of Commerce Stations, the reception of weather information from other stations and the preparation and dissemination of weather forecasts. This last activity is at present restricted at some stations due to lack of trained personnel, but, under the training plan being carried forward at all stations and at the Air Corps Weather School, this deficiency will be remedied in the near future.

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COL. HOYT ASSUMES COMMAND OF 20TH PURSUIT

Several major changes have taken place during the past few weeks in the 20th Pursuit Group at Barksdale Field, La.

Lieut. Colonel Ross G. Hoyt took over the command of the Group, succeeding Major Armin F. Herold, who is now commanding officer of the 79th Pursuit Squadron. Col. Hoyt came to Barksdale Field from Washington, D.C., where he was on duty in the Information Division, Office of the Chief of the Air Corps.

Among the outstanding Air Corps events in which Col. Hoyt participated were the endurance flight of the Army Transport "Question Mark," wherein he was the pilot of the refueling airplane; his record solo flight, night and day flying, from New York to Nome, Alaska, July 18-19, 1929; the Alaskan Flight of B-10 Martin Bombers in the summer of 1934, and his leadership of the first formation night flight of a squadron of Pursuit planes from Selfridge Field, Mich., to Washington, D.C., and return, in February, 1931. Colonel Hoyt also played an important part in connection with making arrangements for the Army Air Corps' Good Will Flight around South America, December 20, 1926 - May 2, 1927, which expedition was headed by Colonel Herbert A. Dargue, Air Corps.

MANEUVERS BY 17TH ATTACK GROUP

The 17th Attack Group, March Field, Calif., will depart for Bakersfield, Calif., on October 27th for their annual ten-day maneuvers, which will complete Group field training for the year 1937.

Under simulated war conditions, the maneuvers will provide training in moving from the home airdrome to an advanced base, testing out new organization, flying and other equipment under field conditions away from the Group's permanent base, and a test of combat efficiency of the Squadrons within the Group while operating as a Group under field conditions with specific flying missions.

Headquarters and Headquarters Squadron, 17th Attack Group, with one medical officer and three medical enlisted men attached; the 34th, 73rd and 95th Attack Squadrons will operate with the full existing strength of 51 officers and 254 enlisted men, and flying equipment consisting of 32 Attack airplanes. Administration will be as a Group, with Lieut. Colonel Carlyle H. Wash as the Commanding Officer.

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ART OF PILOTING RISES TO NEW HEIGHTS

Requirements for pilots of the new multi-motored, multi-place airplanes are raising the art of military piloting to new heights. The piloting of these airplanes requires not only familiarity with and knowledge of all the instruments and accessories common to commercial transports, but also mastery of literally hundreds of purely military devices.

The present-day pilot must not only be able to fly the airplanes, but he must direct the work of many other members of the crew and be competent in case of need to man any of their positions. In order to insure this proficiency, requirements have been set forth by the War Department specifying that all pilots on this type airplane, such as the B-18 Bombardment airplane in use with the GHQ Air Force at Hamilton Field, have at least five years and 1,250 hours' experience as military pilots.

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All major airports in Northern California are being photographed by the 88th Reconnaissance Squadron of Hamilton Field, Calif.

These photographs will be used to revise the Airways Bulletin of the Department of Commerce, which is to include vertical aerial photographs of all landing fields in the United States. Work on this assignment is in the hands of Second Lieutenant William W. Pannis, Photographic Officer of the 88th Reconnaissance Squadron.

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NAVY AIRMEN VISIT VLADIVOSTOK

In the latest issue of the semi-monthly press release of the Bureau of Aeronautics, Navy Department, there appears an interesting account of the visit of the U.S.S. AUGUSTA to Vladivostok. The article goes on to say:

"This was the first visit of an American man-of-war to the Siberian port since 1923, and it is thought that the impressions gained may be of interest to members of the aeronautical organization who served in Vladivostok at the time of the Russian Civil War.

Opportunities for conversation with Soviet aviators were frequent but of no real value because of the language barrier, the reticence of the Russians, and their inclination toward exaggeration.

Aircraft of three types were in evidence. A nine-plane formation of pursuit ships was repeatedly seen at some distance and a similar formation of four engined bombers passed over the ship at a considerable altitude upon one occasion. The third type was a small, awkward looking, single engine boat. The fighters were of the low wing monoplane type and appeared to be extremely fast - certainly above two hundred knots. The bombers were also monoplanes with retractable landing gear and a very sleek, ultra modern appearance, but when seen were cruising very slow. Cruising speeds of four hundred kilometers were claimed for both types in conversation. All planes seen had one common characteristic - a long streamer of smoke trailing behind each engine of each plane. The only other item of aeronautical interest actually seen was the tower for practice parachute jumping on a hill on the edge of the bay.

The men of the Soviet Navy are extremely young, stalwart, bronzed, keen and alert, and are well uniformed. Discipline appeared to be good and the morale high."

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The construction of the Attack Range at Mulberry Island for the 37th Attack Squadron of Langley Field, Va., is now being completed by the 1st Air Base. A detail from the 37th, under the direction of 2nd Lieut. James M. Jones, Air Res., constructed the 50-yard square bombing target for small bombs, the target for individual machine gun firing, and the chemical range. The 1st Air Base is now constructing the circular target for the 100-lb. bombs, and is also working on plans for an Area Target.

All the pilots of the 37th Attack Sqdn. are busily engaged making the various qualifying runs on its new range. In the events completed, namely, Chemical, 50-lb. external bombs, and parachute bombs, all the pilots have qualified as experts.

NEWS FROM THE PHILIPPINES
By the Nichols Field Correspondent

News from the Far Eastern Zone should be by radio flashes to keep up with the rapid turn of events. However, a few details contained herein may not be amiss.

The 28th Bombers came through the earthquake of August 20th without a scratch. The only apparent effect was a sudden change in a watch which was undergoing several weeks of calibration by the navigation class. The chronometer had been gaining about three seconds per day, but the night of the earthquake it lost three seconds.

Torrential rains have soaked Nichols Field until operations are sadly curtailed. This bids fair to be one of the wettest "Rainy Seasons" on record. Although behind on their flying directive, the 28th Bombers are engaged in a strenuous training campaign.

Our Skipper, 1st Lieut. E.H. ("Wump") Porter, believes in preparedness. When you see our "Rainy Day Schedule" you'll likely agree that it constitutes preparation for almost any emergency. The B-10B combat crews alternate from trap shooting to bomb trainer the first three hours each morning. A goodly spirit of competition has sprung up between combat crews as well as between officers and men and between armament, radio and engineering sections. So far, honors at traps go to Lieuts. J. A. Miller and W.W. Bowman, with their combat crews of Staff Sergeant Hobbs, Corporal Siedband, Private Ruskowsky and Staff Sergeant Stockwell, Private 1st Class Burgess and Private Cook, respectively. Lieut. N.B. Harbold has individual high score of 23 out of 25.

The spirit of competition carries excited interest into the other phases of training. Gunners vie the best camera gun shots and machine gun scores. Squadron prizes are offered each month to the best trained combat crew. Bombing and aerial gunnery records count along with traps, pistol, camera gun and ground machine gun scores.

Each rainy morning at 10:30, all pilots gather for an hour of navigation class. "Skippy" Harbold is ably supported by "Joe" Miller on our teaching staff.

Many of us are housing refugees from the war in China. Wives and children arrived on the S.S. PRESIDENT HOOVER with their family heads still up in the Chinese hills and all means of communication blocked. The men did not know that their homes were broken up or where their families were. Private Dunning, of the 28th Radio Section, proved himself "a friend in need" with his amateur radio station at Nichols Field. He has been in constant communication with

(Continued on Page 19).

V-7514, A.C.

THE 1500 H.P. ENGINE

In the October issue of the Journal of the Society of Automotive Engineers, Mr. A.L. Beall, Vice President of that Society, Representing Aircraft-Engine Activity, states that "Unquestionably, in the engine field, the development of the greatest interest in the year 1937 is the 1500 horsepower engine.

The engine of 1000 horsepower was the product of steady but slow growth over a period of years with a takeoff horsepower output in four figures representing the climax of a series of small increases in horsepower made possible by better designs and better materials.

Apparently, the aircraft industry has arrived at the conclusion that there are many advantages in the use of two engines as opposed to four, which can be realized if the total power output is not seriously below that of four engines at takeoff. Economy of installation of two engines, the reduced maintenance, and the greater simplicity of controls for the pilot with two engines, as compared with four, all have a distinct appeal to the aircraft industry.

Coincident with the crystallization of thought in favor of two engines of adequate power came the fourteen-cylinder two-row radial engine with 1500 brake horsepower for takeoff and commensurate cruising output. No development in the engine field in recent years has been more timely or accomplished with fewer pangs of partunition."

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THE TRICYCLE LANDING GEAR

Mr. Fred E. Weick, Society of Automotive Engineers Vice President, Representing Aircraft Activity, discussing the tricycle landing gear in the October issue of the S.A.E. Journal, states that the application, as carried on jointly by the Army Air Corps and the Douglas Company of that landing gear to larger airplanes constituted the most interesting development in aircraft during the past twelve months, in his opinion, and he alludes to himself as an admittedly prejudiced observer.

"The transport airplane," he says, "should be benefited in three distinct ways by the adoption of the tricycle landing gear. First, blind landings will be easier, for the landing can be made at any reasonable speed without necessarily leveling off the flight path before contact with assurance that the airplane will stay on the ground after contact is made. In addition, full application of the brakes during the entire ground run can be made without danger of nosing over. Second, because the tricycle gear is stable in taxiing and free from the tendency to ground loop, landings can be made easily and safely with the wind blowing strongly across the runway, and it therefore seems likely that airports having only one long runway may be satisfactory. Third, the tricycle gear should contribute to the comfort of transport passengers for the fuselage floor is level when the airplane is on the ground.

Experiments in application of the tricycle gear to larger airplanes have been carried on by the Air Corps and the Douglas Company in a sound and thorough manner. Starting with the information gained from installations on small airplanes, systematic ground tests were made with a towed carriage fitted with a tricycle gear, several features of which could be varied. After these tests a tricycle gear was fitted to a Douglas Dolphin amphibian having a gross weight of 9,000 lb. This was put through a series of take-off and landing tests and then flown by many different Air Corps pilots at various Air Corps fields throughout the country.

During the same time the N.A.C.A. has been continuing the investigation of certain factors connected with tricycle gears, particularly those having to do with the possible shimmying of the front wheel which would be serious if it occurred on larger airplanes.

With this background, the next step in the development is now taking place in the use of a tricycle gear on the new forty-passenger Douglas DC4 four-motored transport having a gross weight of 60,000 lb. which is now being completed."

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News from the Philippines

(Continued from Page 18).

"Hams" in China, sending and receiving news of home and family.

Manila has taken on a new aspect with so many refugee visitors. Ships leave cargo bound for Shanghai and complete business enterprises have moved into town. Nichols Field has no end of technical advice available, since engineers and technicians of Pratt & Whitney, Martin, Wright and Northrop have moved in, en masse, evacuating China in favor of Manila. Even the night life of our great city has picked up considerably with the addition of Argentine orchestra and a wealth of entertainers from Shanghai.

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Electric Razors and Radio

(Continued from Page 15).

on and discovered the perpetrator of the crime. The storeroom keeper in a nearby shop was completely blanking out all transmission by using his electric razor.

97TH SQUADRON BUSY AS ONE-ARMED PAPERHANGER
By the Mitchel Field Correspondent

When the cold wintry winds blow and the heavy snows begin to drift (for winds will blow and snow will drift) at the Air Base at Mitchel Field this winter, one of the busiest outfits at that station will no doubt do a little "ground flying" in memory of the busy and well-spent summer of 1937. The 97th Observation Squadron, one of the earliest and most active of the recently created Corps & Army Aviation units, after having completed two periods of annual field training exercises, participated in First Army Command Post Exercises. Individual pilot's proficiency training, annual War Department Training Directive Program, and cooperative missions with nineteen line organizations at twenty-one different points covering three Corps Areas were also carried out. In spite of this, they are not even now sitting back in their cockpits for a few winks of sleep, for they have already completed much of their current Training Directive and ground school for officers and men. The 97th insists that they have been busier than the proverbial cat on the tin roof!

The fact that this Squadron does not belong to the 9th Bombardment Group, GHQ Air Force, based at Mitchel Field, is not indicative of a "back seat" in flying or tactical operations. They began the calendar year with a 3-day unit trip to Jacksonville, Fla., which was actually a shakedown cruise for the then recently acquired O-46 airplanes. In late May, the Squadron moved planes and barracks bags to Groton, Conn., where it remained for a two weeks' visit, tactically as guests of the Connecticut National Guard, but socially as guests of the Submarine Base and Coast Guard. This constituted field training for the Fiscal Year 1937. The aftermath was the predicament of the lone sub-bather at Napatree, who insisted his mid-day siesta had been rudely interrupted by the stray lead pellets of winged death sprouting from an itinerant airplane. He was so mortally scared that he could not accurately describe the plane, but did survive to tell the tale. After returning from this trip, the 97th squadron began a three-week session of answering questions and cleaning slightly soiled airplanes for the one or two future generals temporarily disguised and absolutely incognito among 300 First Class cadets of the United States Military Academy.

When the First Army began drafting plans for a map and paper war at Fort Devens, Mass., in late August, it was the 97th Squadron which was called upon to provide the only authentic or warlike atmosphere exhibited in the entire engagement. It was during this assignment that the Squadron flew an O-39 airplane in an entirely new and radical type of mission, scattering Prestone over the historical New England farm meadows. Incidentally, the performance of this Attack Aviation mission is believed to be definite proof of the versatility of the 97th - and the O-39.

It has been the cooperative missions with ground units, however, which claimed the interest and attention of the majority of the flying personnel. Between the Ohio River Valley flood photography in February and the Fort Totten Coast Artillery Anti-aircraft searchlight tracking in September stretches a long line of target towing, air-ground liaison by radio, drop and pick-up missions, panel missions, and artillery adjustment. In fact, service missions for all branches of the Army, together with command and reconnaissance missions for all types of headquarters, platoon to Army included, were the usual run of the summer. In many cases, airplane and observation team operated for several days or a week from temporary bases and camps in conjunction with such troops and, occasionally, flying from a field fifteen or more miles from the camp of ground troops. At such times, flying personnel serviced and attended the mechanical upkeep of their planes and materiel, flew extensively during all hours of day and night, and attended conferences and critiques.

The aim of the Squadron throughout this work has been to develop high team work and a proper understanding of all methods of inter-communication between Observation Aviation and ground units. The experience gained by pilots and observers on these missions has been especially valuable in that they so nearly coincide with the type of work which it is anticipated Corps and Army aviation may be expected to perform under wartime operations.

Much credit for the success of the Squadron's activities is due to Major George C. McDonald, Air Corps, former Skipper, now attending the Command and General Staff School. The present Squadron Commander is Major Charles A. Horn, Air Corps, who was relieved as Base Operations Officer, Mitchel Field, for this duty.

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19TH BOMBARDMENT GROUP EXERCISES

Under the general supervision of Brigadier General Delos C. Emmons, First Wing Commander, GHQ Air Force, March Field, Calif., the 19th Bombardment Group conducted one of the most successful minor joint exercises held between the Army and Navy in many a year. The general purposes of the problem were to practice and determine the bombing accuracy at high altitudes against a fast moving towed target. Special purposes were to test and determine the present communications set-up and the relative merits of individual versus formation, as well as the various bombing patterns best suited to such targets. The Commanding General was especially pleased with the splendid cooperation between the officers of both services. Special appreciation is expressed to Captain A.L. Bristol, USN, in command; Lieut. Commander Caldwell, of the BOGGS; Lieut. Commander Pope of Patrol Squadron Eleven, and to Lieut. Commander Holland, Liaison Officer at March Field.

The immediate control of the exercises was charged to the 19th Bombardment Group, GHQ Air Force, commanded by Lieut. Colonel H.S.Burwell, Air Corps, assisted by Major J.K. Cannon, Air Corps, Operations Officer. The Group consisted of three squadrons, two of B-10B airplanes commanded by Major W.R. Peck and Captain C.I. Ferris, respectively, and one of B-18 airplanes commanded by Major D.V. Gaffney.

No overt or minor difficulties served to mar

the general training or success of the exercises. Colonel Burwell expressed himself as deeply appreciative of the zealous and energetic manner in which all officers and men of his command carried out their share of the problem.

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FLYING PROPELLER KILLS NATIONAL GUARD OFFICER

While standing in the hangar some distance in front of the airplane in which he was about to make a flight, Captain George G. Adams, of the 154th Observation Squadron, Arkansas Naticnal Guard, was the victim in one of those unusual accidents which happen on very rare occasions. The mechanic, who was asked to taxy the plane out of the hangar to the field, entered the cockpit and started the motor. Just before he was ready to put the plane in motion, he realized that something had happened. He shut off the motor, and looking forward saw Captain Adams lying on the hangar floor directly in front of the plane. A witness standing near the end of the left wing of the plane stated that the motor had run about 15 seconds when the propeller flew off, struck the floor about 14 feet in front of the plane, and bounced forward to strike Captain Adams, whose body was found about 36 feet in front of the plane. The propeller continued horizontally near the floor, passed under three other ships and stopped near the east wall of the building, about 104 feet away from the plane.

Captain Adams was born in Little Rock, Ark., September 5, 1899. After attending the Little Rock public schools, he entered Sewanee Military Academy at Sewanee, Tenn., and at the outbreak of the World War resigned to enlist in the Army. He was assigned to a heavy tank corps and saw service in France until the Armistice. He later served with the Army of Occupation, and was mustered out of the service in the Spring of 1919.

Receiving flying instruction at a commercial school, Captain Adams, in 1929, joined the 154th Observation Squadron as a second lieutenant. He was later promoted to first lieutenant, and in June, 1936, to Captain. He was regarded as one of the most efficient pilots in the organization.

During the time he was a member of the City Council of Little Rock, Captain Adams served several times as Acting Mayor. Greatly interested in aviation matters, he served as chairman of the Airport Committee of the Council, and was instrumental in securing the concrete runway recently completed at a cost of $137,000.

The News Letter Correspondent states that "This is the first fatality in the Squadron since its organization in April, 1925. Captain Adams, or 'El Capitan,' as he was affectionately known among his fellow officers, acted as Operations Officer at our last encampment during the maneuvers at Fort Riley, Kansas. He performed his duties as Operations Officer so efficiently that he was praised very highly by the Regular Army officers of the Second Cavalry Division, Fort Riley, Kansas. To meet his death on the ground, through no fault of his own, is tragic, to say the least." The Correspondent further states that the name of the Little Rock Municipal Airport has been changed to "Adams Field," in honor of Captain Adams.

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DUTY ASSIGNMENTS OF ADVANCED SCHOOL GRADUATES

Under Special Orders of the War Department, recently issued, the commissioned officers who graduated on October 6th from the Advanced Flying School, Kelly Field, Texas, were transferred to the Air Corps, effective October 1, 1937, with rank as of the date of their graduation from the U.S. Military Academy. These new Air Corps officers were assigned to duty with the Air Corps at the stations indicated:

Philippine Department, sailing from San Francisco, Calif., about January 28, 1938:

Second Lieutenants

John K. Arnold, Jr., C.A.C.
Carl K. Bowen, Jr., Field Artillery
Cecil E. Combs, Cavalry
Conrad F. Necrason, Signal Corps
Edward E.L. Purke, Infantry
John M. Bartella, Infantry
William E. Covington, Jr., Infantry
William M. McBee, Infantry.
Joseph W. Nazarro, Infantry.

Panama Canal Department, sailing from Charleston, S.C., November 5, 1937:

Carl T. Goldenberg, Infantry
Carl M. Parks, Infantry
William W. Jones, Infantry
Von R. Shores, Jr., Infantry
John R. Kelly, Infantry
George P. Champion, Infantry
Frank W. Gillespie, Coast Artillery
Charles M. McCorkle, Field Artillery
Robert D. Gapen, Field Artillery
James W. Twaddell, Jr., Cavalry
Dwight O. Monteith, Corps of Engineers

Hawaiian Department, sailing from San Francisco, November 13, 1917:

Frederick Bell, Coast Artillery Corps
Richard H. Carmichael, Field Artillery
Frederick R. Terrell. Field Artillery
Clinton D. Vincent, Field Artillery
Turner C. Rogers, Infantry
Laurence J. Ellert, Infantry

Mitchel Field, N.Y.:
Wallace C. Barrett, Infantry, for duty with the 97th Observation Squadron.

Maxwell Field, Alabama:
William B. Grohs, Cavalry
Clinton U. True, Infantry

Brooks Field, Texas:
Clark L. Hosmer, Infantry
Ernest S. Holmes, Jr., Infantry.
Charles B. Stewart, Coast Artillery Corps
Norman C. Spencer, Jr., Field Artillery

Moffett Field, Calif.:
Jay D. Rutledge, Jr., Field Artillery

Selfridge Field, Mich.:
William L. Kimball, Infantry
Albert P. Clark, Jr., Cavalry

Langley Field, Va.:
William G. Lee, Jr., Infantry

Chanute Field, Ill.:
Seward L. Hulse, Jr., Field Artillery

MOSAIC PHOTOGRAPHY FOR U.S. GEOLOGICAL SURVEY

Completing a 1,380-square mile project of mosaic photography for the U.S. Geological Survey, a photographic ship of the 23rd Photo Section, with 1st Lieut. Paul Hanley as pilot, returned to March Field on September 29th.

With Technical Sergeant William M. Brees, of the 23rd Photo Section, as the photographer and Corporal Victor Woodward, of the 38th Reconnaissance Squadron, as mechanic and crew chief, Lt. Hanley lifted the Fairchild C-8A from the March Field mat on September 9th and proceeded to Montana, via Las Vegas, Nevada, and Salt Lake City, Utah.

At West Yellowstone, where work began, the men were delayed for seven days due to clouds. When the weather finally cleared up, allowing them to continue work, they made rapid progress for several days until snowfall forced them to abandon that area.

From Yellowstone, the men flew to Boise, Idah Idaho, on the second leg of their project, and thence to Eugene, Oregon, where the mission was completed.

During the photographic operations, Lieut. Hanley flew at altitudes from 15,000 to 21,500 feet, where extreme cold was encountered, necessitating the use of a considerable amount of oxygen. The cabin heater kept the cabin temperature of the Fairchild at about 25 degrees F., when outside temperatures were down as low as six degrees below zero.

Using a K-3B (Fairchild) 8¼" focal length camera, Sergeant Brees made a total of 1200 exposures, 7" x 9" each, everyone of which he loaded, unloaded and developed in improvised dark rooms without the loss of a single exposure.

Upon returning to March Field, via Medford, Oregon; Sacramento and Bakersfield, Calif., Lieut. Hanley said that the office of the Geological Survey at Sacramento had expressed both pleasure and surprise at the rapidity with which the expedition completed the mission. The photo material gathered will be an invaluable aid to the Geological Survey in making and improving maps of the areas photographed.

Lieut. Hanley also stated that the airplane, which had a total of 61 hours' flying time, functioned perfectly despite the fact that they were at times forced to use inferior grade gasoline, and that Corporal Woodward's excellent services as crew chief were mainly responsible for the plane's performance.

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The News Letter Correspondent of the 154th Observation Squadron, Arkansas National Guard, Little Rock, Ark., states that the new Squadron hangar is practically completed and "we have already begun moving into it. Within the next month, all the details should be completed, and we hope to be able to furnish a room so that we will be able to take care of all visiting pilots who care to spend the night with us. We are very proud of our new hangar and we are planning to have a formal opening some time within the near future."

WAR DEPARTMENT ORDERS
Changes of Station

To Randolph Field, Texas: Major Harvey W. Prosser, Captain Shelton E. Prudhomme, 1st Lts. Richard A. Legg and Francis M. Zeigler from the Philippines; 1st Lieut. John M. Price, from Panama.

To Buffalo, N.Y.: Major Arthur E. Simonin, from Middletown, Pa., Air Depot, to duty as Air Corps Representative at the plant of the Curtiss-Wright Corporation.

To San Antonio Air Depot, Duncan Field, Tex.: Captain Clarence F. Horton, from Maxwell Field, Ala.

Active Duty for Second Lieutenants, Air Reserve

Herbert Arthur Dorr, North Adams, Mass., assigned to Langley Field, Va., to November 1,1940.

Lowery L. Brabham, Montgomery, Ala., assigned to Randolph Field, Texas, to October 2, 1940.

Walter Paul Piehl, Evanston, Ill., assigned to Randolph Field, Texas, to October 6, 1940.

Arthur Hanson, Estherville, Iowa, assigned to Rockwell Air Depot, Calif., to October 14,1940.

Second Lieut. Norman A. Loeb, Cavalry, relieved from assignment and duty at Randolph Field, Texas, and assigned to 4th Cavalry, with station at Fort Meade, S.D.

Captain Jack Greer, Air Corps, appointed to temporary rank of Major, effective October 11, 1917.

Orders assigning Major Charles M. Savage, from Rockwell Air Depot, to Fort Lewis, Wash., revoked.

Colonel Theodore A. Baldwin, Jr., Air Corps, to go on retired list on November 30, 1937, at his own request, after more than 39 years' service.

Lieut. Colonel Coleridge L. Beavan, Medical Corps, who has been on duty at the School of Aviation Medicine, Randolph Field, Texas, as Assistant Commandant, has been assigned to duty as Commandant of this School, effective upon the retirement from active service of Colonel Arnold D. Tuttle, Medical Corps, the present Commandant. Colonel Beavan, several years ago, was on duty in Washington, D.C., in the Medical Section, Office of the Chief of the Air Corps.

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Major Newton Longfellow, Air Corps, Commanding Officer of the 88th Reconnaissance Squadron, Hamilton Field, Calif., recently flew to Wright Field, Dayton, Ohio, to attend a meeting of leading dead-reckoning navigators of the Army, whose purpose it was to inquire into the usefulness and the tactics resulting from the new navigation equipment necessary to obtain the utmost from ultra-long range airplanes now being used by the GHQ Air Force. Major Longfellow made the trip to Wright Field in a B-10B Martin Bomber.

Langley Field, Va., September 30th.

35th Pursuit Squadron: Six planes led by Captain Glenn O. Barcus went to New York with the Group to take part in the American Legion Demonstration on September 20th, and returned on the 22nd. The 35th also participated in the flight over Washington on September 25th for the American Red Cross. Thirteen planes flew in the form of a cross.

All the pilots in this Squadron recently qualified in instrument flying.

36th Pursuit Squadron: Lieut. James B.League, Jr., was assigned to this organization upon being put on active duty on September 14th. Lieut. League graduated from the Training Center in June, 1933, and served with the 35th Pursuit Squadron for two years before reverting to inactive status.

Staff Sergeant C.M. Ernst took over the job as First Sergeant of the 36th and promises a smooth-running administration.

Congratulations are in order for J.R.Booth, promoted on September 3rd to Staff Sergeant; C.R. Pomaville, to Sergeant, and J.A. Riley to Corporal. Well, congratulations.

37th Attack Squadron: The qualification runs on the Chemical Range have been greatly facilitated by the use of the new experimental intermittent release chemical tank, E8R1, which was turned over to this organization for preliminary test by the C.W.S. School. The tests on this tank have now been completed, and all pilots of this organization were very well satisfied with its performance.

The 37th Attack Squadron gave a party on September 25th at the picturesque Riverside Club overlooking the historic James River. Refreshments of all kinds were served all day. All the Squadron officers were present, and among the distinguished guests present were the Group Commanding Officer, Lieut. Colonel Gilkeson, and his staff.

The highlight of the party was the entertainment. Miss Sultan, better known as "Miss Virginia," entertained the crowd with tap and acrobatic dancing and popular songs. Miss Balmer gave a splendid performance with her blues singing. A string orchestra known as the "Hill Billys" kept the crowd in happy spirits, playing old Southern songs. In between the acts, Staff Sergeant Pilizari, of this Squadron, an old trooper, gave recitations, monologues, and eccentric dances. Master Sergeant Nero, our beloved former hangar chief, with the able assistance of Privates, 1st Class, Harvey and Harrison, gave a sketch impersonating the "Old Medicine Man." Needless to say, a grand time was had by all, and we are looking forward to the next party.

20th Bombardment Squadron: The Squadron soft ball team has won five games so far this season, one each from Hqrs. Sqdn., GHQ Air Force; 21st Reconnaissance Squadron; 33rd Pursuit Squadron; Hqrs. and Hqrs. Sqdn., 2nd Bombardment Group; and the 49th Bombardment Squadron, and lost two.

The Squadron congratulates Corporal John Bettinger, who received his promotion on September 1, 1937.

49th Bombardment Squadron: In the field of athletics, the Squadron has not been idle. Interest has been centered in the soft ball league. Although we boast of a good team we have come slightly on the losing end in the League, having won two and lost three games. All of the games were hotly contested, however, and could have come out either way.

96th Bombardment Squadron: The Squadron had a very delightful get-together on September 18th, when officers and enlisted men celebrated a "Non-Coms" promotion party.

Hqrs. and Hqrs. Squadron, 2nd Bomb. Group: Privates Marion Lynch and Richard R. Thomas transferred from Base Headquarters and 1st Air Base Squadron to this organization.

The Squadron soft ball team lost a game to the 33rd Pursuit Squadron, but finally broke in on the winning column by trimming the 8th Pursuit Group Hqrs. team and the QMC team. In addition, a game was won by forfeit from the Hqrs. Air Base Squadron team.

Kelly Field, Texas, October 8, 1937.

Following the graduation exercises of Class 29B of the Advanced Flying School, the students entertained the post personnel at a reception at the Officers' Mess.

The 13th Air Base Squadron celebrated its Organization Day on September 18th with a Dutch Lunch in the Squadron Mess at noon, and a dance in the Hostess House at night.

Nichols Field, Rizal, P.I., September 13th.

The 28th Bombardment Squadron swimming team brought home the bacon for Nichols Field on September 6th. New pool records were established in every event. Private Thorne won the 100-yard free style and the 40-yard breast stroke; Private Ruskowsky won the 40-yard backstroke, and the team of Ruskowsky, Thorne and Corporal Tipton took the 120-yard medley relay. Thus ended another successful season for our swimmers, with the Army and Navy Y.M.C.A. Challenge Trophy safely tucked away in the day room.

Several promotions in the 28th ushered September in with a bang - Staff Sergeant Joyner to Technical Sergeant; Sergeant Stockwell to Staff Sergeant; Corporal Wasnick to Sergeant, Privates Wright and Firman to Corporal.

Bolling Field, D.C., October 8th.

Bolling Field's first track and field meet, held on September 25th, turned out a big success, thanks to the splendid effort put out by all officers and enlisted men at the station. Personnel of the Consolidated Mess turned out their usual high class lunch which afforded a pleasant intermission between the track events and the baseball game. The 2nd Platoon of the 14th Air Base Squadron captured first place in the track meet with ease. The 1st Platoon of the 14th Air Base Squadron, followed closely by the 3rd Platoon, took second and third places, respectively. Private Hanson of the 2nd Platoon led the scoring for the day by winning the obstacle race, the broad jump and the sack race.

Due to the large number of entries, it was necessary to run three to four preliminary heats in practically all events. The most popular event from a spectator's point of view was the shoe race where each ambitious contestant threw the shoes in all directions. The obstacle race, sack race and three-legged race provided plenty of competition and interest to all spectators and contestants.

The Bolling Field Volley Ball Tournament has aroused the interest of all teams in the league. Volley ball, which requires very little practice and experience, has provided an excellent and not too strenuous pastime for all off-duty hours. At the present time the 1st Platoon of the 14th Air Base Squadron is leading the post volley ball league and is closely followed by the 1st Staff Squadron.

The Intersquadron Basketball League will begin games shortly after the completion of the volley ball tournament. Basketball will provide plenty of competition at Bolling Field. The best players in the Squadron League will be selected to form the post team to represent Bolling Field in the Third Corps Area and District of Columbia League.

Although eliminated in the tournament for the championship of Washington, D.C., Bolling Field's crack baseball team turned in an excellent record for the complete season. After winning the championship of the 'Federal League' of Washington, Bolling was eliminated from the "City Championship" by the strong Greenbelt team of Maryland.

Bolling Field won 27 of the 52 games played with military and civilian teams in this vicinity. The team scored 403 runs against 389 for its opponents, and its batting average was .254.

Mitchel Field, L.I., New York, September 27th.

"Rolling, rolling, over the bounding main." With song in their hearts and Lighter-than-Air Bischoff as ballast, Headquarters Squadron of the Ninth Bombardment Group, GHQ Air Force, hoisted anchor on the Deisel-powered M.S. RELIANCE, of Long Beach, L.I., early on the morning of September 27th, and chugged away on a Frank Buck hunt for Tiger Shark, Whales and Blow Fish lurking in the green waters off Long Island's south shore. The occasion was by way of celebrating the Squadron Organization Day - the first since the axe of reorganization had beheaded the old 61st Service Squadron and created this new duckling.

A PX dividend issued earlier in the month, after a long period of drought, had provided the incentive for a few of the Squadron politicians to devise means of breaking the Squadron jackpot. The politicians lined up their troops in battle array and, after a long and weary campaign, the fishing crowd won the nod of approval as the Squadron skipper, Captain Joe Denniston, threw his deciding vote to the side of the Isaac Waltons.

So here they were at last, a bunch of blithering landlubbers who were rapidly losing their breakfasts as boat captain Toby guided the craft expertly through the narrow channels of Great South Bay toward the heaving waters of the broad Atlantic. In an amazing short time, the skipper throttled her down and, after a few deft maneuvers during which he took checked bearings on shore points down-anchored over an old wreck. Sergeant Pete Munch, the Squadron's most recent initiate into the Order of the Benedicts, couldn't wait for the toot of the whistle signifying the OK to cast lines out and jumped the gun. Pete's only mistake was that he failed to notice a snag in his line and, as the sinker came to a quick stop in mid air, the jerk on Pete's frail body was so terrific that he was lifted bodily from the deck, and only the quick hands of his compatriots saved him from following the sinker overboard. Despite Munch's anxiety to catch the first fish, it remained for Lieut. Paul Johnston to set the crowd back on its heels. He not only caught the first fish but the largest - a back-breaking two-inch porgie, believe it or not, hooked through the tail.

The black fish at the first anchorage went for the clam bait in a gargantuan way, but so did the wreck and, after losing several lines in the process of trying to lift the wreck to the surface, the skipper up-anchored for less treacherous grounds.

As a half hour had elapsed since breakfast, the crowd began feeling the pangs of hunger and tore into the million or more sandwiches which had been prepared for those hardy Norsemen who had the fortitude to take the risk of feeding the fish. And 'twas no surprise when the first green-gilled lubber made a dash for the rail. Vas you dere Lester? Seriously, though, the sea remained blessedly calm during the day, and casualties were few.

The second anchorage was a porgie paradise, and the fish must have been swimming shoulder to shoulder, for it was not unusual to pull in two or three at a time. The boys soon tired of this slaughter and began trying to hook a few of the sea gulls which hovered over the boat all day long carrying out scavenging operations in their own discerning way. Cheese, Ham, Bologney, orange skins, apple cores - every conceivable inducement - was used in the attempts to capture a mascot. No soap.

Several hours of drift fishing was tried in the afternoon, but as time went on the number of fishermen decreased. Fire Chief Dorn spent most of the day running around battening down the hatches and tracking down the cooties in his red hat.

As dusk fell, the skipper pointed the bow of his boat toward Jones Beach inlet and made a landfall on Long Beach. Enroute home, the professional fishermen in the outfit, that is, those who had used poles instead of the lowly handlines, were showing their skill by cleaning the day's catch of two hundred or more fish.

As the boat drew into its berth at the Long Beach pier, the party broke up to the tune of "Sweet Adeline." And everyone from Master Sergeant Beck to the youngest recruit was in debt to the Squadron fund and to Skipper Toby of the RELIANCE for the Squadron's biggest and best party.

Maxwell Field, Montgomery, Ala., October 8th.

Orders issued at the Air Corps Tactical School recently contained a paragraph directing

Sergeant Kenneth M. Welborn, 13th Air Base Squadron, to proceed to Randolph Field, Texas, for training as a Flying Cadet of the Air Corps.

This one paragraph in the day's special orders at the Tactical School brought to a successful conclusion Sergeant Welborn's three-year attempt to qualify as a Flying Cadet in the Air Corps. After his first attempt at the stiff educational examination and his failure to pass it about a year ago, the Sergeant proceeded with his studies, and his last examination carried him over with flying colors.

Born in Dunmor, Ky., September 26, 1911, Sergeant Welborn graduated from the local grade schools there; then he moved with his family to Kerrville, Texas, for several years attending school there, and then to Auburn, Ky., where he graduated from high school.

Recruiting posters caught his eye, and in 1930 he enlisted for service in Panama. He was stationed for one year at Fort Amador and then transferred to the Air Corps with station at France Field. With an eye on furthering his education, he applied for and received orders to the Air Corps Technical School at Chanute Field, Ill., from which he graduated in 1933 as a radio operator and mechanic. He immediately returned to the Panama Canal Department and back to France Field, where he served until he was transferred to Maxwell Field in 1936, being assigned to the 54th Bombardment Squadron.

He was later transferred to the 13th Air Base Squadron, with which organization he has served to date. With six years of Army service behind him and a sound education, Sergeant Welborn has an excellent chance to qualify as an Army Air Corps pilot and for a commission in the Army.

13th Air Base Squadron: Staff Sergeant Michael Kieado recently took unto himself a new "Commanding Officer," and is busily engaged in furnishing one of the bungalows on the post.

One would have thought there had been a free issue of "stogies" by the local QM from the way they were being proffered by many members of the Squadron during the past few weeks. A bit of sleuthing revealed the cigars were being distributed by soldats of the Squadron to celebrate their promotions or re-ratings. Among those promoted were Leeper to Staff, Myers to Sergeant, and Hailey, Krieger and Johnson to Corporals.

Staff Sergeant Dock R. Poff is a new arrival in the Squadron. His previous assignment was to the 19th Pursuit Squadron, Schofield Barracks, T.H.

At this writing Sergeant Bruskey is still in the post hospital battling a cold. Private Berry is acting mess sergeant during Bruskey's absence.

Staff Sgt. Melvin K. Burlingame, our Supply Sergeant, took on another three year stack the latter part of August and "aired out" on a 30-day furlough to visit friends and relatives in Missouri. Private Strozier is acting Supply Sergeant in the interim. Strozier issues mackinaws on hot days. Whether there is method in his madness beats me. Strozier was on temporary duty with the press office at the 1937 National Matches at Camp Perry, Ohio, in August and September. He received a swell letter of commendation from the Press Officer for the fine work he did there.

Staff Sergeant Relliford Hygh was ordered to the Panama Canal Department for a tour of duty, leaving Charleston, S.C., about November 5th. Staff Sergeant Ralph Colby will replace him.

Hqrs. and Hqrs. Squadron, A.C. Tact. School: Captain Pratt, Photographic Officer, accompanied by Staff Sergeant Lucas (photographer) and Corporal Davidson (Crew Chief) departed at 9:00 a.m., Oct. 7th, for Wilson Dam (Muscle Shoals), Ala., for an extended photographic mission. They are expected to return to this station within the next week.

Staff Sgt. Charley F. Stieringer reported in for duty on Sept. 28th from a tour of foreign service in the Hawaiian Department as replacement for Staff Sergeant Lyon, who departed for that Department for a tour of duty. Sergeant Stieringer served here in the 51st School Squadron prior to his tour of foreign service, and was a member of the Air Corps Tactical School units since November, 1929, with the exception of his two years on foreign service.

The two new fathers seem to be doing nicely, as well as their families. Sergeant B.L. Stringfellow announced the birth of a boy and Corporal G.V. Johnston the birth of a girl, the stork bringing them to the station hospital at Maxwell Field.

Sergeant Thomas F. Rampey of this organization departed for Chanute Field to pursue a course of instruction in the Airplane Mechanics course. Sergeant Rampey is one of the few men who passed the recent entrance examination for the Air Corps Technical School. Another entrance examination for Chanute Field was conducted on October 8th, and this Squadron has a number of men scheduled to take the examination.

Private Boutwell transferred on October 5th to Barksdale Field, La., and Private Godwin was to be transferred to Randolph Field on the same date, but was admitted to the Station Hospital in the afternoon of October 4th and was operated on for appendicitis. He will be forwarded to his new station as soon as he is released from the hospital. He appears to be recovering as rapidly as could be expected.

Recent promotions in the Squadron were Private 1st Class Hobbs to Corporal and Private Pearson to Private 1st Class, to fill vacancies within the Squadron. Private 1st Class Young was rated A.M. 2nd Class, and Sergeant Davis, Corporals Melton, Davidson and Mouring, all A.M.'s 2nd Class were re-rated AM's 1st Class.

Four members of the Squadron, Privates Everett, Williams, Waggoner and Rushton, were transferred to the 3rd Weather Squadron, Barksdale Field, La., and attached to the 3rd Weather Squadron Detachment, this station, and to this Squadron for quarters, rations and administration on Sept. 25th. On September 27th, Private Rushton was appointed Private 1st Class and the other three men transferred thereto were rated Specialists, 6th Class. All of these men have been undergoing training and performing duty with the Weather Section, this station for a number of months.

This is a fire prevention week at Maxwell Field. We are having a thorough check of all buildings, etc., and receiving a lot of helpful

information on DO NOTS, fire drills, and so on, to help reduce the fire hazards of the post, and in general a thorough study of the situation is in the hands of a competent Board of Officers to handle the situation. As a result of the check-up and warnings, it is noticed that all people occupying separate quarters have given the police detail plenty of odds and ends to haul away to the Post Dump. I believe some people have found things in their basements that they had forgotten they owned.

The new bowling alleys in Montgomery opened their doors to the public on October 2nd, and free bowling was enjoyed by all comers. Our Squadron team try-outs made their first appearance on the alleys at 2:00 p.m. October 6th, and some surprising scores were piled up by the contenders for the team. It is believed that this Squadron will give the other squadrons on the post a little something to worry about when the league officially opens on the first Wednesday in November.

San Antonio Air Depot, Duncan Field, Texas.

Among Air Corps officers recently visiting this Depot on cross-country trips were -

Lieut. Colonel Morris Berman, Assistant Executive, Office of the Chief of the Materiel Division, Wright Field, conferring on Air Corps personnel matters, September 20-22, leaving here for the Rockwell Air Depot, Calif., on a similar mission;

Major James A. Mollison, of the Office of the Chief of the Air Corps, October 1-5, enroute in a BT-9 from the West Coast to Washington;

Major H.A. Bivins, of the Field Service Section, Materiel Division, Wright Field, September 26th to October 1st, conferring on engineering matters at this Depot, having as passenger Major James L. Hatcher, Ordnance Department, of the Springfield Armory, Springfield, Mass.;

Captain G.V. Holloman, of the Instrument and Navigation Laboratory, Materiel Division, Wright Field, bringing in a C-14B plane for overhaul, September 22nd.;

Captain E.T. Rundquist, Marshall Field, Fort Riley, Kansas, Sept. 20th, en route in an O-46 to Brownsville, Texas;

Lieut. O.E. Henderson, from Chanute Field, Ill., in a B-18, enroute transporting enlisted men from the Air Corps Technical School, Oct. 1-3.

Captain W.T. Guest, Signal Corps, in charge of the Signal Corps Radio Section at this Depot, entered the Station Hospital, Fort Sam Houston, Oct. 4th, for a minor operation, and is expected to return to duty in about two weeks.

Recent Air Transport Service trips, ferrying Air Corps supplies by Depot personnel, included one by Lieut. C.B. Collier, co-pilot, with Master Sergeant Smith, pilot, and Private 1st Cl. Price, mechanic, to the Fairfield and Middletown Air Depots and return, Sept. 27-29; and one by Lieut. J. Will Campbell, co-pilot, with Staff Sergeant Tyler, pilot, and Private 1st Class Price, mechanic, to the Rockwell Air Depot, Calif., and return, October 1-3.

A recent addition to the 3rd Transport Squadron at this Depot is Private Eugene M. Roberts, formerly on duty at Kelly Field, who reenlisted for the Squadron on September 24th. Private Carl K. Russell, who had been on duty with the 3rd Transport Squadron since April 1st of this year, was discharged by purchase on September 25th.

The annual Fire Prevention Week, October 3-9, is being observed at this Depot, as in previous years, by the appointment of the prescribed Board of Officers for a special fire prevention inspection of the station, in addition to the regular system of inspections and other preventive measures employed at all times at the Depot.

Albrook Field, Canal Zone, Sept. 29th.

An aerial search was conducted on September 28th for the missing boat, LADY CLARA, of Balboa, Canal Zone. The operations consisted of an aerial patrol of the coast line from Balboa, Canal Zone, to David, Republic of Panama, via Aguadulce, R. de P., and Mala Peninsula. The flight of eight A-17 Attack planes, divided into four patrols of two airplanes each, patrolled the area from the coast line to ten miles at sea.

The missing boat was located by the patrol commanded by 1st Lieut. Kenneth R. Crosher, Air Corps, at 9:35 a.m., about three to five miles south of Bruja Point, and two to three miles northwest of Taboga Island.

The duration of the flight was approximately three hours. Radio communication was maintained between patrols during this search.

The fishing boat LADY CLARA was helpless and flying distress signals when found.

Although this mission required considerable flying, it may have prevented the loss of the boat and its crew.

The eight A-17 Attack planes were manned, respectively, by 1st Lieut. Kenneth R. Crosher, Air Corps; 2nd Lieut. Franklin K. Paul, Air Reserve; 1st Lieut. Paul R. Gowen with Corporal Thomas S. Sweet; 2nd Lieut. Glenn C. Clark, Air Reserve, with Private John L. George; 1st Lieut. Felix L. Vidal with Corp. Burnie B. Fowler; 2nd Lieut. Cyrus W. Kitchens, Air Reserve, with Corporal Eugene R. Carabin; 2nd Lieut. Thomas J. Gent, Jr., with Private James B. Shannon; and 2nd Lieut. Lawrence W. Greenbank, with Staff Sergeant Thomas J. Gilbreath.

Selfridge Field, Mich., Sept. 25th.

Rumors that recent changes in training schedules of the newly-organized GHQ Air Force of the U.S. Army might cause cancellation of field exercises by the 1st Pursuit Group, planned for October, were confirmed by Major Edwin J. House, commanding the Group.

The various Pursuit Squadrons of the Group, which were to have taken the field on October 6th to 16th, inclusive, for war games and problems involving air defense of the industrial areas in this section of the country, will remain at Selfridge Field pending the completion of plans for vastly greater exercises by the entire Second Wing, GHQ Air Force, of which Selfridge Field is an important part.

Instead of isolated Groups acting alone on field maneuvers, it was explained, such training will in the future be conducted by the Second Wing as a whole.

Selfridge Field Squadrons were to have based at Lansing, Grand Rapids and Marshall airports.

AIR CORPS TECHNICAL SCHOOL

SUSTINEO ALAS

AIR CORPS NEWS LETTER

SPECIAL EDITION OF THE AIR CORPS TECHNICAL SCHOOL, CHANUTE FIELD

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

NOV. - 1 - 1937

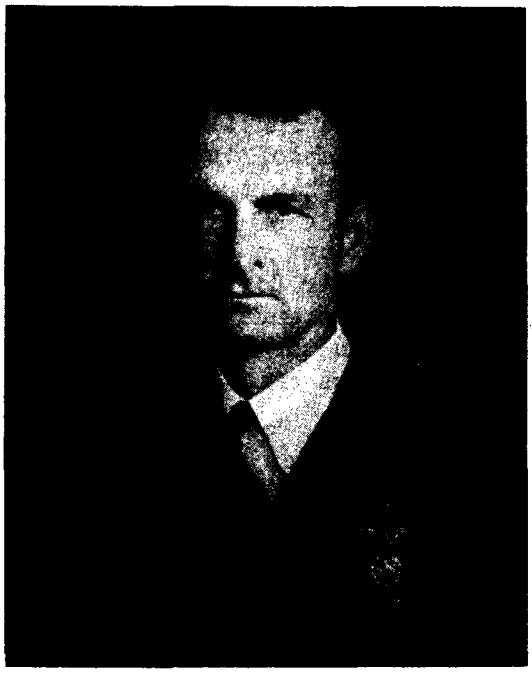
VOL. XX NO. 21

Foreword

The great progress that has been attained in the past few years in the technical field of aviation, particularly in its application to military purposes, has been accompanied by an ever increasing demand for trained specialists, not only in the mechanical operation of the airplane , but also in its purely military appurtenances. To meet this demand the meager facilities of the Air Corps Technical School have been expanded in a short time to such an extent that the annual output of such trained specialists has been increased from approximately 200 to 1000. Although plans are now being studied toward further expansion in the form of a branch school now being surveyed in Denver, Colorado, the resultant increase will still be inadequate to meet the requirements of the Air Corps, which requirements will be measured, not in hundreds, but in thousands.

The compendium is an effort to depict graphically what has already been accomplished and to stimulate the interest and cooperation of the entire Air Corps toward the realization of the true mission of the Air Corps Technical School. This mission will be realized when the standard of technical training of the Air Corps is raised to such a degree that accidents resulting from errors in technical operation are practically unknown.

James W. Jones



Junius W. Jones, Lieut.Colonel, A.C., Commandant

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Born Louisiana April 3, 1890. Appointed Military Academy March 1, 1909. Appointed 2nd Lt. Coast Artillery Corps June 12, 1913. 1st Lt. July 1, 1916. Captain June 27, 1917. Air Service July 1, 1920. Major July 1, 1920. Transferred to Air Service November 25, 1921. Colonel (temporary) March 2, 1935. Lt.Col. August 1, 1935. Relieved Colonel (temporary) June 6, 1936. General Staff Corps Eligible List. Graduated Army War College 1930; Command and General Staff School 1929; Air Service Pilots School 1920; Air Service Observation School 1921; Air Corps Tactical School 1928; Naval War College 1934. Rated Airplane Pilot and Airplane Observer. Commandant, Air Corps Technical School, August 20, 1934.

Earle G. Harper, Major, Air Corps, Assistant Commandant

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Born Ohio Feb. 3, 1890. Appointed from California. 1st Lt. Aviation Section Sig.O.R.C. Nov. 8, 1917. Accepted Nov. 14, 1917. Active duty Nov. 14, 1917. Capt. A.S.Nat.Army June 26, 1918. Accepted July 6, 1918. Vacated Sept. 15, 1920. 1st Lt. Infantry July 1, 1920. Transferred to Air Service October 26, 1920. Captain August 11, 1928. Lt.Col. (temporary) March 16, 1935. Major (temporary) June 16, 1936. Major October 1, 1937. Graduate Air Service Pilots School 1921; Air Service Observation School 1921; rated Airplane Pilot and Airplane Observer. Assistant Commandant, Air Corps Technical School, Sept. 22, 1934.

THE AIR CORPS TECHNICAL SCHOOL

HISTORY

The Air Corps Technical School, first known as the Enlisted Mechanics Training Department, was organized at Kelly Field, Texas, about October 1, 1917. Operating in tents and with inadequate equipment, very little was accomplished from October through December of that year.

Reconstruction of the school was started in January, 1918, resulting in improved conditions due to better housing facilities, more and better school equipment, and an adequate supply of text and reference books. Graduates of the school assigned to the various squadrons were found, to the surprise of all concerned, to be very valuable as airplane mechanics; this was sufficient cause to warrant the expansion of the school. Additional courses were incorporated and a short time later the name was changed to the Air Service Mechanics' School and it became a permanent organization of the Air Service.

The school was moved from Kelly Field, Texas, to Chanute Field, Rantoul, Illinois, in January, 1921. Some idea of its development may be gained from the fact that it required ninety freight cars to move the equipment to the new station.

The Photographic School at Langley Field, Virginia, and the Communications School at Post Field, Oklahoma, were transferred to Chanute Field in 1922 and incorporated with the Air Service Mechanics' School. Shortly afterwards, the name was changed to the Air Corps Technical School, its present designation.

FUNCTION

The principle function of the Air Corps Technical School is to supply the Air Corps with highly trained technicians for the maintenance of Air Corps equipment, correspondence and records. Students of the Air Corps Technical School receive a standardized form of training based on the essential requirements of Air Corps commissioned and enlisted personnel.

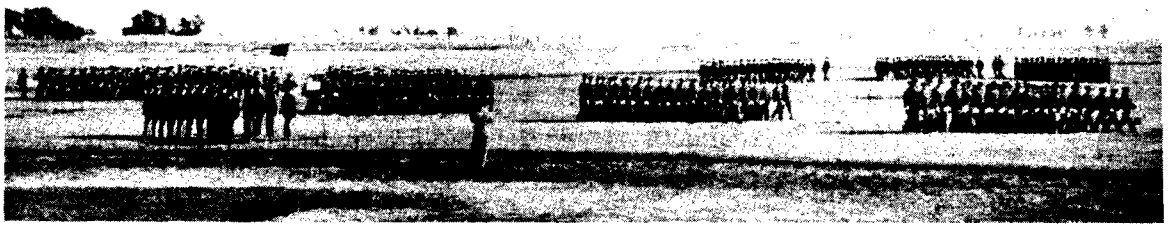
ORGANIZATION

The Air Corps Technical School is under the direct supervision and control of the Chief of the Air Corps. It is composed of six departments, namely, the Department of Mechanics, the Department of Armament, the Department of Photography, the Department of Communications, the Department of Basic Instruction, and the Department of Clerical Instruction.

The personnel of the school consists of the Commandant, school staff, and such student officers and enlisted men as may be enrolled for a course of instruction.

The Commanding Officer of Chanute Field is also the Commandant of the Air Corps Technical School, and is especially selected for this duty by the War Department. He has charge of general school administration and is responsible for all matters of instruction therein.

The Assistant Commandant is also selected by the War Department; under supervision of th Commandant he has charge of instruction and administration in the school. He has general charge of the preparation of training literature and such additional data as may be required to carry out the training program.



After 30 years service a review in honor of retirement of First Sergeant Edwin Booth, and presentation of a gold watch by his organization commander, Major E.G.Harper, AC.

The Secretary, under the supervision of the Assistant Commandant, conducts correspondence of the school, is custodian of the records thereof, and performs such other duties as he may be assigned.

The Directors, under the supervision of the Assistant Commandant, have charge of instruction in the various departments of the school. They are responsible for the direct supervision of the preparation of courses and instructional matter of their respective departments.

The Faculty Board consists of the Commandant, the Assistant Commandant, Secretary, and such Directors, Senior Instructors and Instructors as may be designated. It acts upon such matters relative to the school as may be referred to it by the Commandant and determines all matters relative to standing, rating or classification, proficiency or deficiency of students.

INSTRUCTION

The applicatory method of instruction is used throughout the Air Corps Technical School. A proper balance is maintained between classroom lectures and recitations, and shop and laboratory work. Practical jobs and exercises, representative of situations likely to be encountered in the service, are assigned to each student, who is encouraged to develop proper habits of work and to master all details of technique in accomplishing each job. Lectures are presented with the aid of physical and graphical demonstrations whenever such teaching devices may be used to advantage. The classroom work of officer classes is occasionally supplemented by lectures given by representatives of the Materiel Division. A welcome relief from the monotony of routine instruction is the annual spring inspection trip made by each of the student officer classes; future commissioned specialists thus are enabled to obtain first hand information concerning the development and production processes employed by government and industry in the manufacture of technical material for the Air Corps.

The Maintenance Engineering course for officers is of ten months duration, beginning in September; Armament, seven months beginning in December; Photography, nine and one-half months beginning the middle of September, and Communications, nine months beginning the first of October.

The classes of enlisted men are staggered in accordance with an approved time schedule to enable the several departments to accommodate classes of from eight to thirty men in the most efficient manner possible. The instructors are thus enabled to give individual attention to each student. Students are graded daily on proficiency and are given an academic or examination grade after each examination, or at the end of each phase and course. Those students who fail two of the prescribed subjects are ordered to appear before the Faculty Board where the cause of the failure is determined and recommendation is made on the disposition of the student. The number of failures are few, since each enlisted student is carefully classified by the Trade Test Department prior to entering the school. The functions of this department are very similar to those of an employment department of a large corporation. Each applicant must have certain specific qualifications for entering any particular course. By the use of intelligence tests, study of personal record and a personal interview, the general qualifications of each applicant are determined. This, together with his interest, desire, age, alertness, and

the examiner's opinion as to his potential qualifications, form the basis upon which he is recommended for training. The eligibility of an enlisted man is determined only after a careful check has been made of the following qualifications:

1. Education:
   a. Public and High School;
   b. Higher, Technical or Trade Schools;
   c. Nature of courses elected while a student;
   d. Grades, or relative standing in mathematical or scientific courses;
   e. Army Schools attended.

2. Work History in Civilian Life:
   a. Trade followed, if any;
   b. Nature of jobs held, duties entailed, length of service, advancement, etc.

3. Army Service:
   a. Length of service;
   b. Principal duties since entering the service.

The Trade Test Department assembles the above information by the use of a comprehensive application blank, and subsequent verification through former employers and school activities.

The entrance examinations consist of the following:

1. Mathematics Tests:

These cover all phases of work in grammar school arithmetic (fractions, decimals, ratio, proportion and square root), elementary algebra, and geometry. When it is considered that in the Department of Basic Instruction only seven days are allotted to the teaching of shop mathematics, it is apparent that the applicant must possess a working knowledge of these subjects prior to entering the Air Corps Technical School, inasmuch as a thorough understanding of mathematics is essential if a student is to be successful in any course.

2. Aptitude Tests:

These are fundamental tests in Elements of Electricity, Shop Work, Knowledge and Use of Simple Hand Tools, Blue Print Reading, and such other tests as might be necessary to determine the technical qualifications or mechanical aptitude of an applicant for a course of study. These tests determine with equal success the aptitude of either the inexperienced high school graduate or the service man with training and experience of a technical nature.

3. Intelligence Tests:

The Army Alpha has been used in this school for many years, and is modified at regular intervals to keep its context from becoming out of date. It is so designed that it will furnish the necessary information to determine whether or not an individual is sufficiently alert mentally to assimilate, in the time available, the instruction given. A similar form of mental test is used in most of the high schools and colleges throughout the country, and has recently been adopted by many large industries as an aid in the selection of young men for apprentice training. Previous education and experience of the individuals tested have an important bearing on the test results.

4. Interview:

Upon his arrival at the school, each applicant is given a personal interview at which time it must be evident that he has sufficient interest in Radio, Mechanics, or any other course selected

so that he will carry his work to a successful completion. The progress of each Air Corps, Chanute Field (unassigned) student is carefully observed while undergoing the four weeks of basic instruction to determine further his aptitude, adaptability, and qualifications for the course which he has selected. Occasionally it is advisable after checking his progress in various phases of Basic Instruction, to transfer a student to a course for which he is better suited.

GENERAL

To be graduates of one or more of the courses given at the Air Corps Technical School is the hope of the ambitious enlisted men of the Air Corps. It supplies them with the necessary technical knowledge to pass successfully technical examinations for Air Corps promotions.

The advantages of a course of instruction in this school are not only appreciated by those in the service, but also by those who have not had previous military experience, but who have learned of the school and the different courses offered. A priority list of civilian applicants for the Air Corps Technical School is maintained by the Trade Test Division. After enlistment, and upon completion of five weeks' recruit instruction, applicants are interviewed by the trade test examiner and detailed as students in courses for which they are best qualified. During the period covered by recruit instruction and the period of attendance at school, these students are carried as "Air Corps, Chanute Field," and are continued as such until their graduation when they are assigned by the Chief of the Air Corps to Air Corps stations.

Entrance requirements for officers and enlisted men of the Regular Army Air Corps are contained in Army Regulations 350-540 and Circular 35-7, Office, Chief of Air Corps.

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Mr. R. W. Faubian, Senior Instructor of the Trade Test Division, has just decided that Pfc. W. C. Ahrens of Selfridge Field is eligible for a course of instruction at the Air Corps Technical School.

THE DEPARTMENT OF BASIC INSTRUCTION

Captain Narcisse L. Cote, Air Corps, Director.

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Perhaps you haven't heard of the Basic School in connection with the Air Corps Technical School? What you are mainly interested in when you think of Chanute Field is one of the technical courses taught there and the advantages to be gained in being a graduate of one of those technical courses.

It was discovered some time ago that it was rather difficult for some men to grasp even the simplest theories and formulae that are the basis upon which any technical subject is founded, particularly so when it had been some time since they had been to high school. Theories and facts of an abstract nature are easily forgotten unless they are brought to mind time and again until they become a habit of the mind through practical application.

Then too, although the prospective student may have handled tools of all kinds either in civilian life or in the Air Corps, he may never have learned the correct names of those tools or how to use them to best advantage so that the job each tool was made to do is done with that tool and done in such a manner that any other tool would not have done the job as well. The tools the Air Corps mechanic is mainly interested in are those used in connection with metalwork.

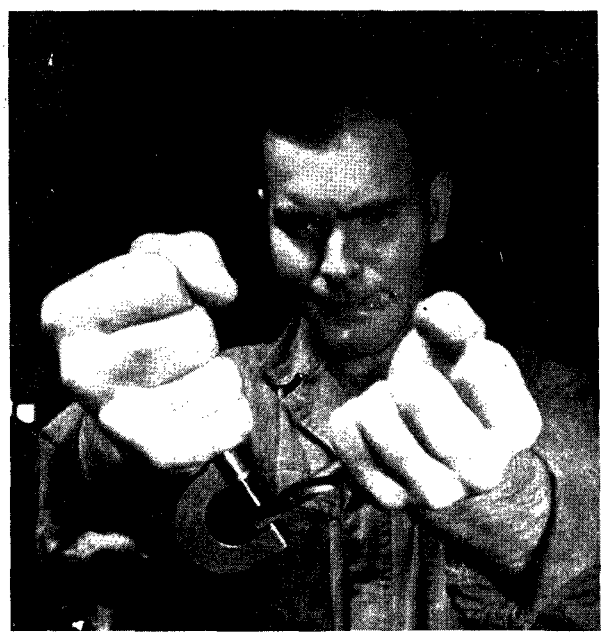
To those who make no use of them, blueprints and mechanical drawings may seem to be a mysterious jumble of lines, but to the mechanic, they are the written language of his work. Every Air Corps mechanic should be able to make simple mechanical drawings and should be capable of interpreting from a blueprint so that he may be able to follow the circuits of wiring diagrams and make installations as pictured in technical orders.

Electricity, it seems, is a major consideration in any technical subject. Almost every craftsman must use it in one form or another, the Air Corps technician should certainly understand the basic laws of electricity before he attempts to master the more complicated machines and defices connected with his trade specialty.

The School of Basic Instruction seeks to give the student an insight into all of these things in the very short space of four weeks that are allotted to that section of the school. You see, the idea is not to present added subjects to the student and thereby increase his work and make it more difficult for him to graduate; indeed, the opposite is true. The Basic School course is intended to make the technical courses easier for the student.

It is more or less a refresher course covering the high points of his high school work; bringing back to mind things that he once knew well, but has forgotten because of not having heard or used that knowledge over a period of time.

Nothing new or complex is presented in the course that the average high school graduate cannot grasp readily. Only the very basic elements of Shop Mathematics, Electricity, Tools and Metalwork, and Mechanical Drawing and Blueprint Reading are taught. The subjects are taught not



"Honest, my hands felt that big when I started to use a micrometer", says Pvt. A. H. Dell of Barksdale Field..

with the idea of giving the students mere abstract knowledge to remember, but rather to give him a practical mental and workmanlike base to stand on in his future courses.

Don't get the idea that most of the work in the Basic School is study and lecture either. Only one-eighth of the time is spent in the classroom. All the rest of the time the student is in the laboratory or shop putting that classroom knowledge to work and demonstrating to himself the 'hows' and 'whys' of what he has learned.

A long time ago the directors of the various courses pursued at the Technical School realized that some sort of basic instruction was an essential preliminary to the training in any of the technical subjects and so, one by one, each course instituted its own basic instruction. To more readily standardize this work, it was later decided to group all the basic schools together in-

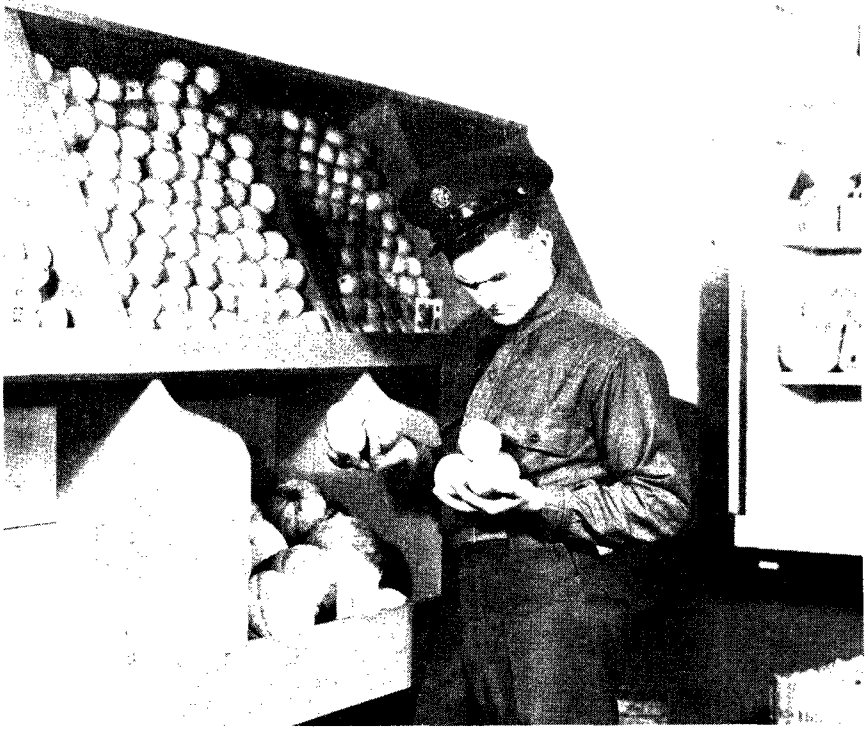
...."But heck, I can do it blindfolded after that course".

asmuch as the separate schools had all taught practically the same things. So now, we have the one course of basic instruction.

The whole purpose of the Basic School is to help the prospective student remember what he has forgotten and to get him started on the right foot for his technical schooling.

The Trade Test Division is that section of the Basic School which decides, even before the student starts whether or not he is capable of completing one of the courses at the Technical School. This section is also responsible for the make-up and marking of the

Pfc. T. A. Schild, Senior Instructor in Shop Mathematics says, "Now, if ... three-fifths as many oranges as ....."



.....and Pvt. E. A. Crumley of Langley Field decides on a practical demonstration.

eligibility examinations taken for entrance to the Technical School. These examinations together with the tests for mental alertness given on arrival at the school form a valuable index of the student's capabilities and possibilities.

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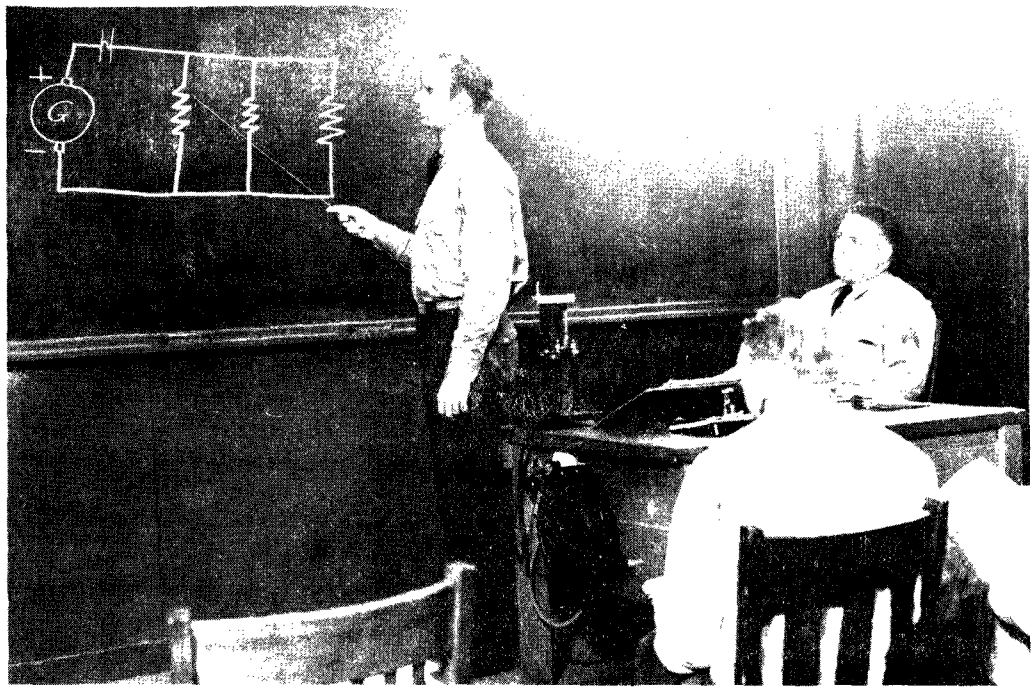
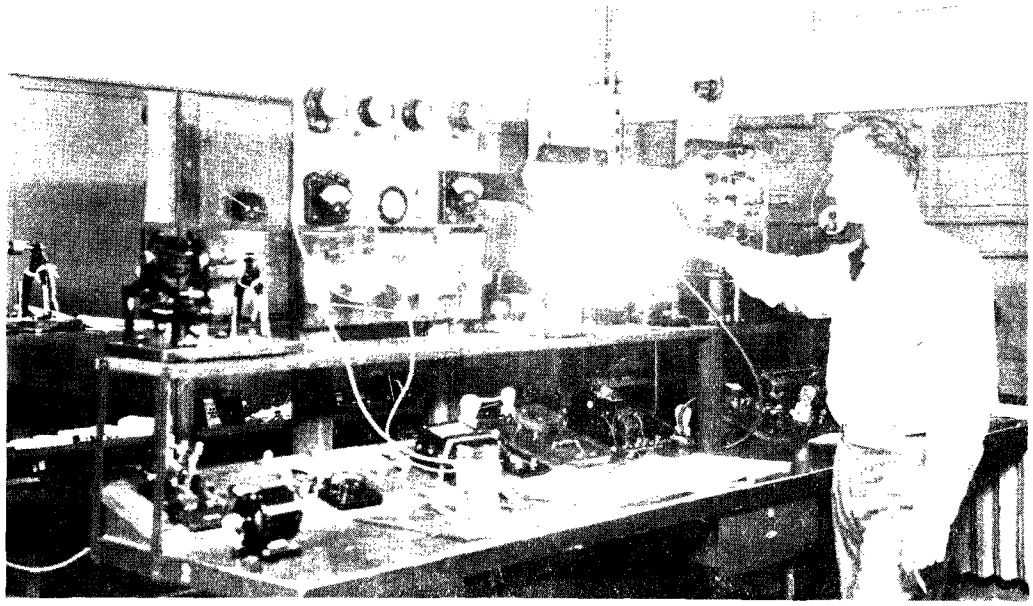


.....now it's Corp. Story's turn to tell about parallel circuits.....



....and finally, he constructs a circuit in parallel in the laboratory. He won't forget what a parallel circuit is.

DEPARTMENT OF MECHANICS

Major William M. Lanagan, Air Corps, Director.

It is the function of the Department of Mechanics, Air Corps Technical School, to train officers and men in the various trade specialties involved in the operation, maintenance and repair of all types of military aircraft.

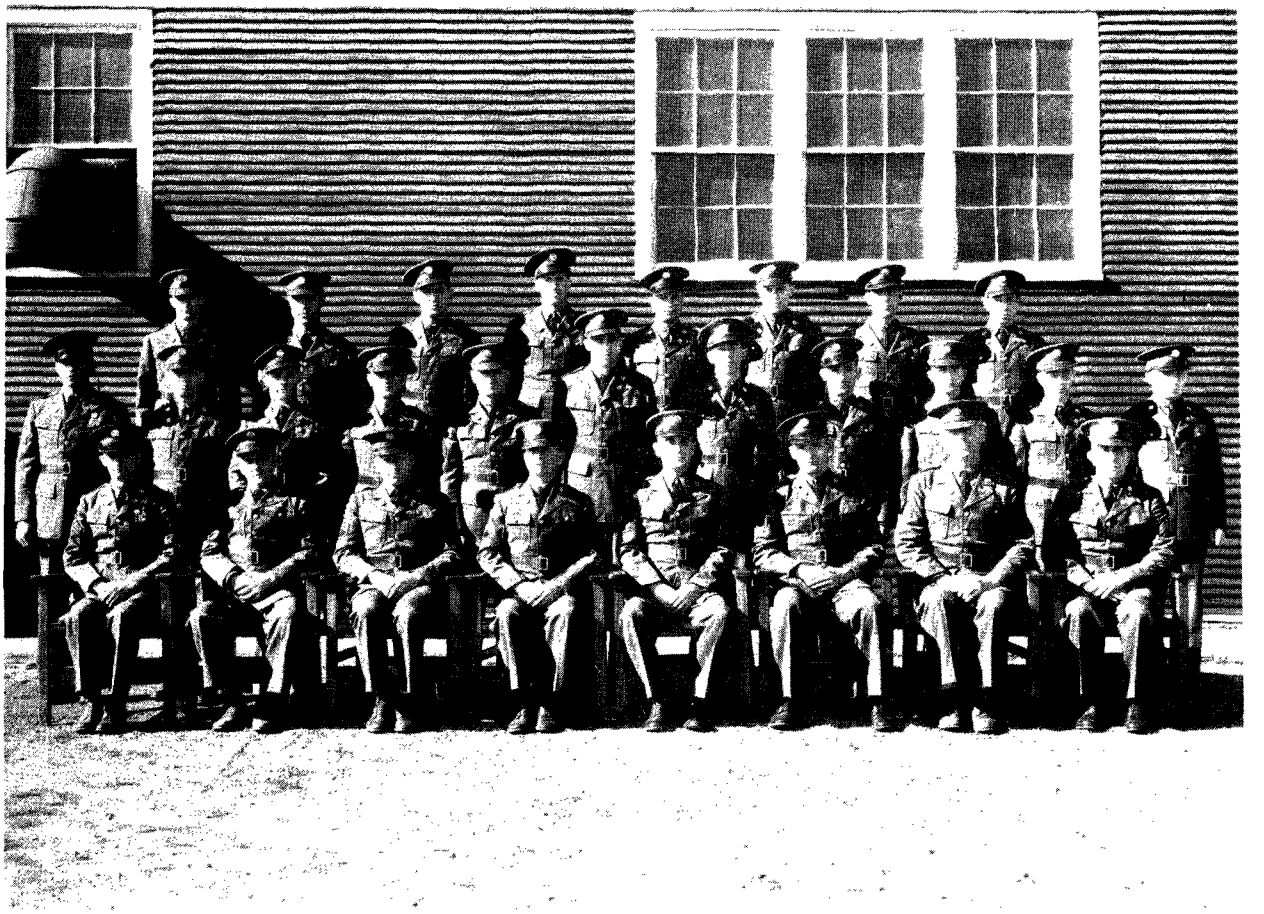
The general organization of the department is somewhat similar to that of the Engineering Department of an Air Depot. A central office maintains all records and reports and handles all administrative matters; whereas, the school buildings and actual instruction is divided into four (4) sub-departments or divisions namely: Airplane Division, Power Plant Division, Machine Shop Division and Parachute Division, the details of which are defined in subsequent articles. The personnel of the department consists of four (4) officers, approximately thirty (30) enlisted men and twenty (20) civilian instructors.

The applicatory system of instruction is practiced in so far as possible, therefore the school rooms consist primarily of shops and laboratories with merely sufficient class rooms for conducting lectures, demonstrations and examinations. Approximately three-fourths of the total time allotted for instruction is devoted to actual work in the shops and laboratories and one-fourth to class room instruction. The percentage of class room instruction for officers' courses is necessarily somewhat higher than this. The nature of work conducted in the shops and laboratories consists of approved methods of repair, adjustment, test, and operation of various aircraft units; whereas, the class room instruction consists of the principles of construction and operation of these units and the reasons for performing work as prescribed. Class room instruction also includes the application and use of all technical publications, drawings, etc., and mechanics of handling equipment and supplies.

The Program of Training conducted by this department varies annually, depending upon the needs of the service. During the ensuing school year a total of approximately fifteen (15) officers and six hundred and fifty (650) enlisted men will be trained in nine (9) different courses, a brief outline of which follows:

1. Airplane Maintenance-Engineering Course.- a. Purpose. To instruct and train officers in the construction principles, repair, maintenance, and inspection of airplanes, airplane engines, and auxiliary appliances; the operation, repair and maintenance of shop and hangar equipment; and in the duties of an Air Corps Engineering Officer.

b. The duration of this course is ten months long and includes instruction in Machine Shop Practice; Metal Shop Practice; Airplane Construction and Repair; Airplane Propellers; Airplane Instruments; Engine Construction and Repair; Airplane Electrical Systems; Engine Induction Systems,



Enlisted Personnel, Department of Mechanics

Front Row - Left to Right: Sgt. S.H. Bishop, Instr. Parachutes; S.Sgt. E. J. McClellan, Instr. Dope & Fabric; S.Sgt. W.M. Grady, Instr. Airplane Repair; M.Sgt. G.P. Stanaland, Sr.Instr. Parachute Div.; M.Sgt. O.K. Lee, Instr. Airplane Repair; S.Sgt. L.T. Burval, Instr. Welding; S.Sgt. G.A.L. Genoway, Chief Clerk; S.Sgt. B.H. Litten, Parachute Rigger.

Middle Row - Left to Right: Sgt. F.J. Leonard, Instr. Airplane Inspection; Pvt. J.E. Ball, Instr. Sheet Metal; Corps. D.E. Erwin, Instr. Ignition; Corp. L.E. Mayea, Instr. Sheet Metal; Sgt. H. Anderson, Parachute Rigger; Sgt. G.E. Cain, Instr. Ignition; Corp. V.E. Botkin, Supply; Sgt. F.W. Leary, Instr. Carburetion; Sgt. C.P. Hamilton, Instr. Carburetors; Pvt. H.P. Robbins, Clerk; Pvt. F.V. Garbich, Instr. Ignition.

Rear Row - Left to Right: Corp. E.H. Farr, Instr. Propellers; Pvt. C.H. Short, Instr. Engine Testing; Pvt. W.F. Gorsage, Machinist; Pvt.1cl J.F. Holliday, Instr. Machinist; Pvt. B.L. Minton, clerk; Pvt.1cl G.F. Tate, Instr. Instruments; Pvt. M. A. Zeiger, Instr. Airplane Inspection; Pvt. R.C. Moore, Clerk.

Fuels and Lubricants; Engine Operation and Testing; Airplane Assembly; Parachutes; Airplane Maintenance and Inspection; Air Corps Maintenance-Engineering System; Auxiliary Equipment Installations and Inspection Trips, and Instructions in Preparation of Efficiency Reports. Total number of hours: 1266.

2. Airplane Mechanics' Course.- a. Purpose: To train enlisted men in the general construction principles, minor repair, adjustment, inspection and maintenance of the complete airplane, engine, and affiliated equipment; also the care and use of material, tools and equipment used in the hangar.

b. The duration of this course is twenty weeks for assigned men, and twenty-four weeks for unassigned men. The course includes instruction in Airplane Construction and Repair; Airplane Propellers; Airplane Instruments; Engine Construction and Repair; Airplane Electrical Systems; Engine Induction, Fuels and Oil Systems; Engine Operation and Test; Airplane Assembly, and Airplane Inspection and Maintenance. In addition, unassigned men receive four weeks additional instruction in the Department of Basic Instruction. Total number of hours: Assigned Men, 600; unassigned men, 720.

3. Aircraft Machinists' Course.- a. Purpose: To instruct and train selected enlisted men in general machine work, forging and heat-treating.
b. The duration of this course is twenty weeks for assigned men, and twenty-four weeks for unassigned men. The course includes instruction in Lathes; Milling Machines and Shapers; Forging and Heat-Treating, and Grinding Machines. Unassigned men receive four additional weeks instruction in the Department of Basic Instruction. Total number of hours: Assigned men, 600; unassigned men, 720.

4. Aircraft Welders-Sheet Metal Workers Course. - a. Purpose: To instruct and train selected enlisted men in oxy-acetylene welding, construction and repair of metal aircraft structural units, aircraft sheet metal work and radiator repair.
b. The duration of this course is twenty-four weeks for assigned men, and twenty-eight weeks for unassigned men. This course includes instruction in Basic Sheet Metal Work; Airplane Metal Work; Heat-Treating; Basic Welding and Aircraft Welding. Unassigned men receive four additional weeks instruction in the Department of Basic Instruction. Total number of hours: Assigned men, 720; unassigned men, 840.

5. Parachute Riggers Course. - a. Purpose: To instruct and train selected enlisted men in the construction, repair, maintenance, and inspection of parachutes and parachute equipment used by the Air Corps.
b. The duration of this course is eight weeks, and includes instruction in Parachute Construction and Repair and Parachute Maintenance and Inspection. Total number of hours: 240.

6. Propeller Specialists' Course. a. Purpose: To train especially selected enlisted men in the construction, operation, repair and maintenance of propellers, and the operation of equipment in the Air Base Propeller Shop.
b. The duration of this course is six weeks and includes instruction in Airplane Propellers (Basic) and Airplane Propellers (Advanced). Total number of hours: 180.

7. Instrument Specialists' Course. a. Purpose: To train especially selected enlisted men in the construction, operation, repair and maintenance of airplane instruments and the operation of equip-

ment in the Air Base Instrument Shop.

b. The duration of this course is six weeks, and includes instruction in Airplane Instruments (Basic) and Airplane Instruments (Advanced). Total number of hours: 180.

8. Electrical Specialists' Course.

a. Purpose: To train especially selected enlisted men in the construction, operation, repair and maintenance of airplane electrical units, and the operation of equipment in the Air Base Electrical Shop.

b. The duration of this course is eight weeks, and includes instruction in Airplane Electrical Systems (Basic and Advanced). Total number of hours: 240.

9. Carburetor Specialists' Course.

a. Purpose: To train especially selected enlisted men in the construction operation, repair and maintenance of engine induction, fuel and oil systems and the operation of equipment in the Air Base Carburetor Shop.

b. The duration of this course is six weeks, and includes instruction in Induction, Fuel and Oil Systems (Basic and Advanced). Total number of hours: 180.

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THE AIRPLANE DIVISION

The Airplane Division includes a number of instructional units organized for training students in Airplane Maintenance-Engineering (Officers), Airplane Mechanics (enlisted men) and two Specialists' courses (enlisted men). The primary purpose of the division, is to teach the principals of operation, inspection and maintenance of the entire airplane and its auxiliary equipment, excepting Armament, Radio and Photographic equipment. This does not include instruction in the power plant and accessories, but does include the installation of this equipment in the airplane.

The units or branches into which the division is divided, closely simulates the organization of a Repair Depot, but instead of the output being airplanes, as is the case in the Depot, here the airplanes and accessories remain stationary in the various branches and the men (students) move on from branch to branch and finally emerge from the Inspection Branch as embryonic engineers and mechanics. Each of the branches are equipped with the latest and best of tools and equipment available in the Air Corps, and continuous stress throughout all branches is placed upon the selection of the correct tools and equipment for the many airplane maintenance problems, so as to produce the best efficiency and safety. The elementary, but very important phase of how to care for these tools and equipment, is also stressed throughout the Division.

The introductory subject in the Airplane Division is a study of the general principals of the Air Corps inspection system as basically outlined in Technical Order 00-20. This is taught first because, as the student progresses through the various units or branches, he is taught the detailed inspection and maintenance requirements on the portions of the airplane, or its accessories allotted to each branch. He is then taught the whole system of Air Corps Technical Orders; the different classifications, how to use the index, what the Technical Orders consist of, and it is impressed upon him that he will have to refer to them often and diligently. Along with this he is taught the use of Stock Lists, the Parts Catalog (Section IV of each Basic Technical Order Handbook) and the

Captain Hugo P. Rush, Air Corps,
Assistant Director.

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Air Corps Drawings for the purpose of identifying parts, making installations and changes, without a knowledge of which the Engineering Officer and mechanic is lost even though well qualified otherwise. The proper use of A.C. Forms 81 and 82 (Stores Charge and Stores Credit) is taught, and henceforth, the student prepares these forms for all supplies and parts drawn or returned during the entire course.

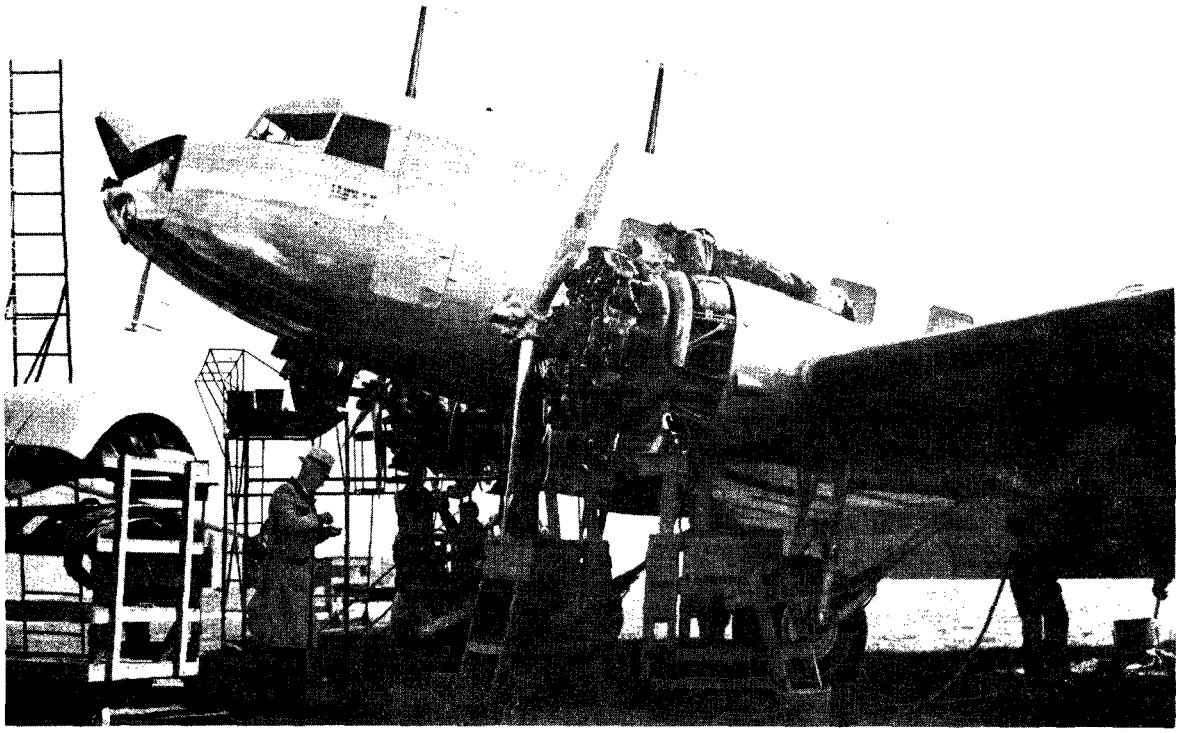
The first shop problem is that of inspecting the fuselage and wing structure of an airplane. At present A B-10B is used for this training. In all instruction in inspection of structures, how to recognize signs of incipient failures, corrosion, deterioration of protective coatings is the primary problem. Next in sequence, is what to do about it. Following this is a study of flight control systems and their inspection and maintenance; then, tail and landing gears, wheels and brakes and a phase recently added which will be greatly expanded and emphasized in the future, hydraulic systems. The basis for the latter is the elaborate system as used in the B-18, one of which is stationed at Chanute Field, and which will be used at times for a part of the instruction in this comparatively new system. Special emphasis is placed upon the inspection and maintenance of wheels and brakes, tail and landing gears and retracting mechanism. The student becomes familiar with the above mechanisms and systems by disassembly and assembly supplemented by study assignments, classroom lectures, and discussions by the instructors. In many cases, mock-ups are provided for demonstration, and in some instances, lantern slides are projected. Malfunctions, adjustments, inspections required by Technical Orders, checking of clearances, tension of cables, and replacement of parts are the points stressed. Repairs requiring machine work are not taught as this work is covered by specialized courses for Base shop men operated in an other division of the department and which is described elsewhere in this issue.

Next, in the usual sequence, comes the training in propellers; then, instruments. These two branches not only train students in Maintenance-Engineering and Airplane Mechanics, but also Specialists. A description of both these branches is also covered separately elsewhere in this issue.

After completing propellers and instruments, the student moves into the Engine Division, and all its branches, and finally returns to the Airplane Division to complete the course. When each class returns, they bring with them three engines which they have assembled and tested. The class is assigned to three airplanes; any three of the following at present: P-26, P-26A, A-17, O-46A, B-10B, BT-2 and P-29. The three engines in the airplanes are

removed and those the class brought along with them are installed. During this engine change all instruments and connecting lines are removed, inspected and re-installed; fuel lines are removed, inspected and replaced; the engine section is thoroughly cleaned and inspected; and the entire electrical system is checked. When

spections on the latest types of modern airplanes. This work, in the Inspection Branch, is closely supervised by three enlisted and one civilian instructor who have specialized in airplane inspection for many years. This branch is equipped with the very latest and best equipment procurable for conducting airplane inspections with speed



Students performing 40 Hour Inspection on C-33

the engine change has been finished, a complete 40-hour inspection is conducted and recorded on Form 41's, provided in the authorized manner. The airplanes are serviced with gas and oil, placed on the line and the engines operated. Here the pre-flight inspection is taught. At this point, the student has completed a study of the airplane from propeller to rudder and is ready for his final finishing off.

The "finishing off" process consists of a series of 40-hour in-

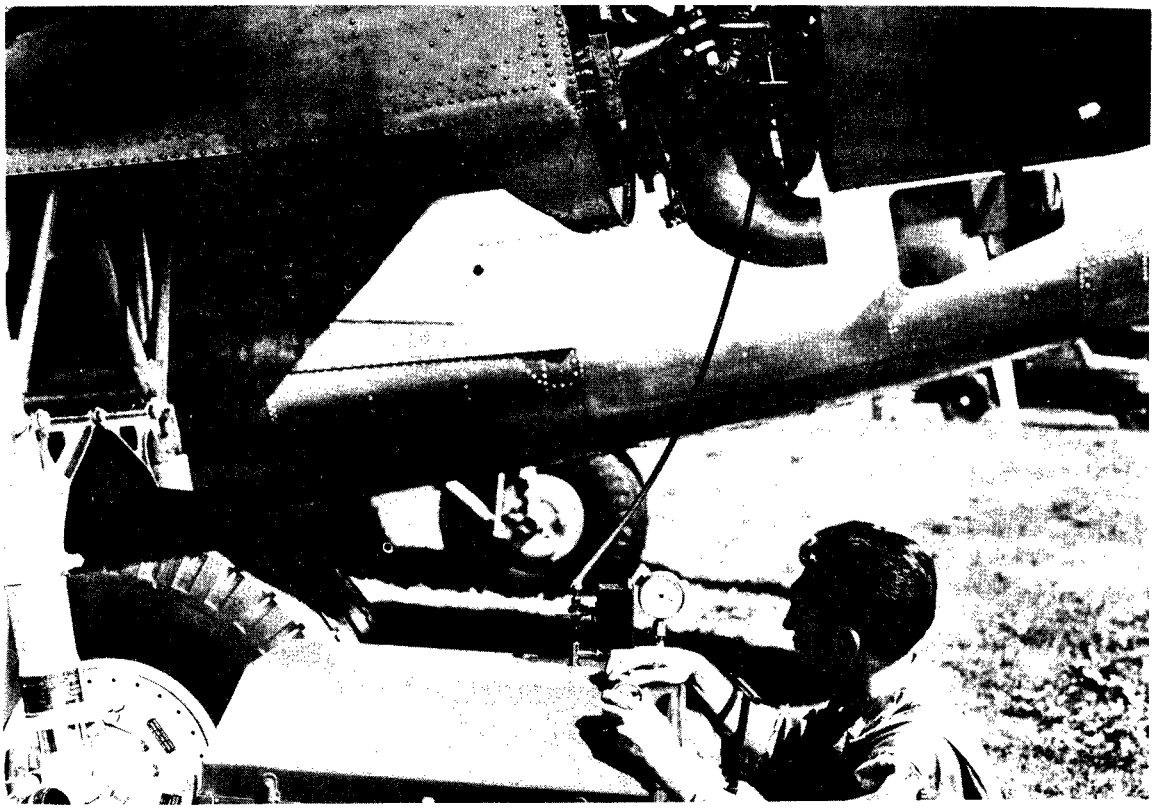
and accuracy. This includes such items as washing equipment, lubricating equipment, portable lights, cleaners, work stands, vacuum cleaners, over-head track, propeller dollies, and the many and various special tools required for propeller, engine and airplane maintenance. The first airplane inspected is a small one, such as, a P-26, PB-2 or BT-9. This is followed by a larger airplane, such as, an A-17A, or O-46A, and the final project is a B-18, C-33 or even a B-17. Since the policy was inaugurated to assign one of each series of modern airplanes to the Air

Corps Technical School, there has been no difficulty in obtaining suitable modern airplanes for this training. Previous, to this time, it was necessary occasionally to borrow airplanes from other stations. This no longer is necessary, but can still be done, if for any reason airplanes are not available. By the time this work is completed, the student has not only the necessary knowledge, but has the confidence that he can make a practical application of same with reasonable efficiency. It has been a long, hard, but very interesting grind, and each student is justly proud of the diploma he receives.

Each branch of the Airplane Division is manned by competent and experienced instructors. One civilian and one or more enlisted instructors are employed in each branch. These men have up to 20 years experience in their own specialty and most of the civilians are ex-service men of war-time experience. It is their unrestricted policy to render conscientious, efficient, and courteous service to the student and the school.

PROPELLER BRANCH

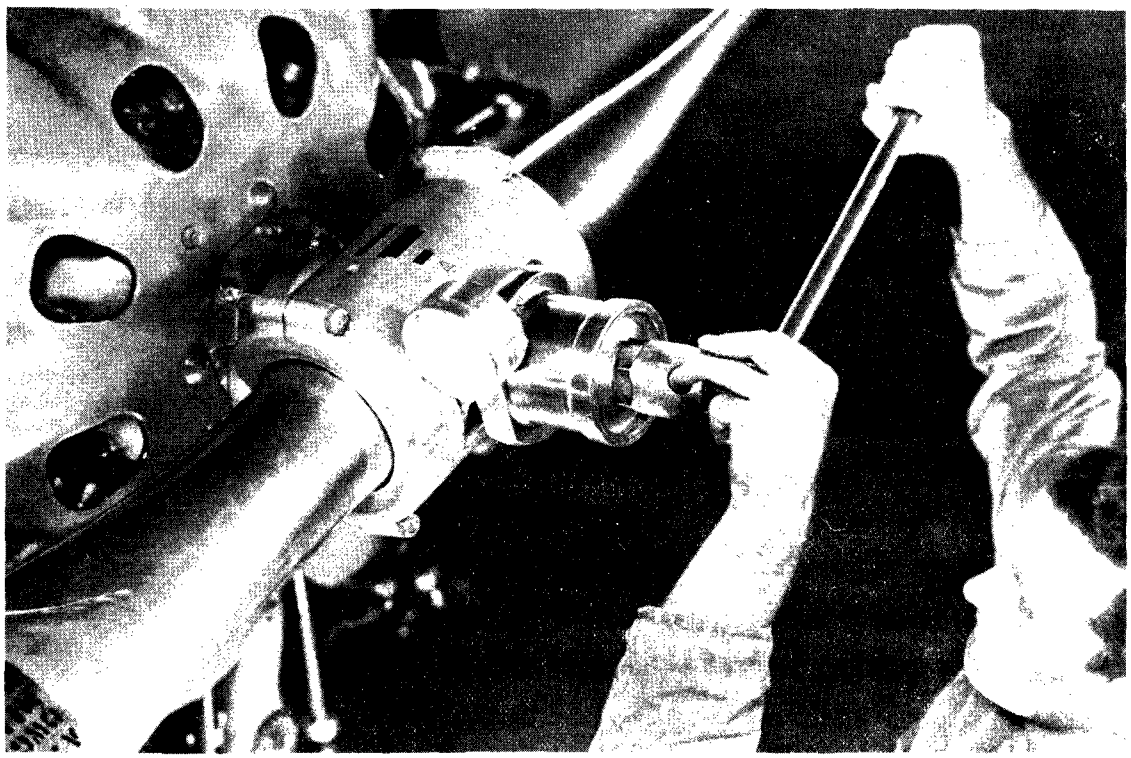
Since the advent of the controllable propeller into the Air Corps, this Branch has become a very important part of the school. It is the function of this branch to acquaint the student with the operating principles of each propeller used in the service, with sufficient shop work to train him for the duties he will be required to perform. The amount of time a student is in this branch depends on whether he is taking a course for Airplane Mechanics or Propeller Specialists; two weeks is allotted the



Checking instruments with Field Testing Set

Airplane Mechanic, while the Propeller Specialist is given six weeks. All work in the shop conforms to existing regulations as outlined in Technical Orders. Theory as applied to propellers is discussed by the instructor in the classroom. He is aided in this by the use of sectionalized models of the different types of propellers and by the actual demonstration of propeller vibration. Theory and classroom discussions have an important place in this branch, as do oral and written tests. From these tests, it is possible to determine whether the student understands that particular phase of the work.

the airplane mechanic will be trained to perform shop maintenance or overhaul of propellers. Therefore, their work in the shop is of such a nature that will train them for the duties required in the Service. The most important phase of this branch insofar as airplane mechanics are concerned, is the inspection and maintenance of propellers. The manner and procedure is first demonstrated. Each student is then required to make a similar inspection on each type of propeller. By the time the student reaches this point he has been instructed in the proper nomenclature and function of component parts of the propeller, as well as the assembly and associated operations.



Student checking Propeller

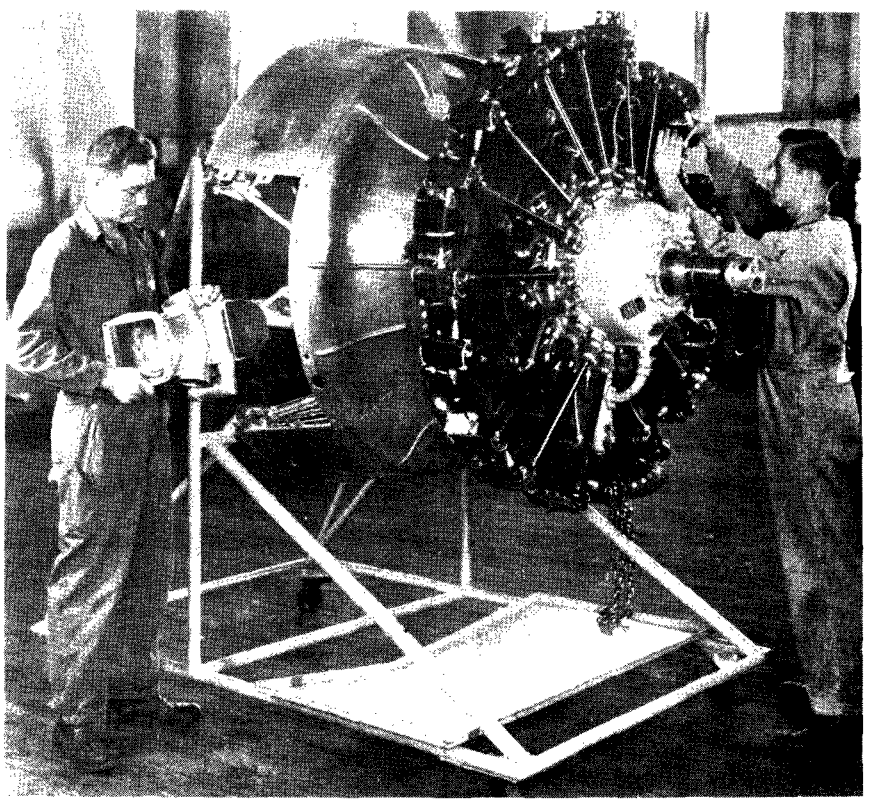
In the shop the students work in groups of three, having modern shop equipment and hand tools at their disposal. The work given here depends again on the course of instruction. For example, it is not intended that

He has then a knowledge of the equipment he is inspecting and the procedure of making an inspection. Checking track and blade angle with a propeller installed is part of the instruction given. Each student checks the blade angle with

the Universal Protractor. The different types of propellers are removed and reinstalled under the supervision of the instructor. The importance of this phase is emphasized. On completing the two weeks in this branch, a final examination and proficiency grade is given. If both are satisfactory the student is permitted to proceed in his course.

The Propeller Specialists undergo the same instruction as the airplane mechanic the first two weeks of his course. Work in the shop is such that will enable the student to perform an overhaul and repair the different types of propellers. It includes disassembly and inspection of all component parts, either visual or by the magnaflux method. The propeller is then assembled, checked for track, blade angle is set and it is balanced. The finished propeller is checked by the instructor who holds the student to a high degree of accuracy. They are instructed in the use of the special tools required for the different types of propellers.

Commissioned officers undergoing a course of instruction in Airplane Maintenance-Engineering are given a two weeks period in this branch. These students are trained to supervise any and all work on propellers and to be able to make a decision on the serviceability of a propeller or its parts. The importance of the periodic inspections is stressed as well as the common service troubles and the means of correcting the same is discussed and demonstrated. This information is invaluable to the Engineering Officer.

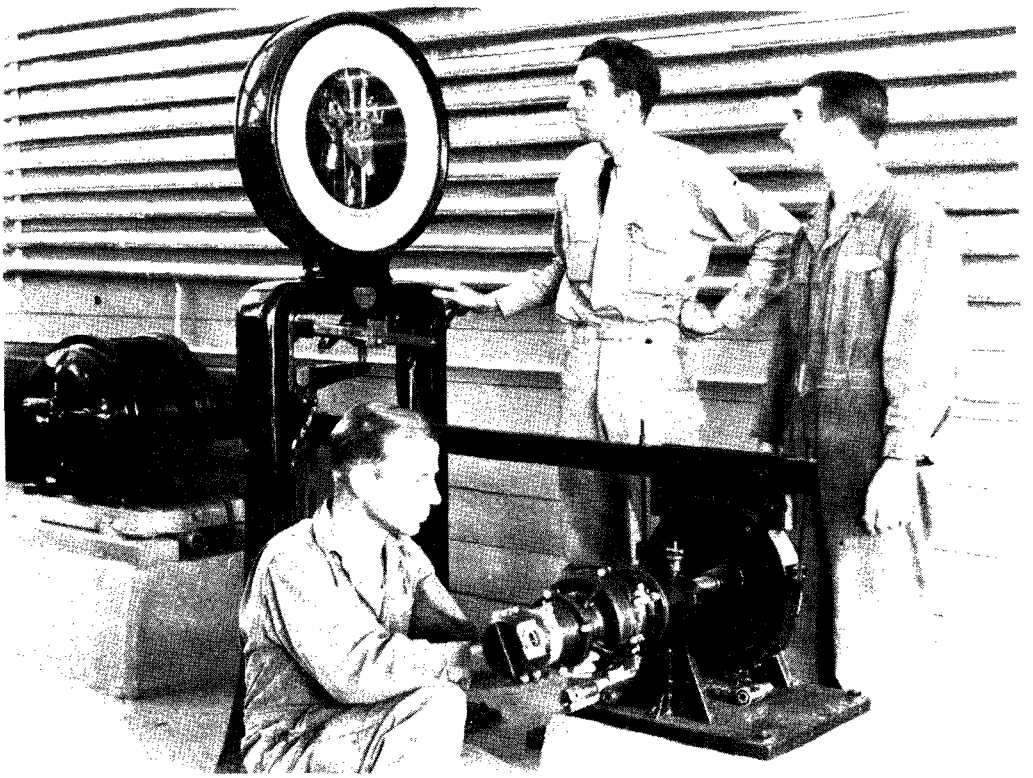


Students assembling engine and accessories for C-33

Briefly the information and instruction given the student in this branch, not only enlightens them on the subject matter, but it also gives him confidence in his own work with the satisfaction of knowing the work performed is the approved method and the results gratifying. This comes from training.

ments, inspection and installation practice.

Demonstration lectures are given using sectionalized models to first familiarize the student with the purposes, uses, and operating principals of each instrument. This is immediately followed by laboratory experiments



Prony Brake Test

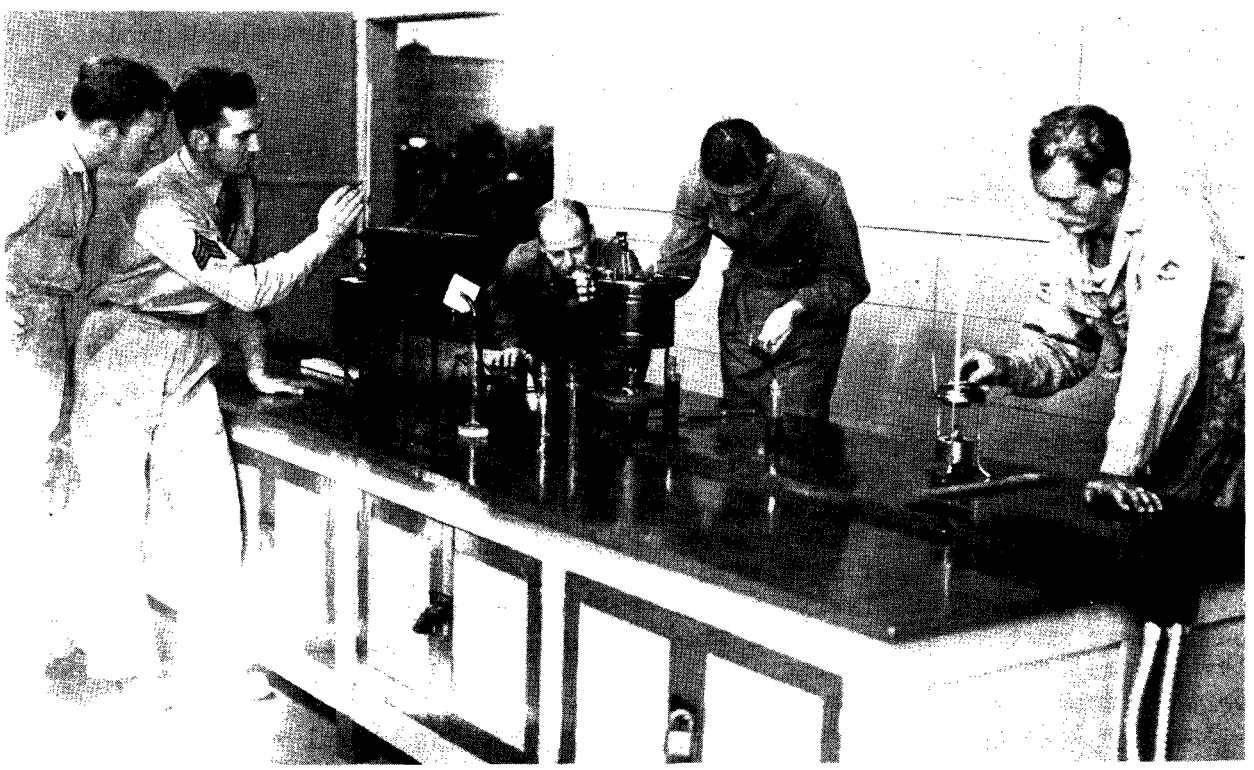
INSTRUMENT BRANCH

Instruction on instruments is considered to be a very necessary part of the training given to the combat crews and maintenance personnel of all airplanes. In this school an instrument laboratory containing all of the standard instruments and their necessary maintenance equipment is available for this training.

Instruction consists of demonstration lectures, laboratory experiin which each student actually operates the instrument under the same conditions as it is subjected to in flight. Each instrument is run up and down through its scale range and the readings at each calibration point are compared with a manometer, a barometer or other equivalent of a master gage. By this means, he learns to correctly read the instruments, learn their limitations, and determine their accuracy. Particular stress is laid on the very close tolerance required in aircraft instru-

ment, he is taught repair practices and procedure, such as present regulations permit in field organizations. This includes cleaning and lubrication of external parts, replacement of broken cover glasses, the sealing of cases, the resetting of dials and pointers, the use of zero adjusters and minor adjustments of internal parts. Following the minor repair of an instrument, it is then given a scale error test and such other special tests as are required to determine without a doubt that it will function correctly on an airplane, under flight conditions.

Following the laboratory instruction each class is assigned to school airplanes and are taught the inspection procedure and maintenance required at periodic intervals on service airplanes. The portable field test set is used for this instruction. Emphasis is placed on the necessity of correct and proper installation of instruments. Installations and discussion of such defects as sharp bends, fouled lines, leaks restrictions and improper fittings are given so that the student is lead to the realization that perfection is the only standard that is acceptable for any instrument that is installed on an airplane.



Fuel and Oil Laboratory Testing

Approximately thirty basic instruments with their respective variations are covered in the course of instruction. This includes all the standard engine and flight instruments and very recent developments such as the automatic pilot, exhaust gas analizers, autosyn and other new types of electrically operated instruments. Graduates are competent to perform the necessary instrument maintenance and repair required in squadron, group and Base Engineering units of service organizations in the Field.

THE POWER PLANT DIVISION

1st Lieut. R. J. O'Keefe, Air Corps,
Assistant Director.

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The human body is the most perfect mechanism devised by nature. Analogously, the power plant and the related equipment of the modern airplane is the most perfect mechanism devised by man. Figuratively, the power plant must be treated with similar discretion and care prescribed for the human body in order to perform, during its life span, the purpose for which it was intended. Both of these mechanisms are capable of withstanding abuse and mistreatment; however, there is always a day of reckoning. Whereas one mechanism maintains and repairs itself with very little assistance, the other is dependent for its very existence upon the ability and care of that man affectionately called "The Greaseball". The power plant is the heart of the airplane; the operator is the brain; the fuel and oil is the food and drink; the time between overhauls is the useful life; the mechanic is the physician and surgeon. The mechanic - the "Doctor", is a major cog in the intricate organization of the Air Corps. He doesn't fly an airplane, but it can not fly without him. He treats and maintains a power plant at such a high standard that every available horsepower may be "nursed" out of the equipment with a high degree of reliability. This division, within the limits of its ability, endeavors to carry on a course of instruction which trains student mechanics capable of performing such an important mission.

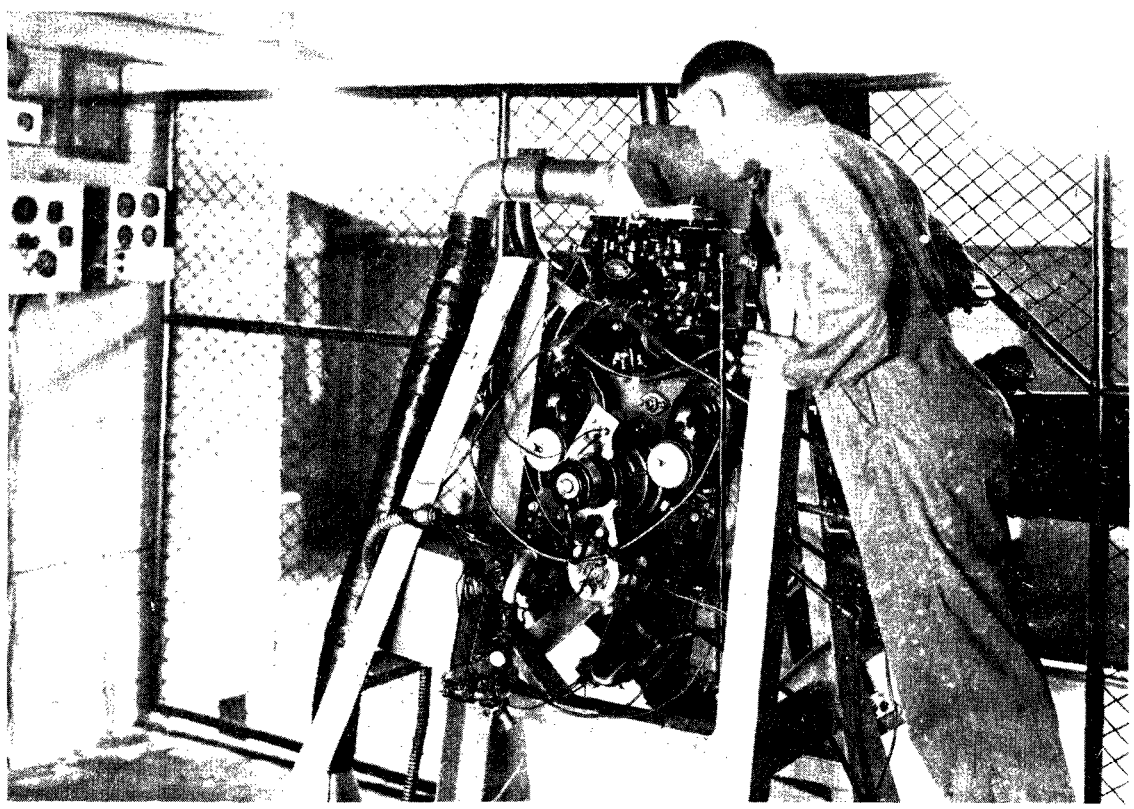
METHOD OF INSTRUCTION

The objective of this instruction is to impart to the student mechanic the knowledge necessary to efficient maintenance and repair of the power plant and related systems. This objective is accomplished by instructing the student in construction, operating principles, and proper maintenance of the pertinent equipment. A high degree of efficiency in a mechanic will insure a high degree of reliability in the operation of the airplane. An effort is made to confine theory to a minimum and practical application to a maximum; however, theory is covered in detail when necessary to an understanding of just what the equipment does, how its useful work is accomplished, and the means and methods used to maintain a high standard of performance. School texts and technical publications are given to the student for study outside of classroom and shop, and for a guide in the classroom and shop. Numerous lectures supplement the study and practical application for a better understanding of the subject.

SECTIONALIZED UNITS AND DEMONSTRATIONS

The intricacies of operating machinery are usually mysteries to the student until the equipment has been totally dismantled. Where complete dis-

assembly does not permit complete understanding, "cut-away" or sectionalized units are utilized to expose hidden complexities. The mystery is a mystery no longer and is exposed in all its nakedness to be just a simple operation or effect. For example, sectionalized carburetors, superchargers, pumps, cylinders, magnetos, valves, etc., are used. The student is given a detailed explanation of carburetor icing. To supplement the explanation he observes through a glass window the actual formation of ice in a carburetor installed on an operating engine. The carburetor icing conditions are introduced at will on the engine test stand where the student sees the ice form and then disappear as the carburetor heat control is operated. He not only knows how the ice forms, but he sees the formation and observes the effect on engine performance. Detonation is demonstrated on a one cylinder gasoline engine to supplement the classroom explanation of the phenomenon. Aircraft engine instruments are used to give the student the identical indications he would encounter in a detonating aircraft engine. He is instructed in the cause, observes the effect, and learns how to use the available means of preventing detonation which has become a serious problem in present-day highly supercharged aircraft engines. From the above, it is obvious that sectionalized units and demonstrations tend to simplify an otherwise complex subject.



Carburetor Icing Demonstration

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KEEPING UP-TO-DATE

Close contact with the Materiel Division, Air Depots and the manufacturer enables the instructors to pass on to the student the development of experimental equipment, maintenance and repair information, and factory methods of construction. The value to the student of this close contact is undoubtedly beneficial because the information procured is as up-to-date as is humanly possible. Such information permits the instructor to advance his knowledge with the development of the power plant which has progressed very rapidly in the last few years, and from all appearances will progress with even greater rapidity in the future.

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THE PHASES OF INSTRUCTION

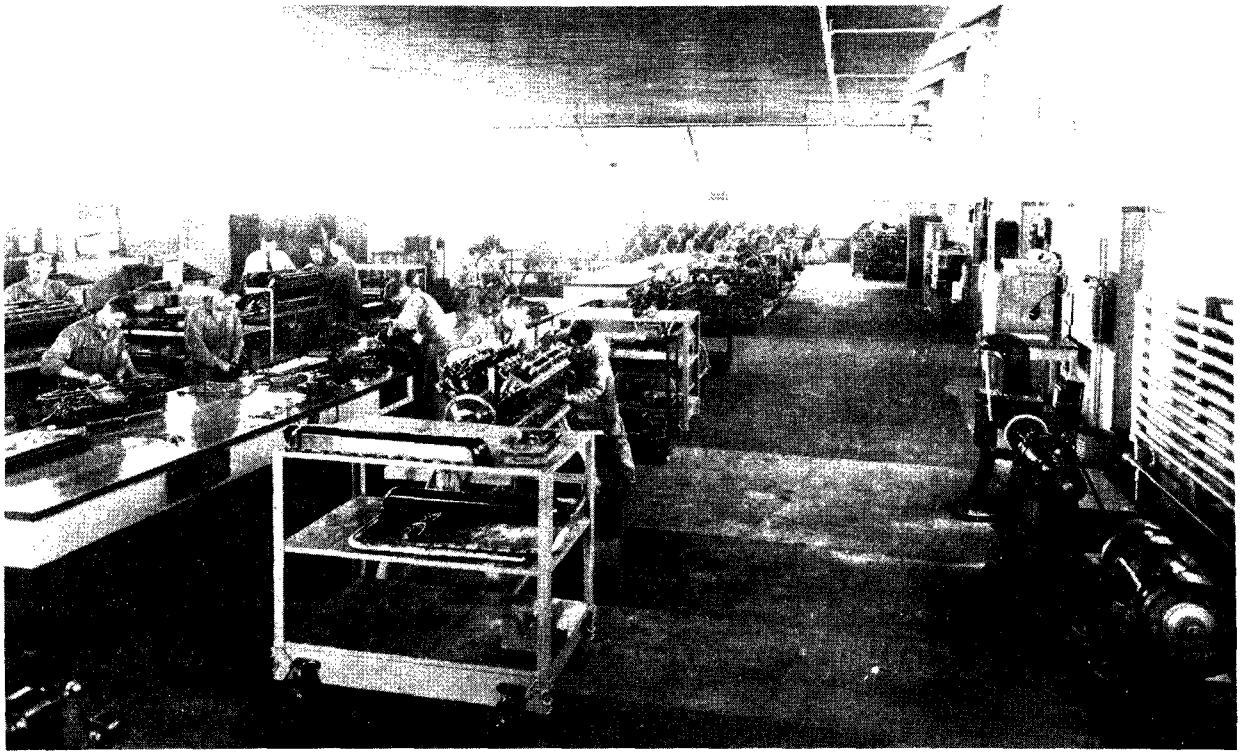
The instruction in the Engine Division is divided into four phases, i.e., Engine Construction and Repair; Electrical Systems; Fuel, Oil and Induction Systems; Engine Operation and Test. The airplane mechanic covers the four phases in approximately eleven weeks. In addition to the airplane mechanics course, two specialist courses are given in Fuel, Oil and Induction Systems and Electrical Systems of six and eight weeks respectively. Engineering Officers take the eleven week mechanics' course and cover practically the same ground as that prescribed for the enlisted mechanic. A short course of four weeks is given to National Guard and Reserve Engineering Officers during the summer months. From the above it can be seen that the Engineering Officer

Student inspecting and greasing tail wheel bearings on O-46

receives the training necessary for his understanding of the problems and difficulties confronting the mechanic in the maintenance and repair of the aircraft power plant.

ENGINE CONSTRUCTION & REPAIR

This phase of the instruction is divided into two separate sections, namely, liquid-cooled and air-cooled engine construction and repair. Modern liquid-cooled engines are used in the work shop and are completely torn down and checked. The necessary maintenance and repair of the engine is studied by the student with particular emphasis given to inspection and adjustment. During the process of disassembly the construction of the engine is studied and discussed. Coolants and cooling systems are covered thoroughly at this time. Modern single row and double row radial air-cooled engines follow the same procedure described above, except in the amount of time spent on the subject due to the present preponderance of air-cooled radial engines used in the "Service". At the close of this phase of the course the engines are adjusted and inspected and prepared for installation on the test blocks where they will be used in the last phase of instruction covering operation and engine test.



Engine Construction & Repair

FUEL, OIL & INDUCTION SYSTEMS

This phase of the instruction is divided into five sections; namely, fuel and lubricant laboratory testing; carburetors and carburetion; fuel injectors and fuel injection, fuel and oil systems;

oil reclamation. Laboratory work consists of the standard tests required by the Air Corps of all fuels and lubricants used on an airplane. The chemistry of fuels and lubricants is covered for a better understanding of their utility. The operation of carburetors, fuel injectors, superchargers, and fuel and oil system units are covered thoroughly. The operation and maintenance of an oil reclamation plant is included in this phase. The operating and maintenance of these complete systems as installed in the airplane complete the course during this phase of the instruction. Frequent demonstrations during instruction supplement the classroom and shop work of the student.

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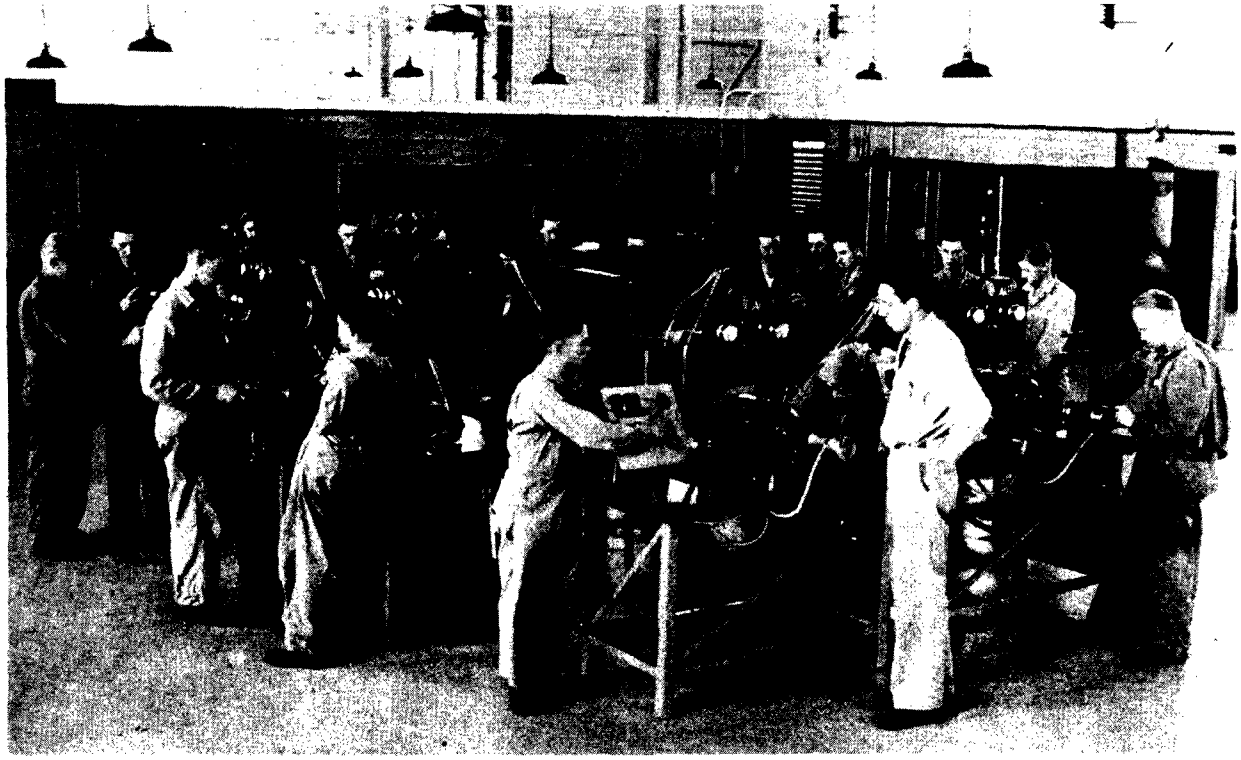
ELECTRICAL SYSTEMS

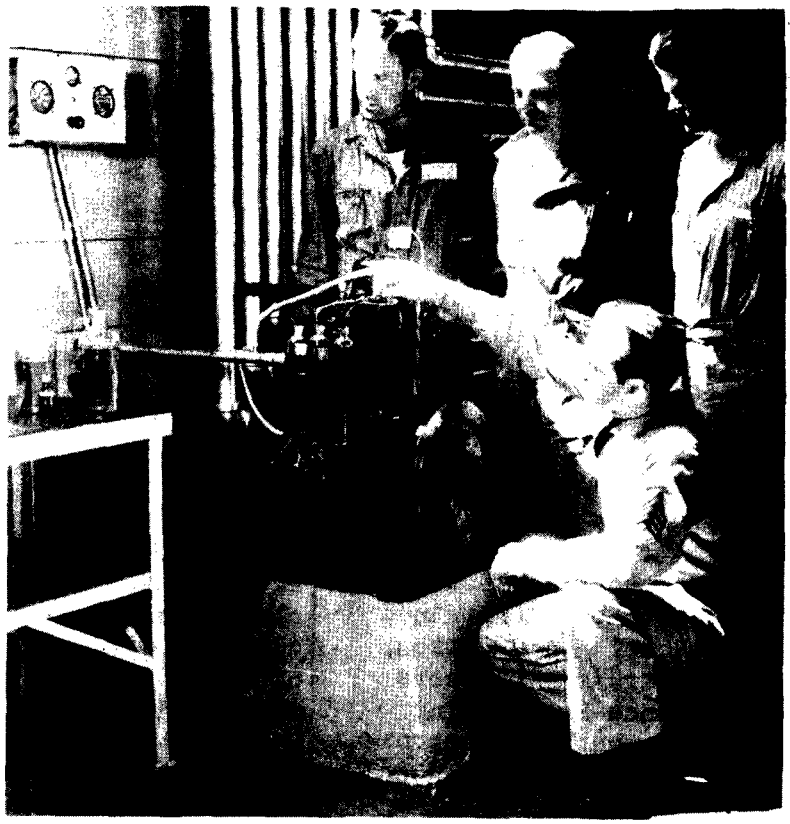
This phase of the instruction is divided into two sections; namely, power plant electrical systems and airplane electrical systems. The instruction in power plant electrical systems consists of test, maintenance and repair of the battery; generator and control system; starter and starter system; ignition system and bonding; shielding and metallizing. The instruction in airplane electrical systems consists of test and maintenance of the electrically operated airplane equipment such as cowling flaps, landing gear, lighting system, propeller, etc. The student is taught how to check the electrical equipment while it is installed in the airplane when such a check is practicable in "trouble shooting". Complete airplane and power



Electrical Test Stands

plant electrical wiring and installation drawings are utilized for study and shop work to familiarize the student with the interrelated individual electrical units and how to "check out" any part of the electrical system by the use of the "voltage-drop" method of test.

test. The instructor introduces "trouble" into the power plant and then teaches the student how to determine logically its elimination. A systematized method of "trouble finding" is taught to facilitate the location of any malfunction in a minimum length of time. The procedure of treating an



Detonation Demonstration

ENGINE OPERATION AND TEST

This phase of the instruction is divided into four sections, namely, engine operation, engine test, power plant "trouble finding", and engine storage and shipment. The instruction in operation includes engine starting, engine "warm-up", engine check, the operation of the power plant during flight, and engine "shut-down". The student is instructed in test block procedure and the conclusions to be drawn from this engine for storage and shipment is covered in detail. This terminates the course of instruction given the airplane mechanic during his short stay in this division and it is thoroughly believed that he is competent to take his place in the service as an embryo mechanic who needs only the actual experience necessary to his full development.

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MACHINE SHOP DIVISION

1st Lieut. William P. Sloan, Air Corps, Assistant Director.

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The primary mission of this division is to thoroughly train enlisted aircraft machinists, aircraft welders, and aircraft sheet metal workers for duty in Base Repair Shops maintained at Air Corps stations. In addition, each class of Regular Army officers taking the Maintenance-Engineering course is given two months or approximately 240 hours of practical shop instruction.

In their two months in this division, the officers' class is given instruction in Lathe Operation, Milling Machines and Shapers, Heat-treating, Precision Grinding, Airplane Sheet Metal Work and Aircraft Welding.

During the two weeks of lathe operation, the officer starts a series of exercises designed to give him experience with each type of work normally performed on a lathe. Additional operations such as fluting reamers, gear cutting, cutting heads on special bolts, and forming Vee blocks are performed on either the milling machine or shaper during the week allotted to that subject. The exercises are then ready for heat-treatment before being finished by grinding.

During the half week allotted heat-treating, instruction is given in all methods of heat-treatment used by the Air Corps and their application to the various metals and alloys used in aircraft construction. At this time, the exercises started in the Machine Shop are heat-treated preparatory to their final completion.

All of the exercises that require a very fine or accurate finish are ground to the desired size and finished during the student's last week in the Machine Shop.

The next step in the Engineering Officer's training is aircraft sheet metal work. In this section, he learns the kind of metals and alloys used in aircraft fabrication, and their uses and limitations are emphasized, both in classroom and shop work. The shop work consists principally of the fabrication of small aircraft parts from sheet metal and the repair of school airplanes. Many of the articles manufactured in this section require welding or silver soldering for completion and are taken to the Welding Shop by the student.

In the welding section the student makes practice welds on all weldable metals and alloys used by the Air Corps until he becomes sufficiently proficient to complete the exercises started in the sheet metal section. Inspection of welds for quality and the proper use and limitations of welding in aircraft repair is particularly emphasized. At this time the student officer has completed two months of training in the Machinists Division of the Department of Mechanics and is transferred to the Airplane Division.

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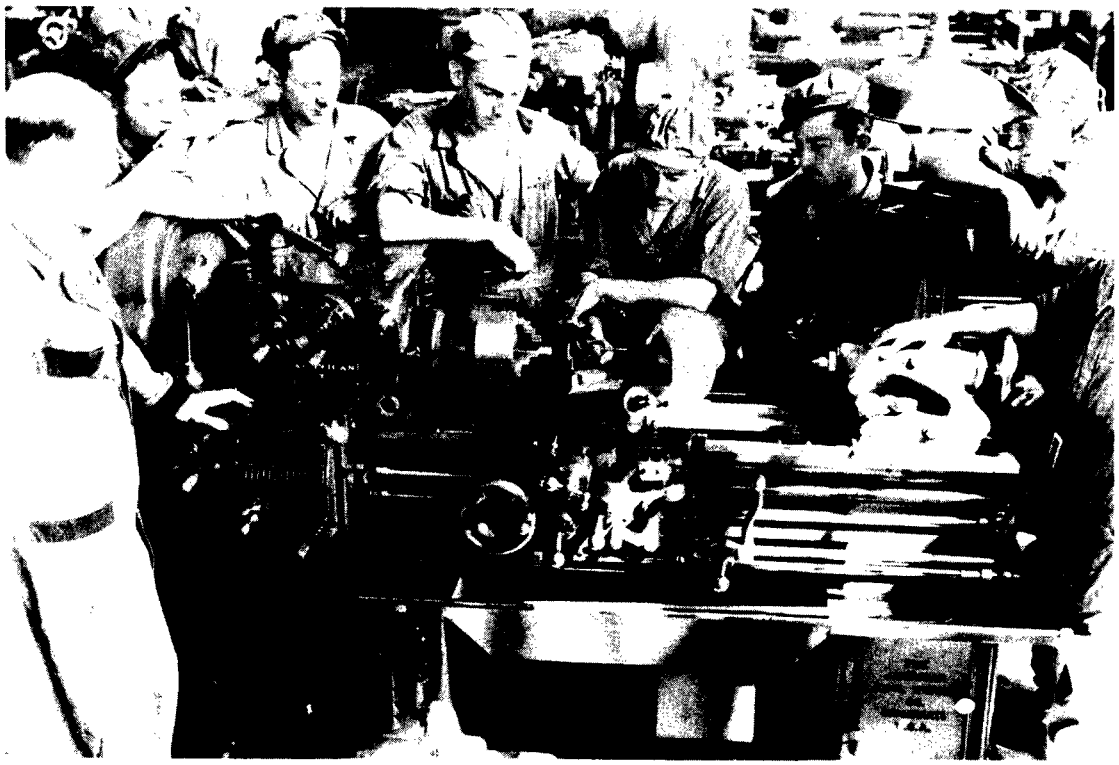
The enlisted student entering this Division selects either the Aircraft Machinists' course or the Aircraft Welders-Sheet Metal Workers' Course. Both of these courses are highly specialized and are arranged to fit the student for one particular job in the Base Repair Shop. Both courses for enlisted men, cover in general, the same instruction given the Engineering officer student, but are far more detailed and exacting. The objectives of these courses are to train the students to a degree of proficiency that will enable them to produce an excellent grade of work on returning to their home station.

The Machinists' course requires twenty weeks or approximately 600 hours to complete. This time is allotted to the four general subjects in Lathe Operation; Milling Machines and Shapers; Forging & Heat-Treating, and Precision Grinding.

In the lathe operation course the student is first started out with demonstrations of correct methods of operation and procedures. Following each demonstration he is given practice exercises designed to make him proficient in all lathe operations used in aircraft repair and maintenance of Air Field equipment.



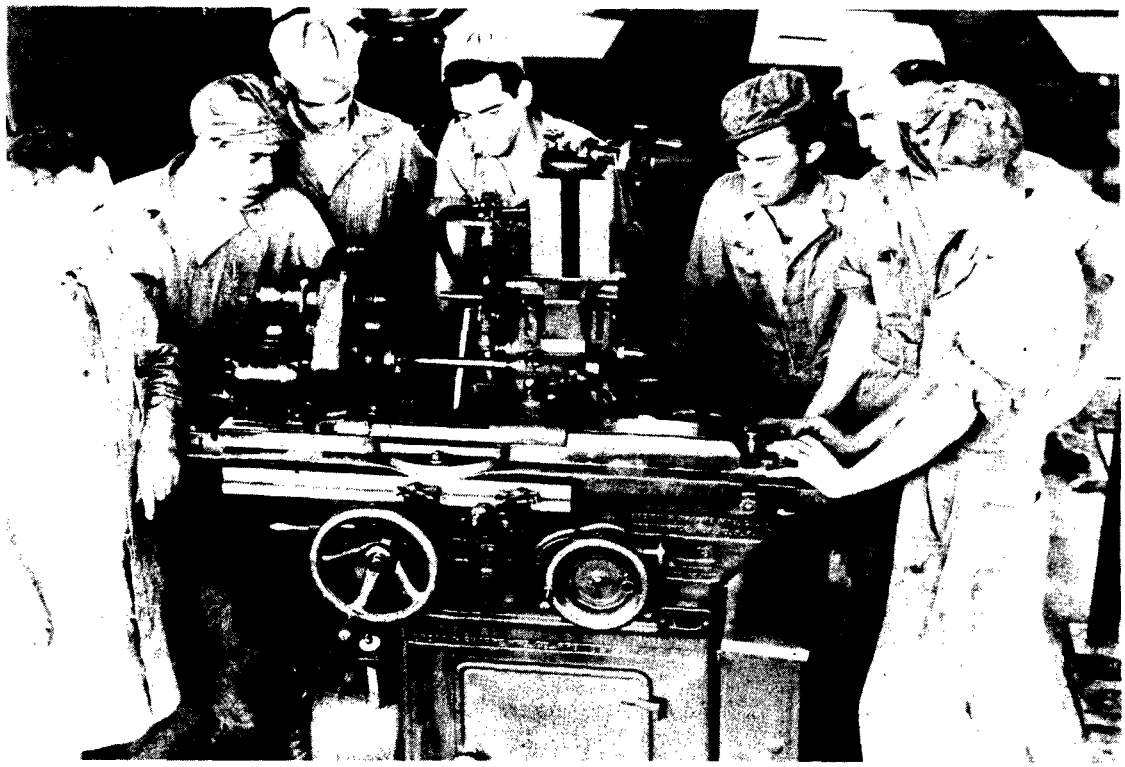
Demonstration: Lathe Work

As soon as his progress permits, the student is given work orders received from other divisions and is thus given every possible opportunity to manufacture parts and equipment for flying airplanes.

Normal progress finds the student starting work on milling machines and shapers at the beginning of his ninth week in school. Instructions in this phase includes plain, face, end and angular milling, gear cutting, dove tailing,

screw slotting, etc. Six weeks of work in this section and the student will have completed a number of projects that will require heat-treatment before they can be finished and will have attained a rather high degree of proficiency in general lathe, milling machine, and shaper operation.

In the last two weeks the student machinist learns precision grinding, grind finishing, sharpening of special tools, milling cutters, reamers, etc. Extreme accuracy is stressed in this work, together with the proper grade and type of grinding wheel to use for best results, on different kinds of materials. This two



Demonstration: Cylindrical Grinding

Four weeks are devoted to forging and heat-treating. The first two weeks are occupied by forging and the last two by heat-treating. Forge work includes fabrication of tools, the manufacture of hooks, chains, hold-down screws, and welding and repair of equipment. Instruction in heat-treatment of material is for the machinist directed primarily toward the treatment of the metals and alloys that he will use in the machine shop, and in addition, he is given a working knowledge of the heat-treatment of other metals used by the Air Corps.

weeks completes the instruction and he graduates with a rather thorough knowledge of machine work required in aircraft maintenance and repair; however, due to the short time allotted for the entire course the graduate lacks that knowledge that must be gained only through experience, and experience only. It is therefore desirable that the graduate make every effort to continue in the line of work for which he has been trained for that is the only method whereby he may gain the experience vitally necessary to become a finished machinist.

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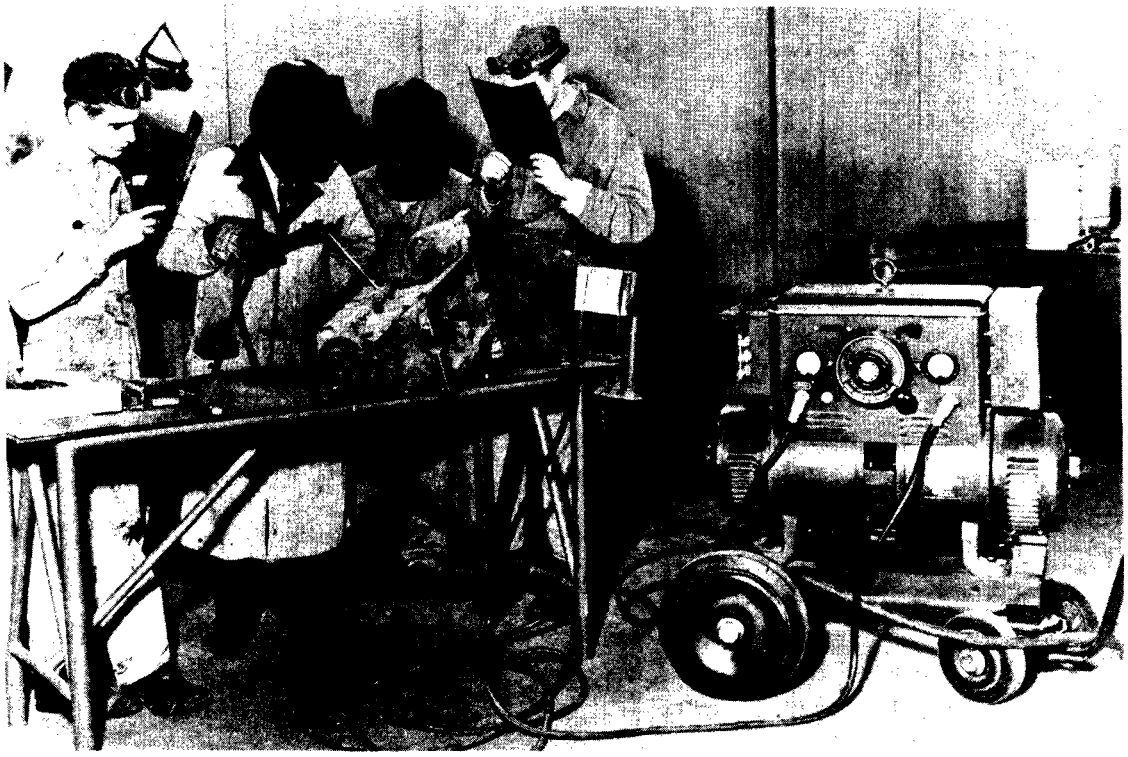
The Aircraft Welders-Sheet Metal Workers' Course for enlisted men requires twenty-four weeks or 720 hours for completion. It is divided into five phases, i.e., Basic Sheet Metal Work; Aircraft Sheet Metal Work; Heat-treatment of Metals; Basic Welding, and Aircraft Welding.

Basic sheet metal work is, as its name implies, designed to teach the student the use of metal forming tools and to make him proficient in their use. Fabrication of funnels, measuring cans, the forming of seams and splices, soft soldering and cable splicing are among the exercises used in this phase of the course.

The seven weeks devoted to aircraft sheet metal work are spent entirely on that subject. The early part of this phase is spent in the repair and fabrication of cowlings, exhaust manifolds, special brackets, and the repair of cracks and tears in metal covered surfaces and fuselages. The repair and fabrication of small stressed parts of the airplane is taught during the latter part of the aircraft sheet metal phase of instruction. The majority of this work is done on wrecked airplanes transferred to this school for training purposes. Strict adherence to technical instructions and the careful selection of the correct material for repairs is emphasized throughout this course.



Demonstration: Arc Welding

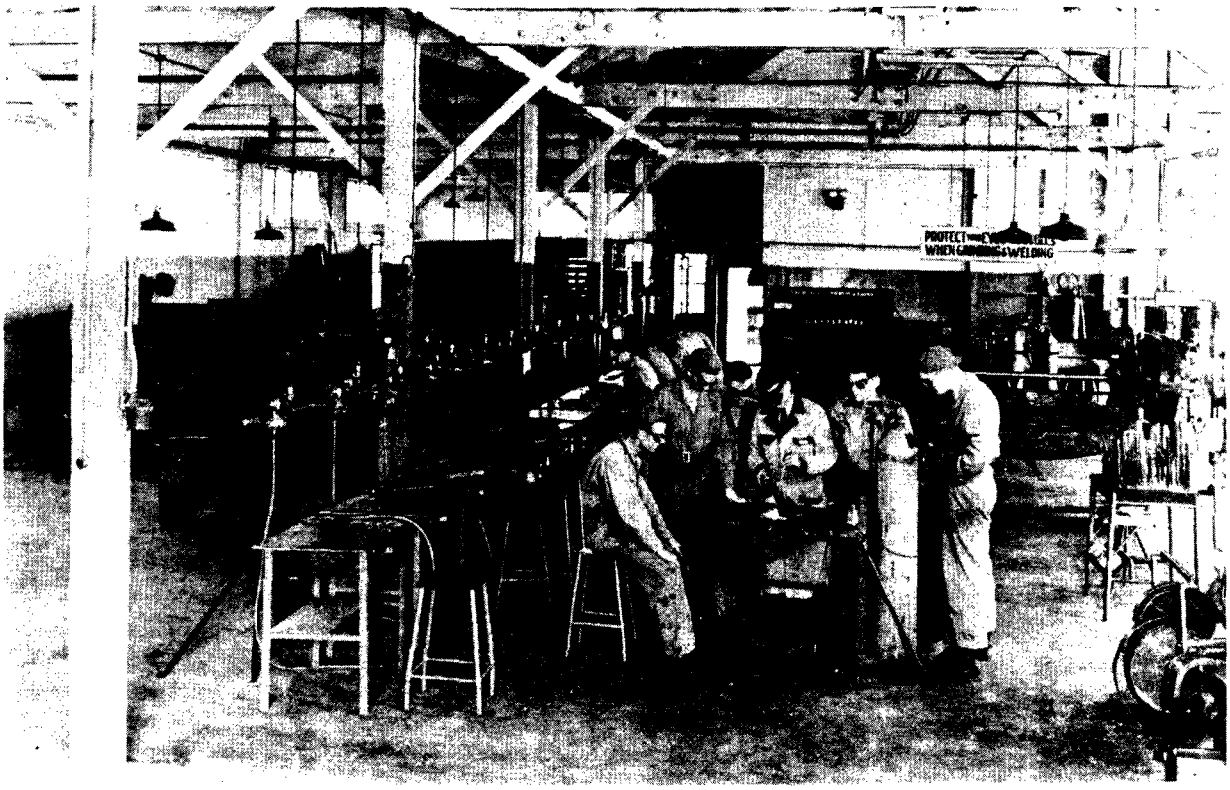
Heat-treating of the materials used is of prime importance, and while only a week is spent on this subject, its importance is carefully impressed upon the student. Heat-treatment of those particular materials that the sheet metal worker will use is the primary objective of this phase; however, a working knowledge of

heat-treatment of other Air Corps specification metals is included.

The Welding Course is divided into Basic or "Primary Instruction" and actual aircraft welding.

In the basic course the student learns the care and operation of standard welding equipment, the use of welding fluxes, the various types of welded joints, and their adaptability to general repair work. In order to learn the quality of his work and proper methods of welding the student makes cross sections of his sample welds and then by polishing and etching he is able to determine whether or not a complete union has been made between the two metals. Further tests are made by actually breaking the test welds under tension and thereby determining the actual strength of the joint. A large amount of practice is given on every type of metal or alloy used by the Air Corps. The student is required to become thoroughly proficient in this "practice or basic" welding before he may pass on to aircraft work.

In aircraft welding the student learns to apply the welding principles and methods learned in basic welding to aircraft repair. The work performed in this phase is confined entirely to exercises representing actual aircraft work, repair on school airplanes so arranged that every practical use of welding in repair work is learned, and where the work is available and the student's proficiency at the time permits, the repair of flying airplanes. Special emphasis is placed on the limitations of welding



Class in Basic Welding

in repair, and in this connection, the student must definitely know what materials cannot be successfully welded and the reasons therefor.

Again as in the Machinists' course too much emphasis cannot be placed on the desirability of our graduates being assigned to the work for which they were trained as soon as possible after graduation. Experience, following a thorough training in the fundamentals of the work, is without any doubt the best of all teachers, and time limitations here do not permit us to give the graduates the desired amount of experience. The graduate should make every effort to follow up his training with actual experience for in so doing, and by diligent application of his school training, he has every opportunity of becoming an expert in the work he has chosen.

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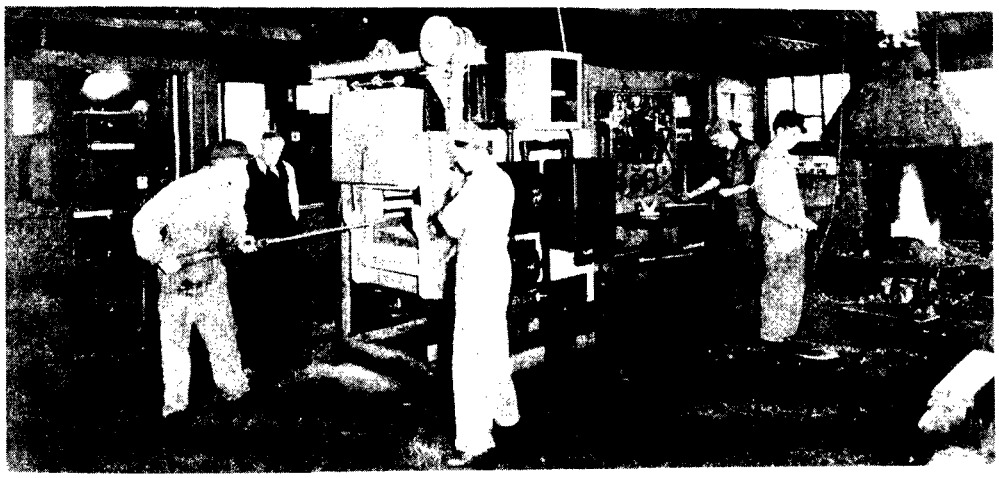
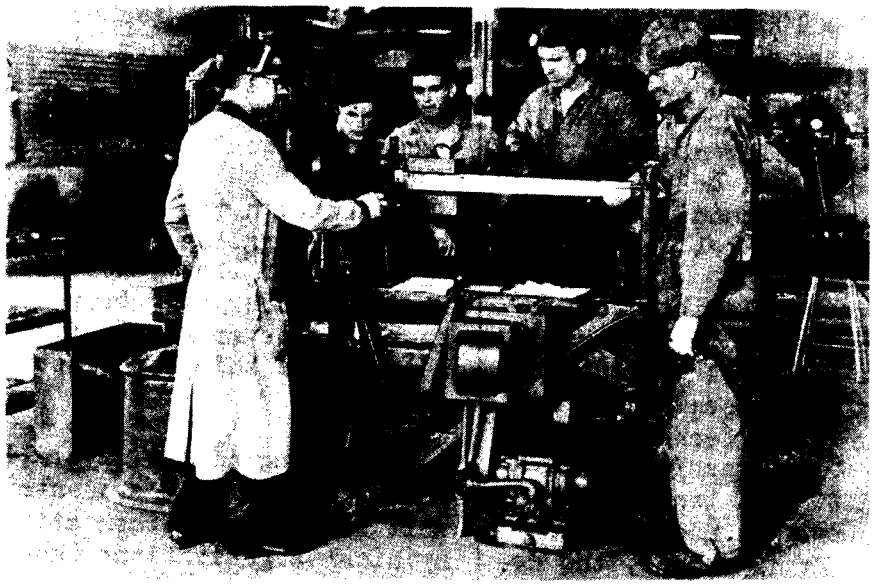


Class in Heat Treating



Testing the strength of a Welded Tube

THE PARACHUTE DIVISION

The Parachute Division is charged with the responsibility of conducting the course for Parachute Riggers and in this division the student officers pursuing the Airplane Maintenance-Engineering course spend two weeks in the latter stages of their training, where they become highly proficient in the various technical details pertaining to the parachute in general.

Any discussion of the Parachute Riggers' course, and the importance attached thereto, would be incomplete if the caution with which prospective candidates for this course are scrutinized was not made clear at the outset.

As this course is only two months in duration and the technical details involved in the study of parachutes is comparatively simple, it naturally recommends itself as one in which a soldier can get a diploma in a hurry. Since the parachute game is one in which a 100% performance is required and mistakes are absolutely not allowed, it is of paramount importance that men assigned to take this important training must, first, be of the type who can be thoroughly depended upon and, second, possess a high degree of mechanical skill.

In order to be eligible for enrollment in the Parachute Riggers' course, Army Regulations provide that applicants must have been graduated from one of the other technical courses at the Air Corps Technical School, or have had at least one year's experience as a mechanic in the Air Corps. In any event, the detail of applicants as students in this course is subject to the approval of the authorities of the school and of their respective organization commanders.

Once a student has been assigned for training to the Parachute Division, he immediately finds that the course is divided into two principle subjects; first, Parachute Construction and Repair and, second, Parachute Inspection and Maintenance. During the course of this training, all duties which devolve upon the parachute man when on duty at Air Corps stations are taught and re-taught in such a manner that there is very little chance of his ever forgetting any of the details. The standard of this training has in the past been so high, and the quality of service performed by graduates of this school so nearly perfect, that the Parachute Department at the average field is taken for granted as a department which always clicks and requires a minimum of supervision by anyone other than those assigned directly to the department.

In the last stage of his training as a parachute rigger, each student is encouraged to make at least one live parachute jump. As this jump is made with a parachute folded, packed and inspected by the student jumper, it is needless to say that it is looked upon as the final examination which entitles him to a diploma as a qualified parachute rigger.

Although the Parachute School has been in operation for many years, and thousands of live jumps have been made by students undergoing training therein, there has never been a single fatality as a result of this rather stiff "Final exam."

Jumping day is naturally a red letter day for the students and as a result of the enthusiasm stirred up, many mythical organizations have been created to commemorate this day. The Rip Cord Club of the World seems to be the coveted "lodge" and at the present writing has a membership well up in the thousands.

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"Maggie" and "Jiggs" - a couple of stooges for the Parachute Department, who have made hundreds of test jumps, all of which have been successful.

J.TOEUREN
Basic

P.V.KUHLMAN
Comm.

J.B.STEWART
Mech.

R.CARRINGTON
Mech.

M.ROTLAND
Basic

J.E. DEEB
Comm.

TROY TOLLE
Mech.

L.OGLE
Mech.

J.P.WYNNE
Photo.

H.J.ROBERTS
Mech.

C.L.CHALK
Mech.

B.ANDERSON
Mech.

F.E.FISH
Clerical

H.HEDGER
Photo.

C.J.MOORS
Mech.

C.W.RICHARD
Comm.

A.P.LAITIS
Basic

W.H.JACKSON
Mech.

W.E.BRUNING
Mech.

CIVILIAN INSTRUCTORS

F.MARTIN
Mech.

C.O.HOBSON
Mech.

A.W.FORSAARD
Photo.

H.E.JOHANSON
Mech.

D.ALLEN
Mech.

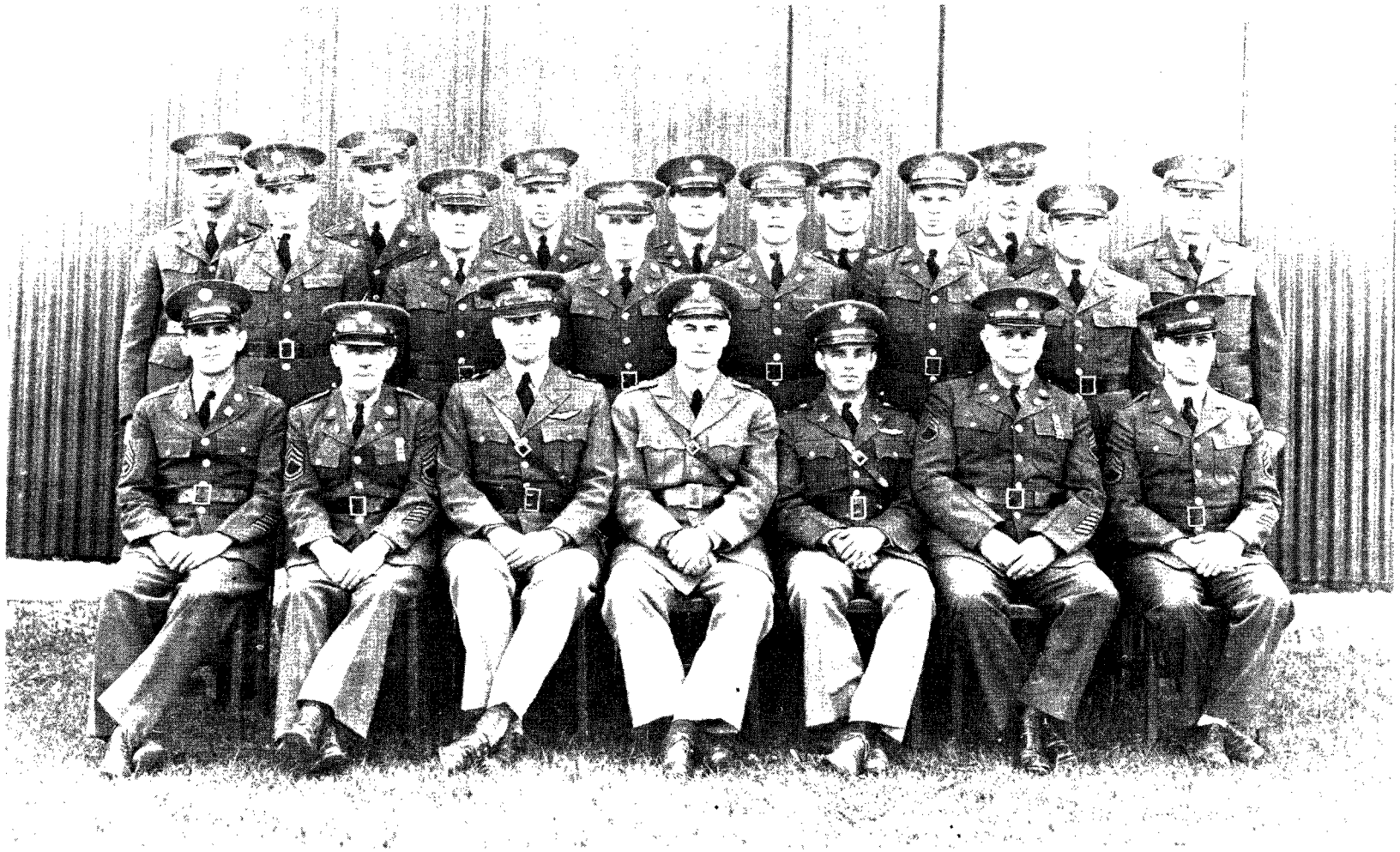
T.E.STINSON
Mech.

R.E.BRANSON
Mech.

J.L.SPRAGUE
Mech.

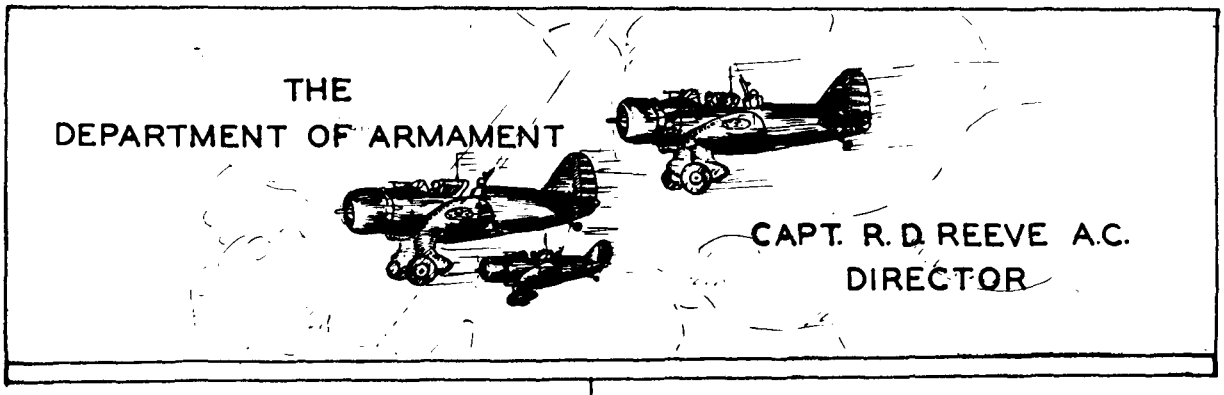
D.DELKWALTER
Basic

J.R.CARROLL
Mech.



- THE DEPARTMENT OF ARMAMENT -

Reading left to right - Back Row: Corp. R.M. Sinnen, Pvt's C.A. Proctor, G.L. Huntsman, V.R. DeCanter, G.L. Phillips, R.L. VonDuyke, Middle Row: Sgt. F.P. Mason, Pvt. D. Moyer, Corp. L.S. Ringo, Pvt. J. Watterson, Pfc. P. Blalock, Corp. R.U. Green, Sgt. W.S. Blalock. Bottom Row: St. Sgt. W.O. Brewer, T.Sgt. A. Junkert, Lt. N.H. Ives, Capt. R.D. Reeve, Lt. W.D. Ganey, S.Sgt's Kingman, Shine.



Anyone will readily admit that an airplane will not fly without an engine, and conversely, that an engine cannot fly without an airplane. But this department has a creed which includes the basic logic that a pursuit, attack or bombardment airplane has no excuse for existence without its armament, and further, that in wartime operations no combat organization, despite the excellence of its flying equipment and the skill of its pilots, can be better than its armament and its employment.

Accordingly, the Department of Armament of The Air Corps Technical School has for its assigned and self-assumed purpose the training of thoroughly competent Air Corps Armament Officers and enlisted aircraft armorers, together with necessary specialist and allied phases requisite to the highest order of maintenance of combat aircraft armament for the various organizations of the U. S. Army Air Corps.

To the above end constant effort is put forth to instruct all students in not only the armament equipment and installations used on current types of aircraft, but also the newest developments and as far as possible future developments.

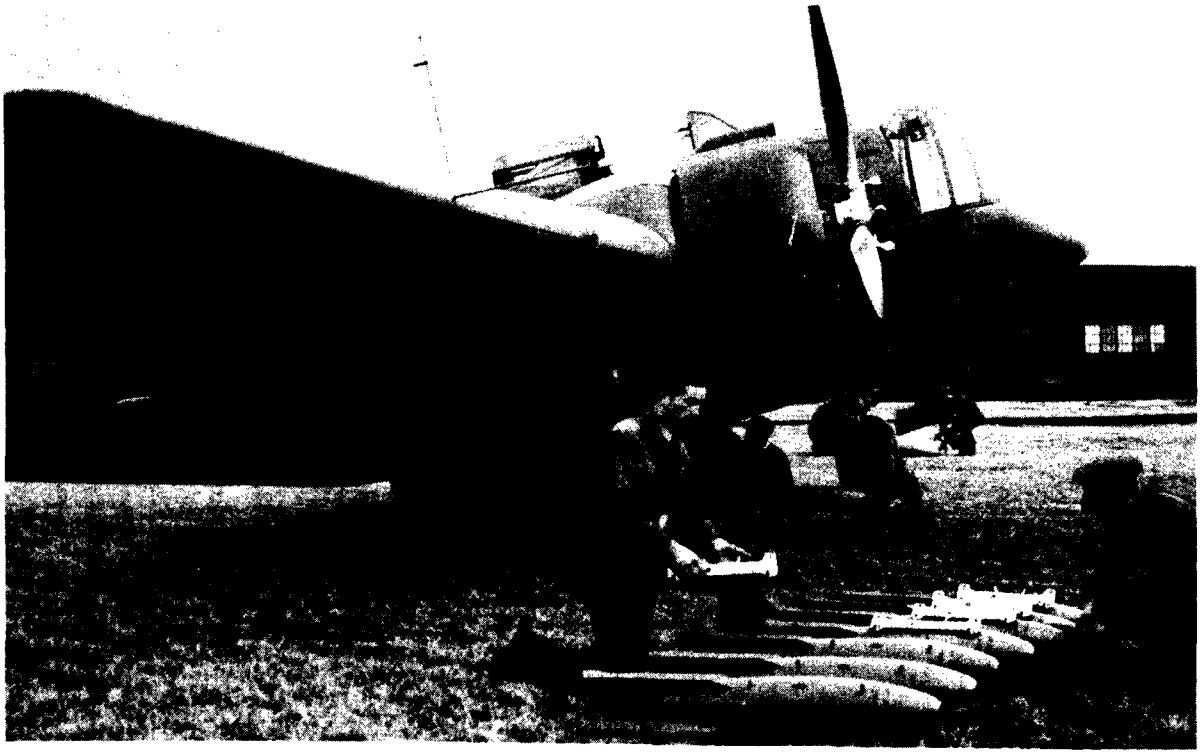
The curricula of this department include courses for Regular Army Officers, National Guard and Reserve Officers, enlisted aircraft armorers and bombsight specialists. The Regular Army Officers course consists of seven months, one of which is devoted to basic preparatory work and the other six to intensive class-room and field laboratory training in the various phases of armament. The National Guard and Reserve Officers course is of three months' duration. The

MACHINE GUN STORAGE RACK

enlisted armorers course covers a period of twenty-four weeks, of

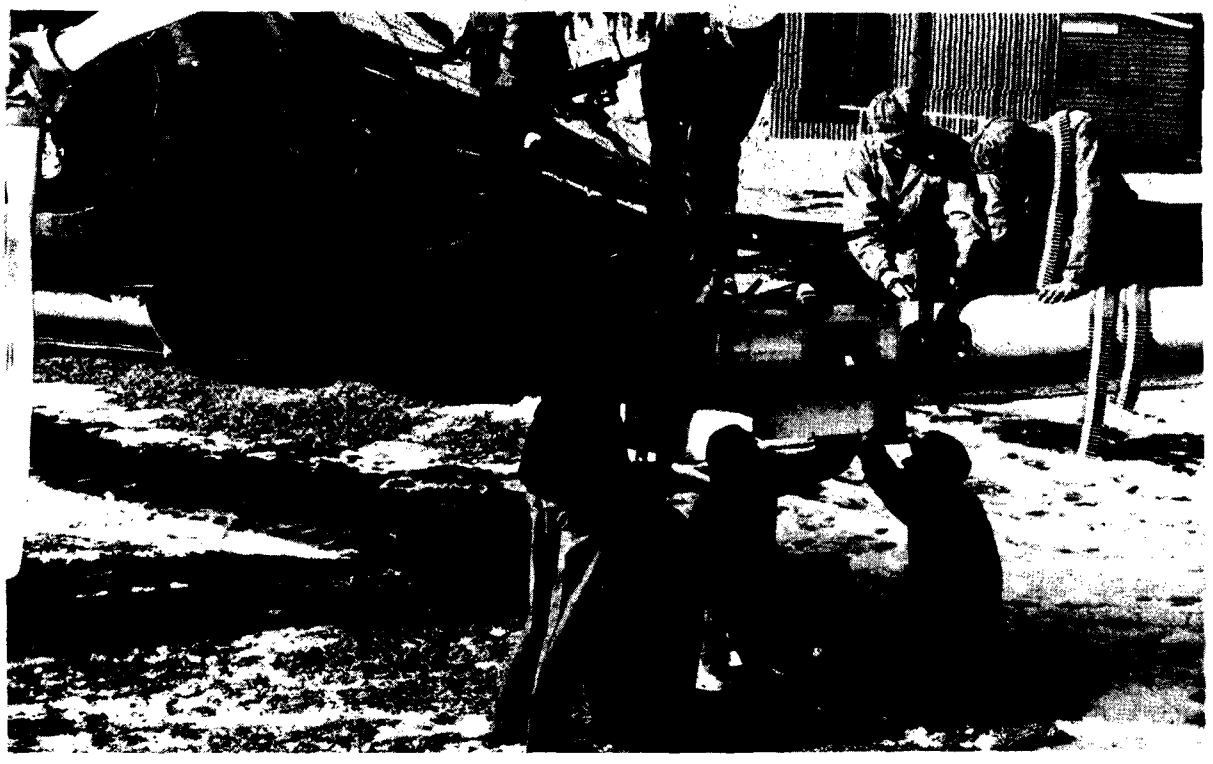
which four weeks is devoted to basic subjects. The bombsight specialists course is eight weeks in length, combining intensive study in theory of bombsights and practical instrument work. The phases of the Armament courses include the following: Small Arms, Aircraft Machine Guns, Aircraft Machine Gun Sights, Synchronizing, Gun Cameras, Machine Gun Mounts, Explosives and Ammunition, Bombsights and Camera Obscura, Wire Work, Sheet Metal Work, Bomb Racks, Flare Racks, Tow Target Equipment, Machine Gun Electric Controls, Bombing Electric Controls, Chemical Warfare Materials and Equipment, Armament Organization, and at present, short periods of intensive field training in servicing of bombing and firing airplanes together with correction of natural and artificial malfunctions.

For the accomplishment of the above the department is composed of four divisions: the Elementary and Specialization Division, the Machine Gun Division, the Bombing Division and the Chemical Warfare Division, each of which is supervised by an individual officer. Instruction is presented by a corps of four officer instructors and twenty enlisted instructors, each of whom is a specialist in one or more particular phases, but each of whom is, as a result of intensive training during the last two years, capable of instructing in any of the phases of armament. The program of instruction for the present year will include graduation of one Officers Class of approximately ten members, eleven enlisted armorers classes of fifteen members each and five bombsight specialist classes of eight members each. During the last two years the enlisted classes have



STUDENTS FUZING AND LOADING BOMBS ON TYPE B-10 AEROPLANE

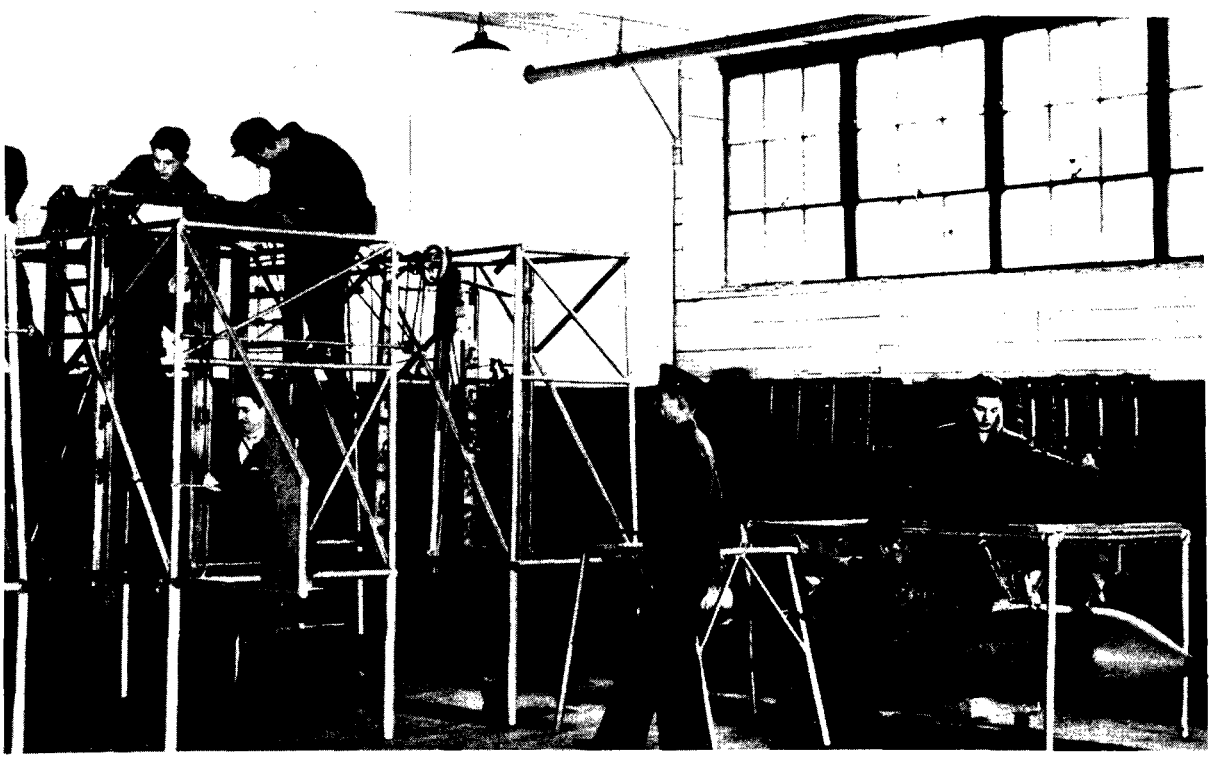
MACHINE GUN INSTALLATION ON TYPE PB-2 AEROPLANE



MACHINE GUN INSTALLATION ON TYPE A-17 AEROPLANE

been expanded from five classes of six members each.

A major factor in graduating qualified armament officers and aircraft armorers has been the establishment of scheduled field exercises initiated during the last school year. The Maxwell Field Bombing and Gunnery Base at Valpariso, Florida, was generously made available to this department for specific periods of which full advantage has been taken with great benefit not only to the students but to the instructional staff as well. The Regular Army Officers class is employed in field machine gunnery on latest types of airplanes for two weeks, followed at a later time by two weeks of bombing exercises, each officer performing not only the duty of pilot but also as armorer. Each enlisted class is scheduled for a two-weeks' period of bombing and gunnery combined. These field exercises constitute a most important phase of the course, employing the student in intensive practical work, actually handling live ammunition and high explosives, servicing the armament equipment of the most modern types of flying airplanes under service conditions, and applying class-room knowledge in actual field operations, with emphasis on trouble-shooting of all natural and contemplated malfunctions.



CLASS-ROOM INSTRUCTION ON BOMB RACKS

The result is the graduating of what may be considered stable, well-qualified, semi-experienced armament officers and armorers, far different from the previous armament graduate who, without the training in such field laboratory work, could have only his class-room instruction to qualify him, through lack of space and facilities in the vicinity of Chanute Field proper for training

with actual firing and bombing airplanes.

However, this arrangement for field training is only a poor substitute for field laboratory work that should be included in the Armament courses with range facilities adjacent to or close by the school itself. Conducting these exercises at a distance of 700 miles, field training has necessarily been for any one class conducted in a concentrated period, while for proper instruction the department should have those facilities next door, where field work could be performed daily in conjunction with classroom work, much the same as laboratory work in any college. When a range of this type is provided, as is expected at another location, the department will take a large step forward in unification of its instruction with direct results in the caliber of its graduates, together with expansion in classes.

The one outstanding law of the Department of Armament of the Air Corps Technical School is that a graduate, officer or enlisted man, must, before even being considered for graduation, demonstrate absolute reliability with reference to all phases of work with aircraft armament. The staff of the department is thoroughly inculcated with the principle that a poor engine mechanic or a poor airplane mechanic may cause failure of mechanical equipment resulting in fatalities, but that a poor armament mechanic is almost certainly to go farther in a consideration that he is not only responsible for proper operation of machinery but also the proper handling of high explosives.

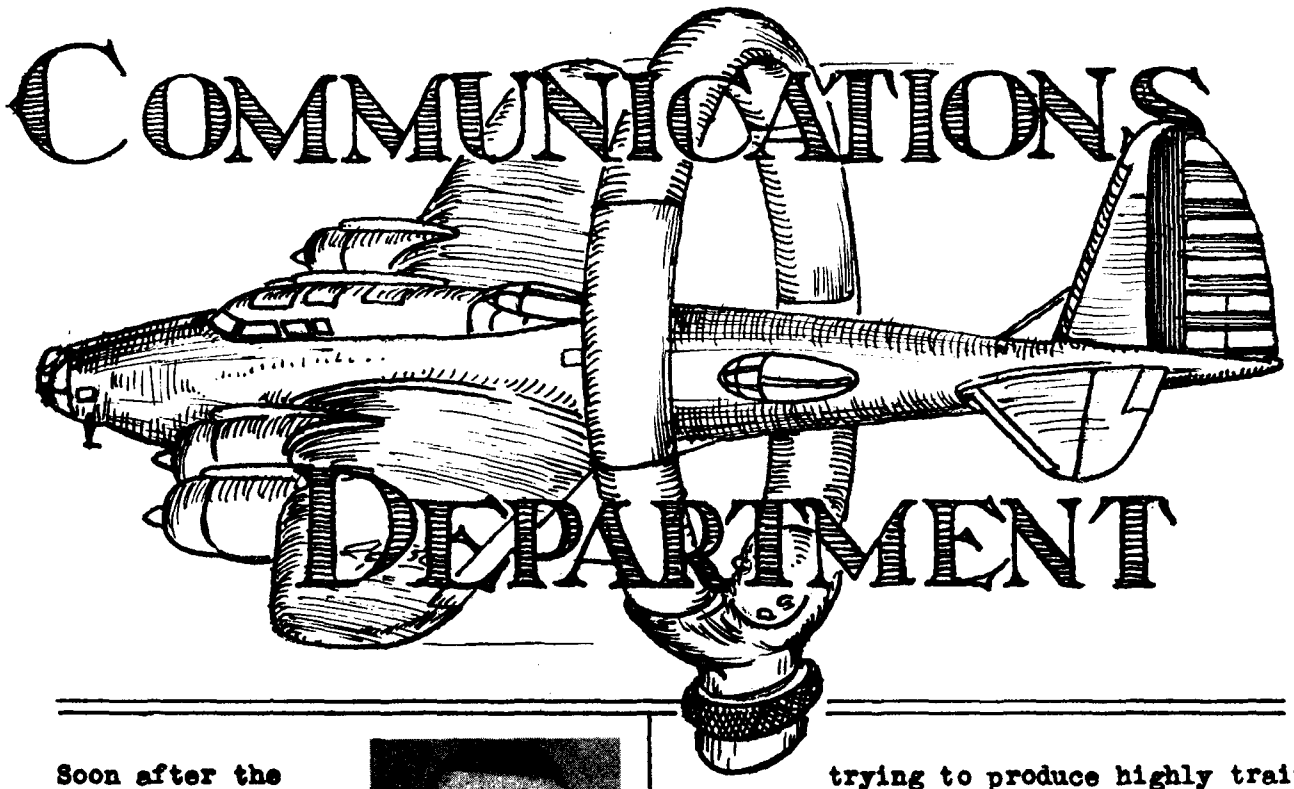
Another basic principle of this department is to keep abreast of not only present but future or contemplated developments in aircraft armament and to obtain equip-

CLASS-ROOM INSTRUCTION ON SYNCHRONIZING MECHANISMS

ment and include instruction according to this principle in all phases of the subject, in order that the officer or enlisted graduate may go to his organization or new station equipped to function with not only the equipment used at that station upon his arrival, but also to be familiar with new equipment to be expected.

FUZING AND LOADING BOMBS ON A-17 AEROPLANE

CLASSROOM INSTRUCTION IN MACHINE GUNS



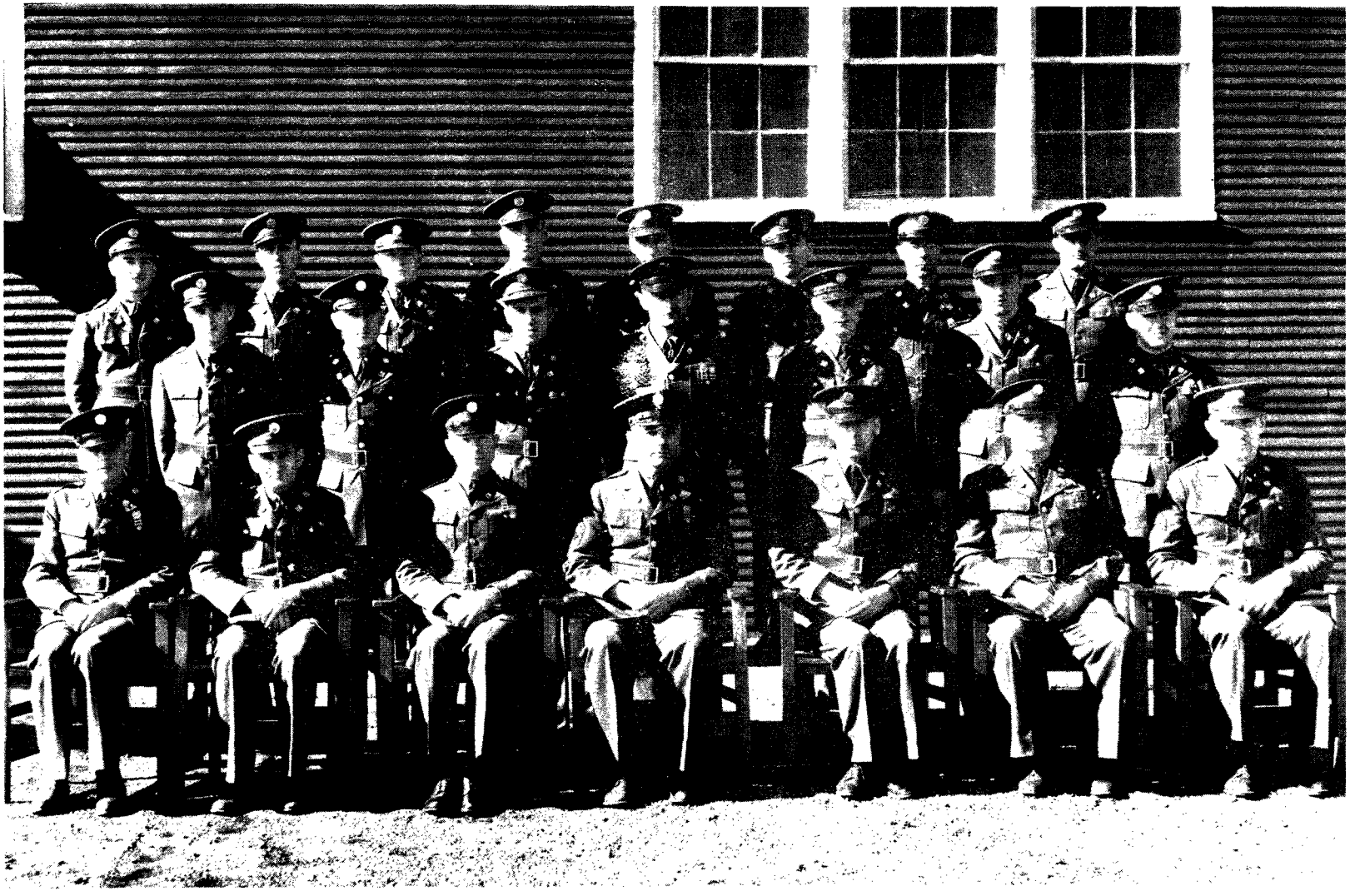
Capt. N. D. Frost
Director

Soon after the World War, plans were made for the training of Air Corps Communications personnel by the Air Corps. In 1919 the Air Corps Communications School was organized and placed into operation at Post Field, Fort Sill, Oklahoma. During the summer of 1922, the Air Corps Communications School was moved to Chanute Field, Rantoul, Illinois where it lost its identity as a separate school and became the Department of Communications, Air Corps Technical School.

The curriculums of both the officers and enlisted courses have been changed many times in an effort to keep abreast of the rapid technical progress in communications equipment employed by the Air Corps. In the school year allotted for the officers' course it is difficult to cover properly all the essential subjects. However, it should be remembered that the school is not trying to produce highly trained specialized engineers but rather to train officers for tactical assignments in Air Corps Communications. The twenty-eight weeks (for unassigned) and twenty-four weeks (for assigned) enlisted students are devoted to the training of combined radio operators - repairers in order that graduates may be qualified to act as radio operators aboard aircraft or at ground stations and to be able to perform all pre-flight, daily and maintenance inspections of radio equipment.

The curriculum may be roughly divided into three parts. Approximately one-third of the time is spent in the study of the fundamental and theoretical subjects such as electricity and magnetism, high frequency phenomena, vacuum tube characteristics, receiving circuits, transmitting circuits and antennae. One-third is devoted to Radio Operating involving transmission and reception of the international morse code, typewriting, and radio and teletype procedure. The other third is utilized for instruction on the circuit test and repair of radio equipment, the maintenance

1st Lt. C W Haas
Asst.Director



Enlisted Staff, Department of Communications.

of radio installations and the supply and administrative regulations, pertaining to communications.

The widespread realization that dependable radio communication is an essential adjunct to successful aerial operations has resulted in a very great demand for a large number of trained communications personnel.

One of the first classes the embryo "communicator" attends is Typewriting; typewriters having Western Union keyboards are used and the minimum requirement is twenty words per minute using the touch system. Those students who are already proficient in the use of the typewriter when they enter school are excused from typing and attend code classes instead.

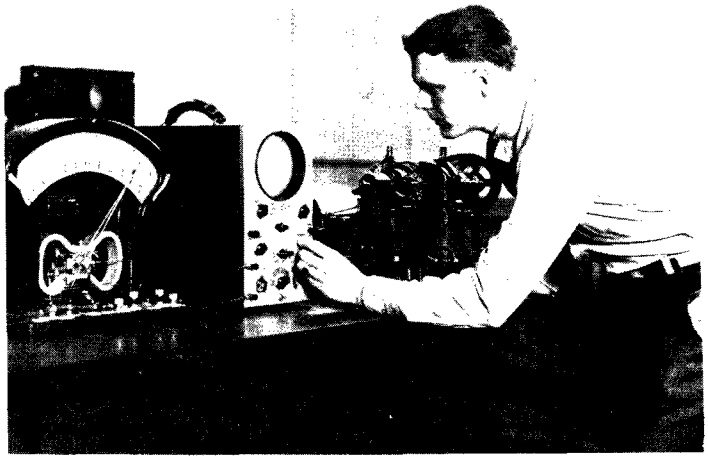
After the student has qualified in typing he attends code instruction twice daily for the duration of his course. The Code Room is equipped with automatic code machines of modern design, low and high frequency radio receivers, an Ediphone recorder for checking student transmitting ability, and an "ink recorder" for making permanent records on paper tape of each student's accuracy in forming code characters with the standard hand telegraph key and the Vibroplex semi-automatic key.

When the average student has obtained a code speed of approximately twelve words per minute he is ready for the subcourse called Radio Procedure; this subject includes all phases of operating technique, aside from the actual use of radio equipment, which the aircraft radio operator must know. Each student is required to develop an operating knowledge of the Joint Army and Navy Radio-telephone Procedure and the procedure in communicating with Department of Commerce radio facilities. After learning the principles of "message handling", the student applies them in practical exercises throughout the remainder of the course.

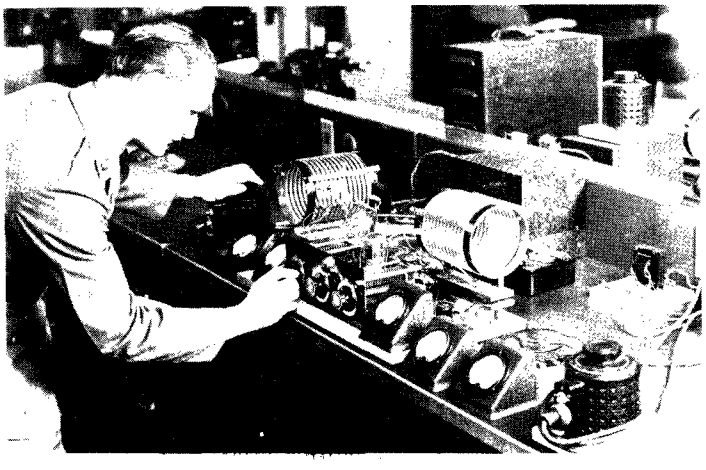
A brief but comprehensive course in electrical and radio fundamentals is given in the subcourse entitled Principles of Radio Communication.

Students taking Code instruction.

While theoretical in nature, this subject has been made highly practical through the careful selection of demonstration and individual laboratory experiments. For example, students undergoing instruction on radio transmitters perform experiments which demonstrate the principles involved in the Command and Liaison Set transmitters; particular attention is devoted to the proper tuning and adjustment of the circuits and correct interpretation of meter indications since experience has shown that these "theoretical" factors are of considerable importance in the practical use of the actual radio sets installed in aircraft. Cathode ray oscilloscopes are frequently used to make visible demonstrations of electric wave phenomena which formerly required the student to exercise considerable imagination. The equipment for individual laboratory experiments is permanently mounted on breadboards; with his experiment each student is given a supply of wires terminated in special quick-fastening connectors resembling glove snaps so that the more complicated hook-ups may be accomplished within a few minutes. Specially prepared experimental data sheets are provided with each experiment so that students may quickly record laboratory data and have sufficient time to write out the answers to questions devised to aid them in drawing logical conclusions. From the foregoing description it will readily be appreciated that the Department of Communications has far better lecture room and laboratory facilities than most colleges and universities.



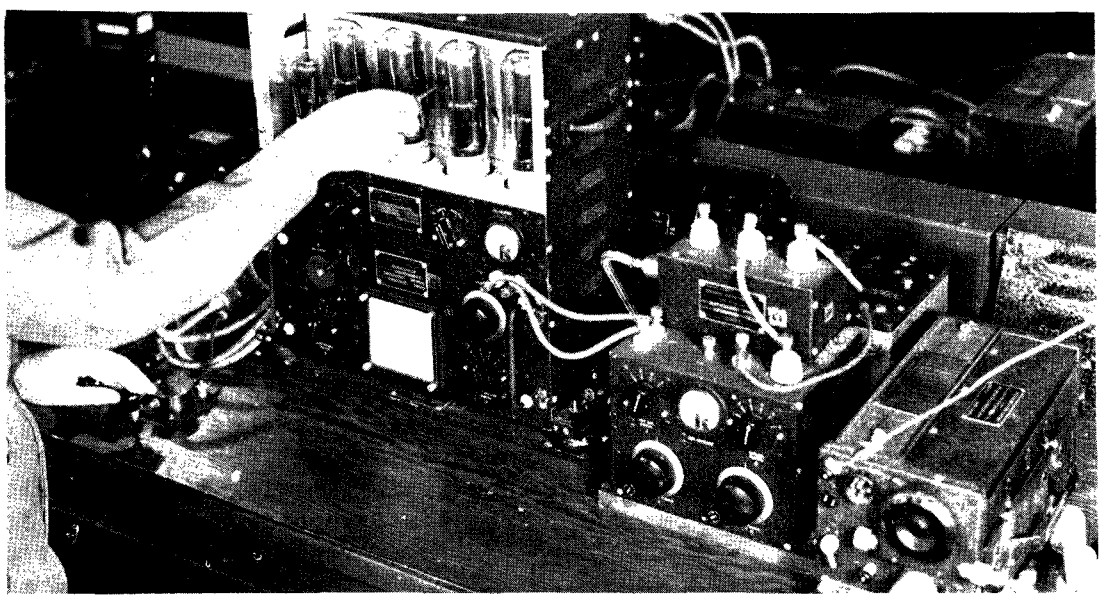
Demonstration by Sgt. Jones, Instructor in Principles of Radio Communication



Pvt. Chamberlain, Student, performing experiment in Principles of Radio Communication.

An understanding of the electrical and radio fundamentals provides the student with a proper foundation upon which to build his practical knowledge of standard Air Corps radio equipment; this special knowledge is acquired in the subcourse called Circuit Test and Repair of Radio Sets. In this subject the student receives practical instruction on the operating

adjustments, circuit testing and applied principles of modern service radio equipment. The Circuit Test and Repair laboratory contains over fifty specially designed steel laboratory tables on which are mounted modern types of Command Sets, Liaison Sets, Radio Compasses, and Test Equipment; all power for the operation of aircraft radio equipment is obtained from a central power plant adjoining the laboratory room. Conspicuous by way of contrast is a row of ten aircraft radio transmitters, in vogue over ten years ago, which are employed in teaching the principles of transmitter trouble shooting. This is done by requiring the student to place designated troubles in the transmitters after which he records and analyzes the symptoms obtained. Although obsolete equipment is used in this phase of instruction, the principles involved are essentially the same as those embodied in modern equipment. Working with modern equipment the student is required to develop an intimate practical knowledge of the numerous adjustments essential in its intelligent operation and maintenance. The general objective in this subcourse is to develop in the student the ability to read and understand the Manufacturers' Handbooks of Instruction and Technical Orders pertraining to standard radio equipment, and intelligently to apply the directions contained therein. It is doubtful if a more complete and well designed laboratory for this kind of important instruction could be found anywhere.

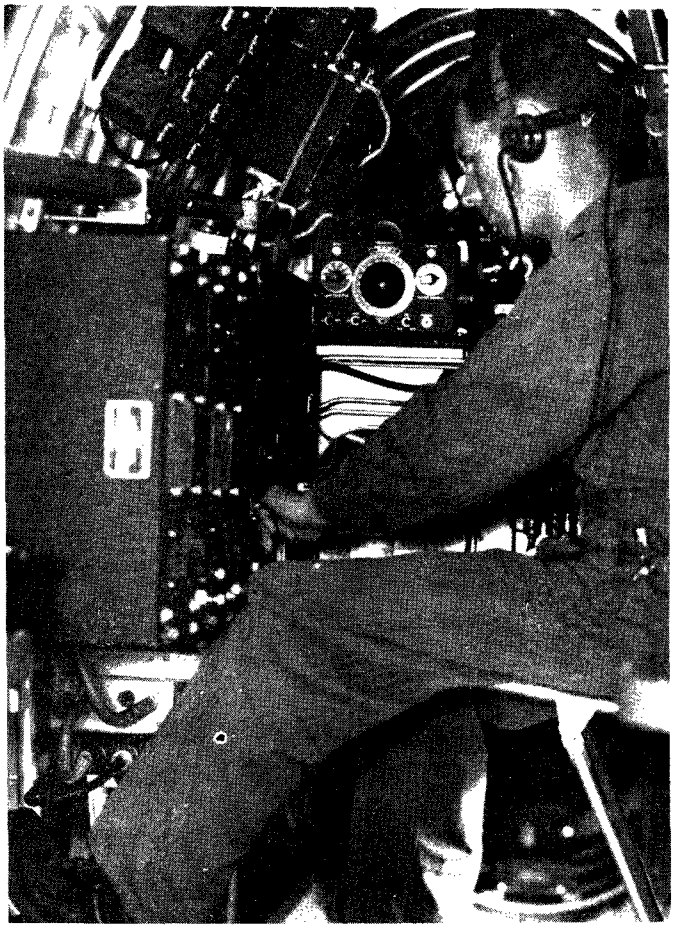


Student Bench Testing Airplane Radio Set.

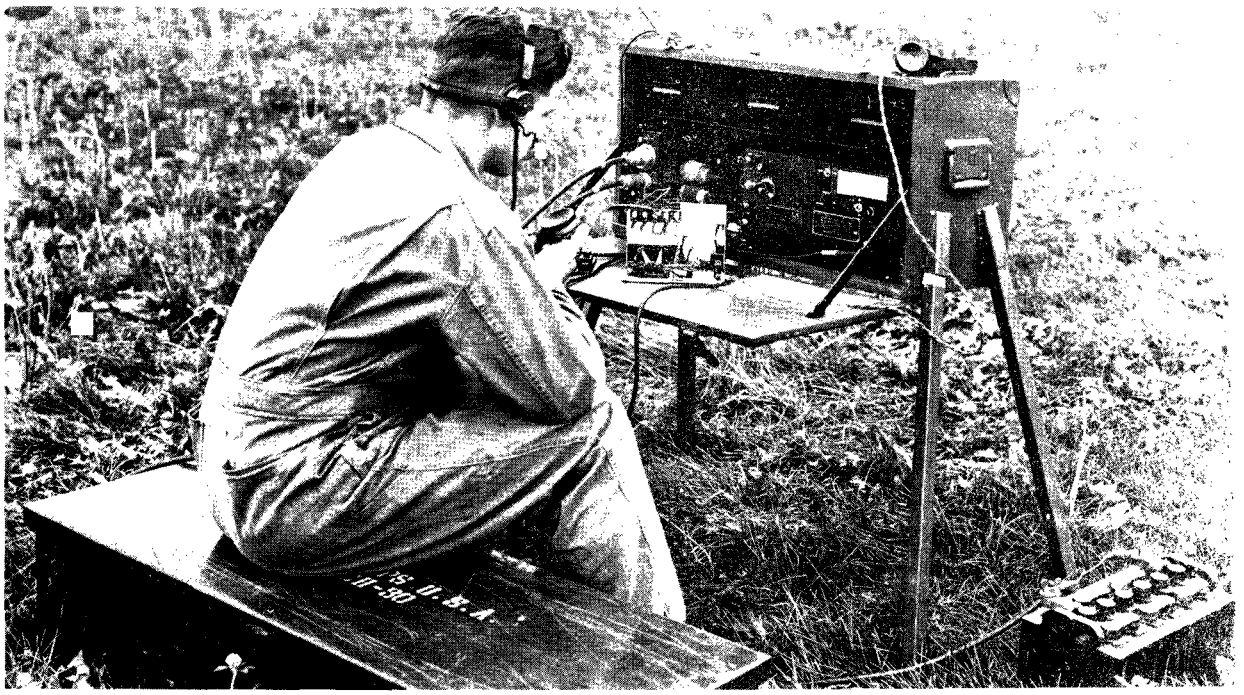
Field telephony is employed by the Air Corps to a limited extent, generally during maneuver periods; consequently the instruction given in wire communication equipment is rather limited. During the time allotted, the student receives instruction in the installation, operation and field maintenance of field telephones and switchboards. Following instruction and practice in the installation of simple field wire systems, the student receives a small

amount of training in field trouble shooting methods. The principles of wire telephony are also embodied in aircraft interphone equipment, a thorough knowledge of which is essential to aircraft radio men.

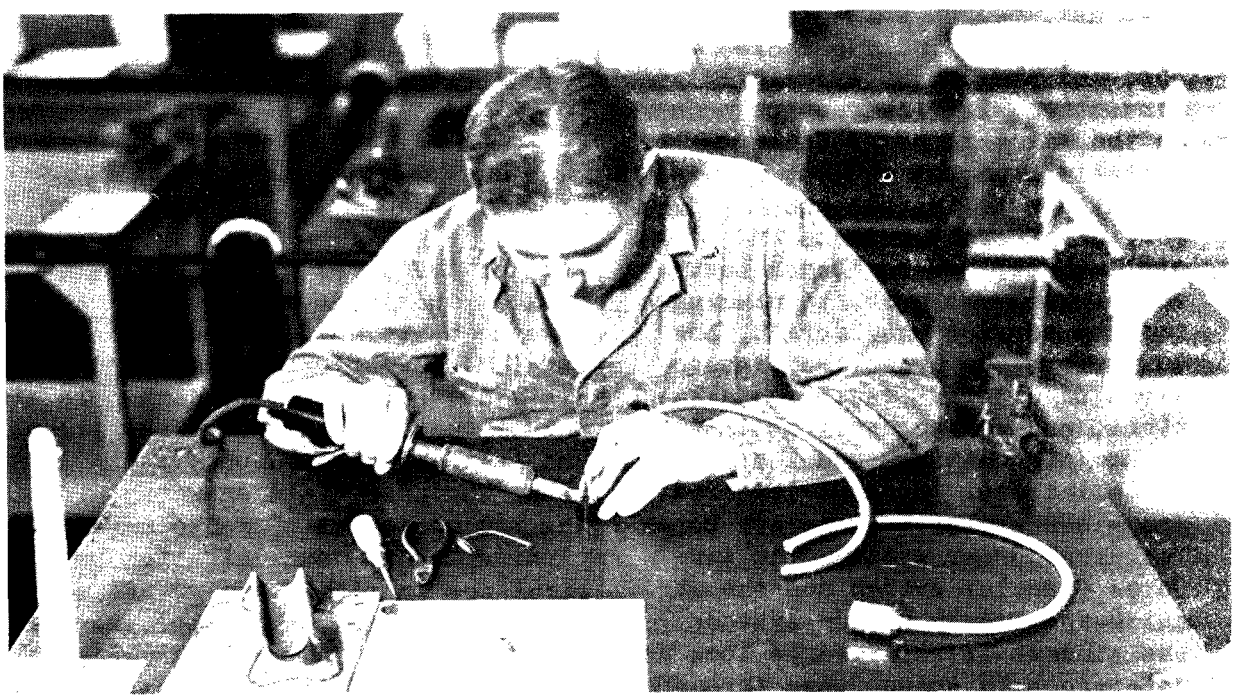
The final phase of the course is devoted to thorough instruction highly practical in nature on cord and plug assembly and on the Inspection and Maintenance of Radio Installations. The ability to handle skillfully a soldering iron is almost as important to aircraft radio men as the ability to handle radio messages. In this subcourse students receive expert instruction in the care and use of soldering irons and the few hand tools associated with the radio repairman's work. Practical jobs assigned on this phase of instruction include radio cord and plug assembly. In connection with instruction on the Maintenance of Radio Installations the student is taught how to install and service aircraft antenna installations, how to "bench test" radio equipment prior to placing it into service on aircraft, how to perform the prescribed inspections of aircraft radio installations, and how to use a systematic method of locating troubles in the installations. Special lectures are given explaining the Air Corps Technical Order system, the Air Corps Circular system and the Signal Corps Supply Letter system; the student is required to look up references in these files throughout his work in this phase of instruction. The student is also taught how to read an airplane electrical wiring diagram, since some of the wires of the airplane communication system are included in the same conduits as other portions of the airplane electrical system. When aircraft are available, students are given actual operating practice in flight. The instruction on Ground Radio Installations includes field exercises involving the operation of radio nets including two way communication between airplanes in flight and ground stations. In every respect, this subcourse is the most practical and most valuable in the entire communications course; it may be likened to the keystone of an arch, and being so, it requires the firm foundation supplied by the various other courses which are prerequisite to it.



Pvt. Norman, Student, making Inspection of Radio Equipment installed in Bomber, Type B-10.



Pvt. Robinson operating a Receiver of Squadron Ground Set.



Pvt. Michael repairing Cord & Plug Assembly for Airplane Radio Set.

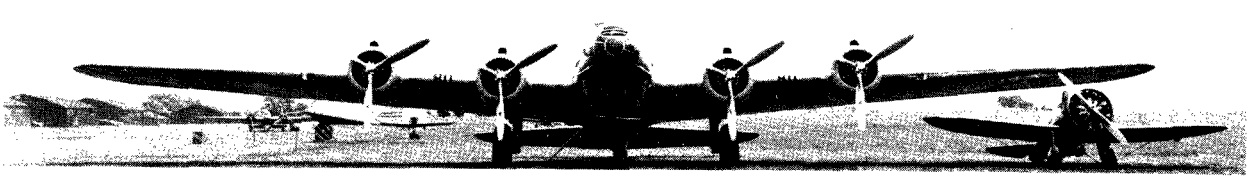
The Department of Communications has adopted as standard for all examinations the so-called "New Type" examination questions; examinations of this type often include over a hundred questions, yet their design is such that they can be completed by the average student in from twenty-five to thirty minutes. The examinations may be graded in a few minutes through the use of specially designed answer keys, the use of which insures a standard basis for the grading of all examinations since there can be no doubt as to the "degree of correctness" of any question; instructor opinion is thus eliminated in the grading of examinations and the grade awarded a given paper will be the same regardless of who grades it. By making the examination comprehensive in scope, each instructor can obtain a reasonably accurate measure of the knowledge possessed by his students, since error due to chance selection of questions are virtually eliminated. When a sufficient number of students have taken each examination, the Training Literature Section conducts elaborate statistical investigations for the purpose of eliminating poorly designed questions and determining the degree of difficulty of the remaining questions. By this process, subsequent revisions of examinations are subject to continuous improvement as the amount of statistical data accumulates. In practice, the use of the New Type, comprehensive examinations has met with universal favor by both instructors and students since considerable time is saved by all concerned.

1st Lt. G.A.Blake
Asst.Director

Many of the graduates of the communications course will report to their organizations to become aircraft radio operators aboard modern bombardment airplanes. Their responsibilities are akin to those of radio operators aboard seagoing vessels and they will become more so as military aviation develops and progresses. It does not require much imagination to conceive of situations where the radio operators will be directly responsible for the safety of the airplane on which he is flying and its crew; in such situations the level headed, resourceful operator of high technical qualifications will perform a service of much greater value than the cost of his training at the Air Corps Technical School.

With the almost continuous expansion of communications facilities within the Air Corps from both an airplane and ground standpoint an interesting and worth while career is practically assured for those who follow up this specialty. At the present time the Air Corps as a whole has a need for approximately a thousand more trained communication specialists above the normal yearly attrition.

Untrained men of the Air Corps and those planning an enlistment in the Air Corps are urged to investigate the possibility of becoming enrolled for the radio operators - repairers' course of the Air Corps Technical School, thus assuring an interesting career.



THE DEPARTMENT OF PHOTOGRAPHY

Major Donald G. Stitt, A. C.,
Director.

Captain Donald W. Norwood, A.C.,
Assistant Director.

- - - - -

The Department of Photography of the Air Corps Technical School is charged with giving photographic training to such officers and enlisted men of the Air Corps and National Guard as may be designated by the Chief of the Air Corps.

The training given in this course is so planned as to provide a balance between practical work and theory so that the graduate will not only be able to accomplish the photographic duties assigned to him, but will know the reasons behind every operation he performs. For example, in outdoor photography, he will not only use the correct filter when photographing any given scene, but he will know just what the effect of that filter will be for that particular scene on the type of film being used. In the laboratory he will not only know standard time of development for any given type of film, but will also know under what conditions that standard time of development should be modified in order to produce best results. And so on with every function performed.

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Enlisted Instructors

Top Row: Pvt.AM2cl John J. Williams; Instr. Mosaic & Mapping; Pvt. Chas. T. Forsyth, Instr. Aerial Photo Division; Pvt.AM2cl Norbert Danko, Instr., Preparatory Division; Corp.AM1cl Lehr Cochran, Instr. Mosaic & Mapping; PFC Charles G. Wilcox, Instr. Ground Photography Division; Pvt.AM2cl John Koelbl, Instr., Aerial Photo Division.

Bottom Row: Sgt.AM2cl John A. Hancock, Instr. Preparatory Division; St.Sgt. Herbert Spees, Instr. Mosaic & Mapping; Tech.Sgt. Arthur Stolte, Instr. Aerial Photo Division, Camera Repair and Maintenance; St.Sgt. Robert H. Spencer, Instr. Ground Photography Division; Pvt.AM1cl Leonard E. Wine, Instr. Aerial Photo Division and Camera Repair;

ELEMENTARY DIVISION

The Photographic School has four main divisions. The student goes through these progressively, going first into Elementary Photography where he is taught the Fundamentals of Photography, Elementary Photographic Chemistry, Photographic Optics, Negative Making and Printing.

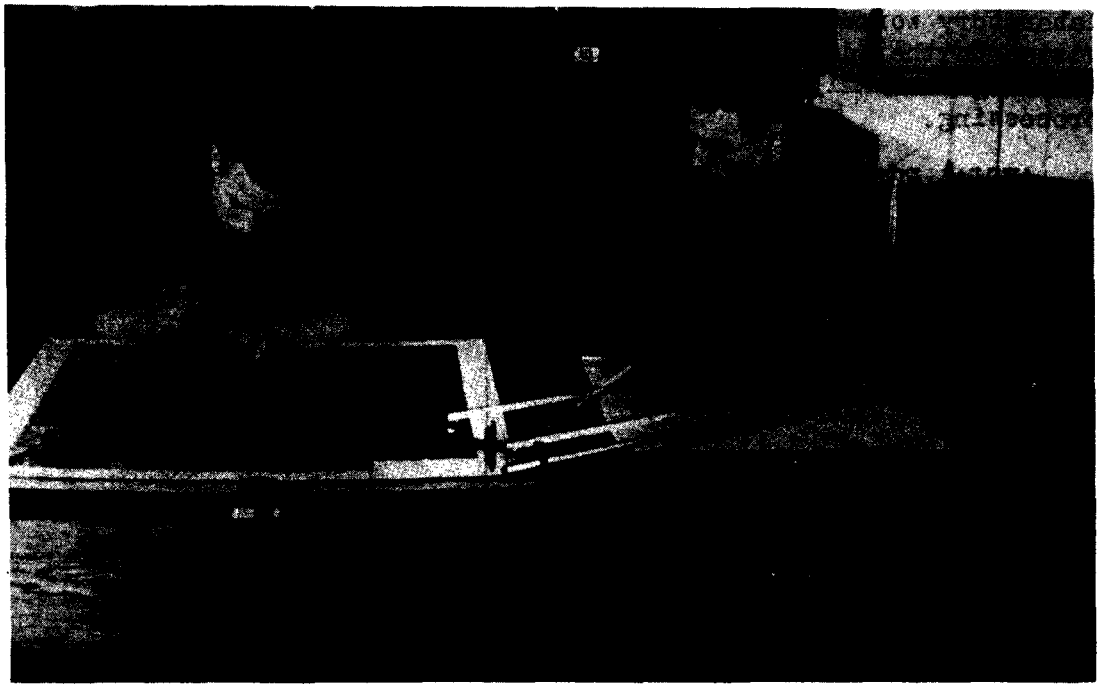
While this division and the one which follows do not deal strictly with aerial photography, great stress is placed on the necessity for careful instruction in the basic principles of photography, a thorough knowledge of which is essential in enabling the student to analyze the problems which he will encounter later on.

- - - -

GROUND PHOTOGRAPHIC DIVISION

Upon successful completion of the first phase, the student goes to Ground Photography where instruction on Ground Cameras and their use is offered. In this division the student not only operates the camera but carries through with the negative processing and printing. The result of his efforts being a finished picture of the object or scene designated. The picture assignments in this division are many and varied including exterior and interior views, flash lights and time exposures, airplanes and airplane parts, catalog illustrations and portraits. Artistic composition is stressed in this work. The assignments are planned with a view to making the student completely familiar with the operation of ground cameras under a wide variety of conditions. The

Pvt. Wooles: "This aerial camera was as easy to take apart as my first watch".

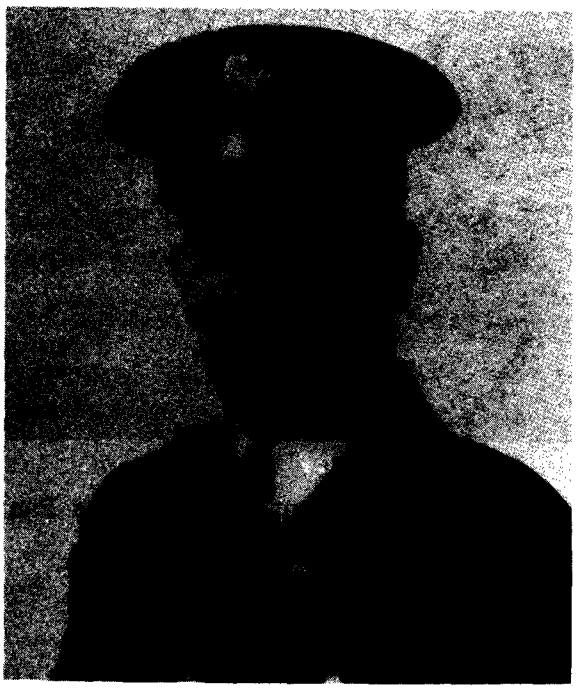


Pvt. Taylor, instructor, shows Pvt. Johnson the fine points of using a Pantograph.

Pvt. Arnold tries his hand at mixing a developer solution.

laboratory work given in this division further develops the student's knowledge and skill in photographic processing.

AERIAL PHOTOGRAPHIC DIVISION



Master Sgt. Grover B. Gilbert, A.C., Senior Instructor.

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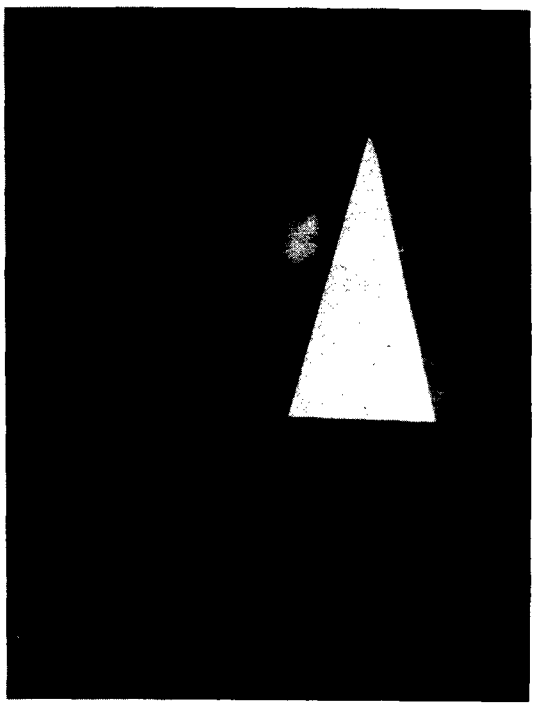
The third division is Aerial Photography. In this division the student learns the maintenance and operation of aerial cameras and associated equipment and the processing of aerial camera film. Practice in the operation of the camera in the air with different types of missions such as oblique, pin-point and mosaic is given. Aerial Cinematography, in which the theory of motion picture is studied and practical work in taking of aerial movies and subsequent development of film is covered in this division.

MOSAIC AND MAPPING DIVISION

In the fourth Division the student receives instruction in Mosaic and Map making. Here he is given the theory underlying the making of maps; various projections of the



Pvt. Koelbl tries making "big ones" out of "little ones."

earth's surface and the features of each; military grids; control points on the earth's surface; geographic coordinates, etc. A projection of a small portion of the earth's surface is constructed by each student, control points in the area plotted, and then a mosaic, consisting of prints made from an aerial negative, which the student has made is laid, gridded, titled and copied. This work is of great importance in the Air Corps and, consequently, considerable time is devoted to it in the course.

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The foregoing is just a brief sketch of the work that is given in the Photographic School and makes no attempt to cover in detail all the many and varied subjects that are brought together under the heading of Photography and must be mastered by any one who aspires to be an expert photographer.

It is the objective of the Photographic Department to turn as many of the students detailed as possible into graduate photographic experts. This can be done only by cooperation on the part of the student in studying and working hard after he gets here, and cooperation on the part of the organization commenders throughout the service in recommending for detail to the school only those men who have demonstrated that they have the requisite qualifications.

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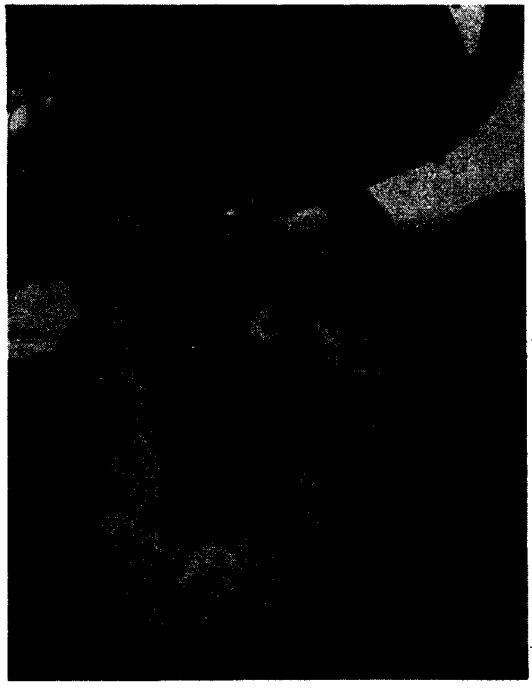


Pvt. Tomaso says "Before I got into Ground Photography, I thought Photography consisted of taking a picture of your girl and turning the film in to the corner Drug Store."

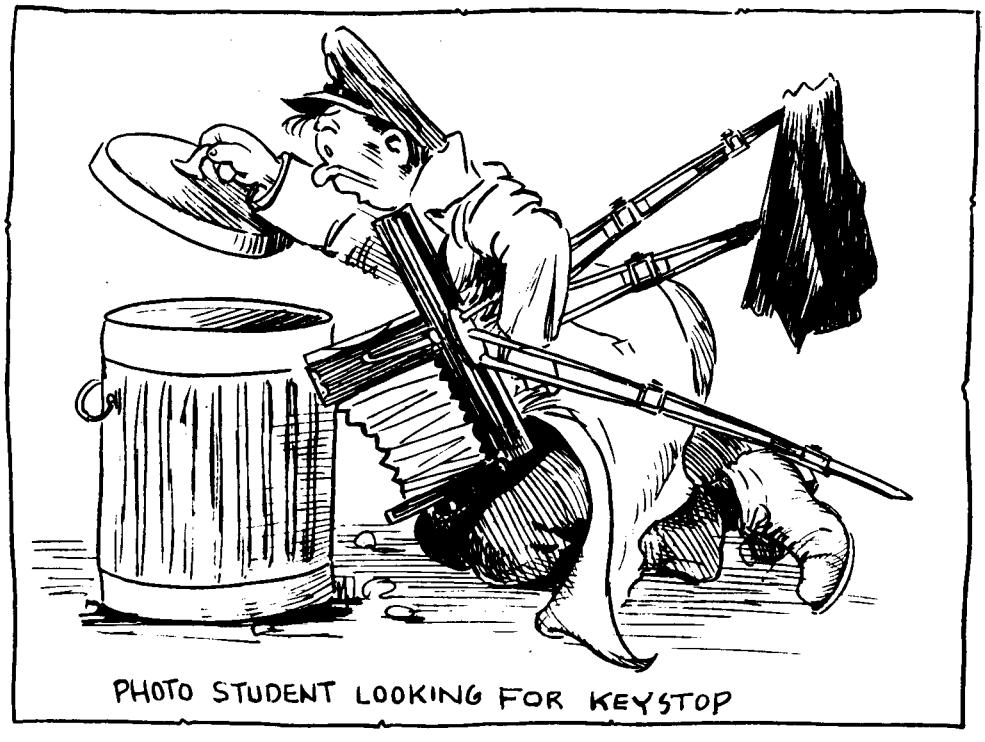


PHOTO STUDENT LOOKING FOR KEYSTOP

DEPARTMENT FOR INSTRUCTION OF AIR CORPS SUPPLY AND TECHNICAL CLERKS

1st Lieut. William P. Sloan, A.C., Director.

Competent, well-trained clerks possessing initiative, administrative ability, and a high standard of efficiency, in addition to a specialized knowledge of the particular clerical duties assigned them, are needed and especially desired in the Air Corps. Fully realizing the urgent need for such clerks--as much so as for skilled mechanics, radio operators, machinists, photographers, and other technicians--the Department for Instruction of Air Corps Supply and Technical Clerks was organized in 1933, and equipped with the most modern office equipment available. As the result of organizing this Department many men, who had some limited clerical training upon entering the service and were thereafter assigned clerical duties, have been afforded the opportunity to be detailed to a course of instruction arranged and specialized to "round out" their earlier training, thereby fitting them for more efficient performance and accomplishment of their duties, as well as increasing their value to the service. Likewise, men who have had no clerical training, but believe they possess the ability, capacity and educational qualifications necessary for a clerk are given the opportunity to enter the course. The value of these graduates is readily recognized by their organizations and departments, with advancement and promotion awarded accordingly.

The main objective of the course is to train Supply-Stenographers and Operations and Engineering Clerks. However, a graduate is also capable of easily becoming acquainted with office routine and can thus perform duties as an excellent clerk in any office other than those for which the course specializes him.

This special issue of the AIR CORPS NEWS LETTER, by the Air Corps Technical School, serves as a medium to give to the service the following general information on the curriculum, methods and scope of instruction:

The duration of the course is twenty weeks. Twenty students are trained in a class. Two classes are trained during the school year; the first class commencing on the first Monday in September and the second the first Monday in February.

All students are required to take General Instruction, upon completion of which those students who have shown the

greatest aptitude for stenographic work, up to one-third of the class, are thereafter trained as Supply-Stenographers, and the remainder as Operation-Engineering clerks.

GENERAL INSTRUCTION. (4 weeks - 140 hours) Typewriting, military and technical phraseology, shorthand, adding and calculating machines, business arithmetic, and Air Corps circulars and technical publications.

SUPPLY-STENOGRAPHER. (16 weeks - 560 hours) Military correspondence, Burroughs bookkeeping machines, business English, supply, typewriting, shorthand and organization.

ENGINEERING-OPERATIONS. (16 weeks - 560 hours) Military correspondence, calculating machines, business English, engineering, operations, typewriting, Air Corps publications and organization.

The method of instruction used in teaching Air Corps supply consists of a continuous series of practical problems that cover the initial equipping of tactical squadrons, posts and stations, and the maintenance thereof with supplies. This includes the requisitioning of supplies and equipment from Tables of Organization, Tables of Basic Allowances, and the use of Air Corps Stock Lists and Catalogs. These requisitions are followed through their source of supply, that is, the Station Air Corps Supply, the Control Depot, the Materiel Division, and, in necessary cases, to local purchases and contractors. In turn, these supplies are followed from the sources of supply to the source of issue and consumption. This procedure applies to both expendable and non-expendable equipment and supplies. These practical problems are accomplished on all the necessary and authorized forms.

Instruction in Engineering and Operations, like that in Air Corps Supply, is based on a series of practical problems, starting with Air Corps Form No. 1, which includes flying problems designated by Operations Orders, Field Orders and schedules of training. These problems are followed through by accomplishing the necessary authorized forms in making a record of aircraft and individual personnel flying time. The above problems are based on all different types of aircraft, in order to cover all types of flying problems, which in turn are followed through the various offices, in other words, from a squadron up to and including the functions of Wing and Post Engineering and Operations Offices.

The subject of military and technical phraseology is for the purpose of learning terms commonly used throughout the Air Corps and the proper use thereof. These terms include those pertinent to Aeronautics, Armament, Chemical Warfare, Electricity and Radio, Office Supplies and Equipment, and Photography. In addition to the technical terms, commonly misspelled, misused and incorrectly pronounced words are given in groups of one hundred each day. Following sufficient time for study, written recitation is given daily. This phase is for the purpose of preparing for the allied subject of Military Correspondence, in which the instruction adheres to regulations governing the preparation of military letters, indorsements, memorandums, telegrams, radiograms, orders, etc. Practice work in the different types of military communications is given, following completion of the manual thereon. In this practice work, much emphasis is given to maintaining strict compliance with the prescribed arrangement of matter in the communication and also included are exercises designed to develop excellence

in the composition of the various forms of communication, particularly military letters. Particular emphasis is placed on spelling and phrasing in the composition, and neatness of the completed copy. The knowledge acquired in business English, which has been completed when the student reaches this phase of instruction, has been found very useful and helpful. Classes in military correspondence are conducted one period a day for sixteen weeks, and have been found very interesting and instructive to one who is familiar with correspondence, as well as one who contacts it for the first time while at this school.

the final decision or accomplishment. The text is prepared for the purpose of presenting, in convenient form, the announced policies and basic principles of military organization. It gives a brief outline of the general organization of the land forces of the United States, including a theatre of war. It presents in considerable more detail the organization of the General Headquarters Air Force, the Office, Chief of the Air Corps, and the Materiel Division.

The Burroughs Bookkeeping machine, our most costly item of equipment, is an interesting phase of instruction. The student is impressed and interest maintained by the mathematical problems performed by slight

"Gadget and Dodad" end of a Burroughs Billing Machine

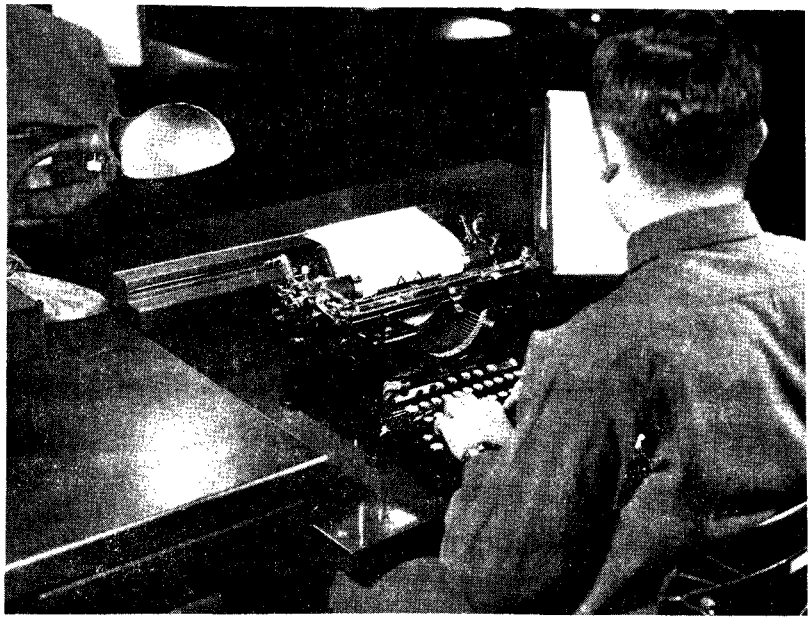
Organization of the Army is taught with the thought in mind that a student understanding the size and functions of the various units in the organization can visualize the routine routing of correspondence and accomplished forms from the offices originating them to the office making

pressure applied to keys and bars which control the various registers. Proficient typing is an asset toward developing a skilled operator. Practical work is given on all forms used in supply, which are accomplished by the bookkeeping machine. Upon completion of bookkeeping machine instruction, students are qualified in

maintaining an Air Corps Stock Record account, which includes the intricate posting of credits and debits, and the recording of receipts and issues. In this phase of the course, practical exercises are given in the operation and use of the Burroughs Adding Machine and Monroe Calculator.

for acquiring further shorthand skill.

Typewriting is taught by the touch system. This means typing without looking at the keyboard, which is blanked. The blank keyboard tends to motivate the three essentials necessary to skilled typing, that is, accuracy,



The keys are blank, so the "Hunt and Peck" system will not work here.

A system of shorthand easy to learn, read and write, and excellent in speed possibilities, namely Gregg, is taught. The elementary phase is varied by use of a shorthand reader, blackboard drills and shorthand penmanship. Dictation material in advanced shorthand represents a technical and business vocabulary. The importance of an accurate transcript is stressed and, accordingly, graded very closely for faulty transcription, spelling and punctuation. Success in this subject is dependent on the ability to instantly apply principles and rules in practical applied work. Completion of this phase renders the clerk capable of taking dictation at an average rate of speed, and opportunity is thereby afforded

coordination and rhythm, as soon as training begins. Definite practical exercises in letter forms, telegrams, radiograms, manuscripts, bills, invoices, tables and statistical matter, and legal and business documents are accomplished, which create interest while operative skill is being mastered. This work is arranged and compiled in budget form. In advanced typewriting, each student is trained on Underwood, L. C. Smith, Royal, Remington and Woodstock typewriters, thus becoming familiar with the majority of standard types in use in the service. In the same phase, periodic tests are given to determine typing speed. A graduate should average forty to fifty words per minute, his exact typing speed having been ascertained by use of the International Typing

Rules, or the same rules used to judge professional typing experts.

Much stress is placed on the knowledge required of a clerk to correctly interpret instructions contained in Air Corps Circulars and technical publications. In this subject, the student must maintain a complete set of files on publications used in accomplishing his instruction, and, as a result, he not only learns to file these publications, but gains the practical experience necessary in keeping them posted to date. When this phase is completed, the majority of Air Corps Technical clerical work can be accomplished with little or no supervision, or on the clerk's initiative, which has been developed to a marked degree during the course.

In conclusion, the Department for Instruction of Air Corps Supply and Technical Clerks makes every effort to furnish the service an efficient and well-qualified clerk.

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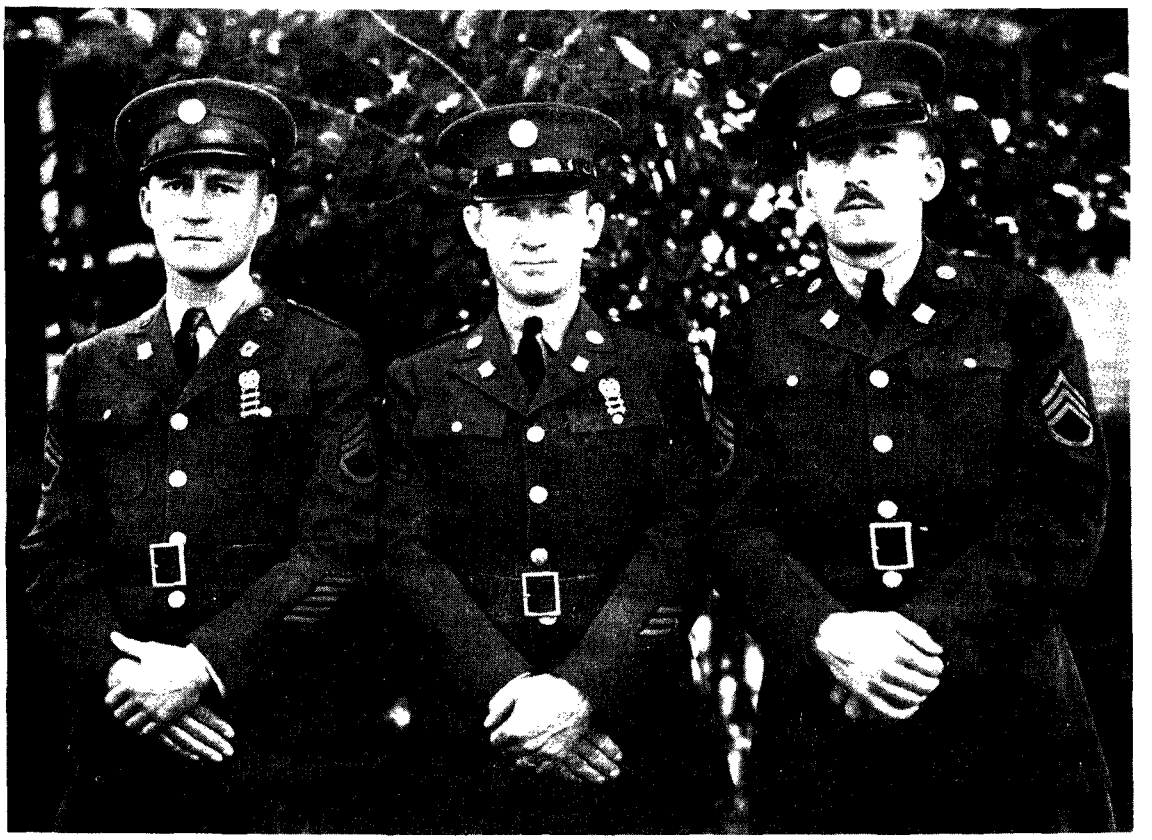
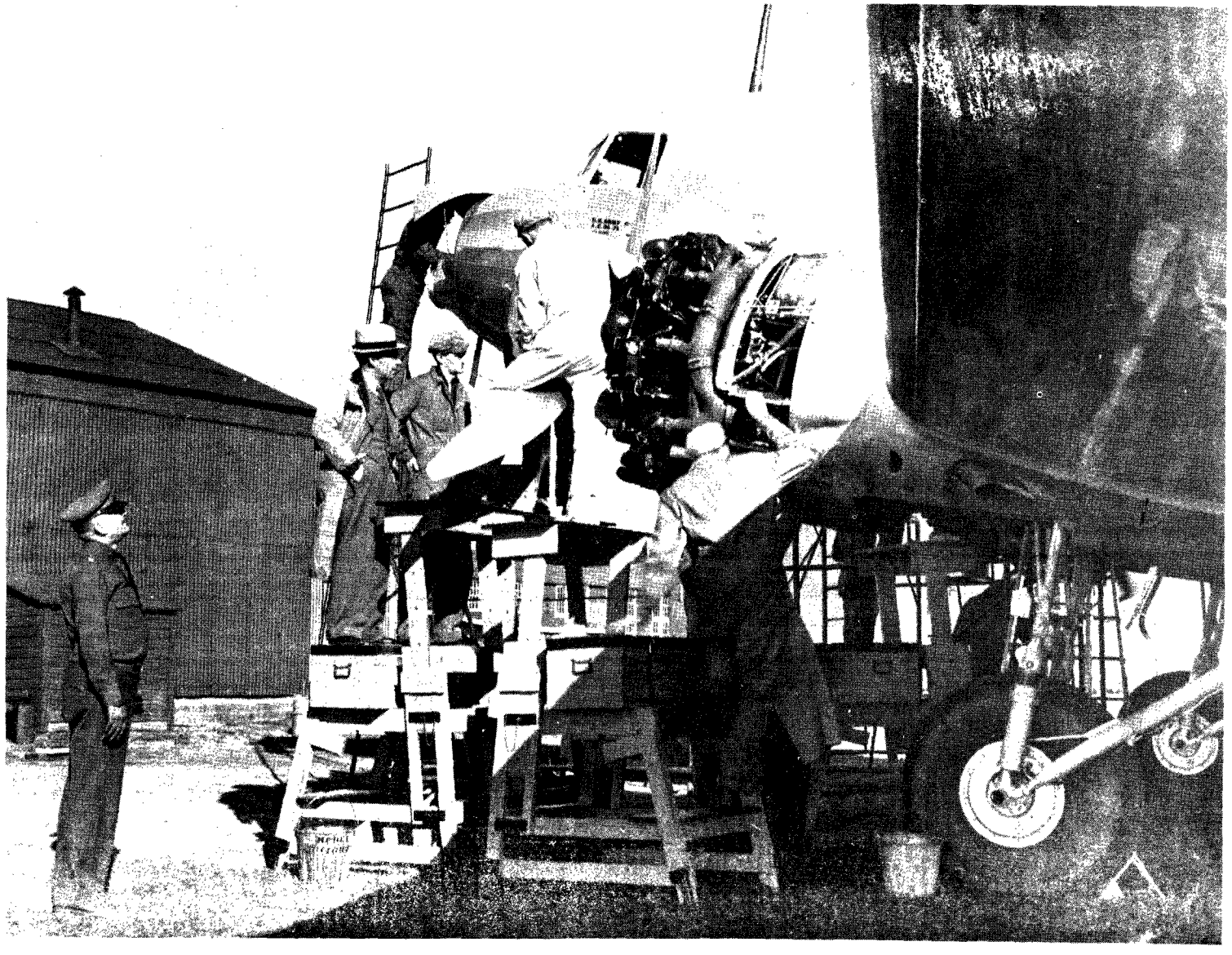
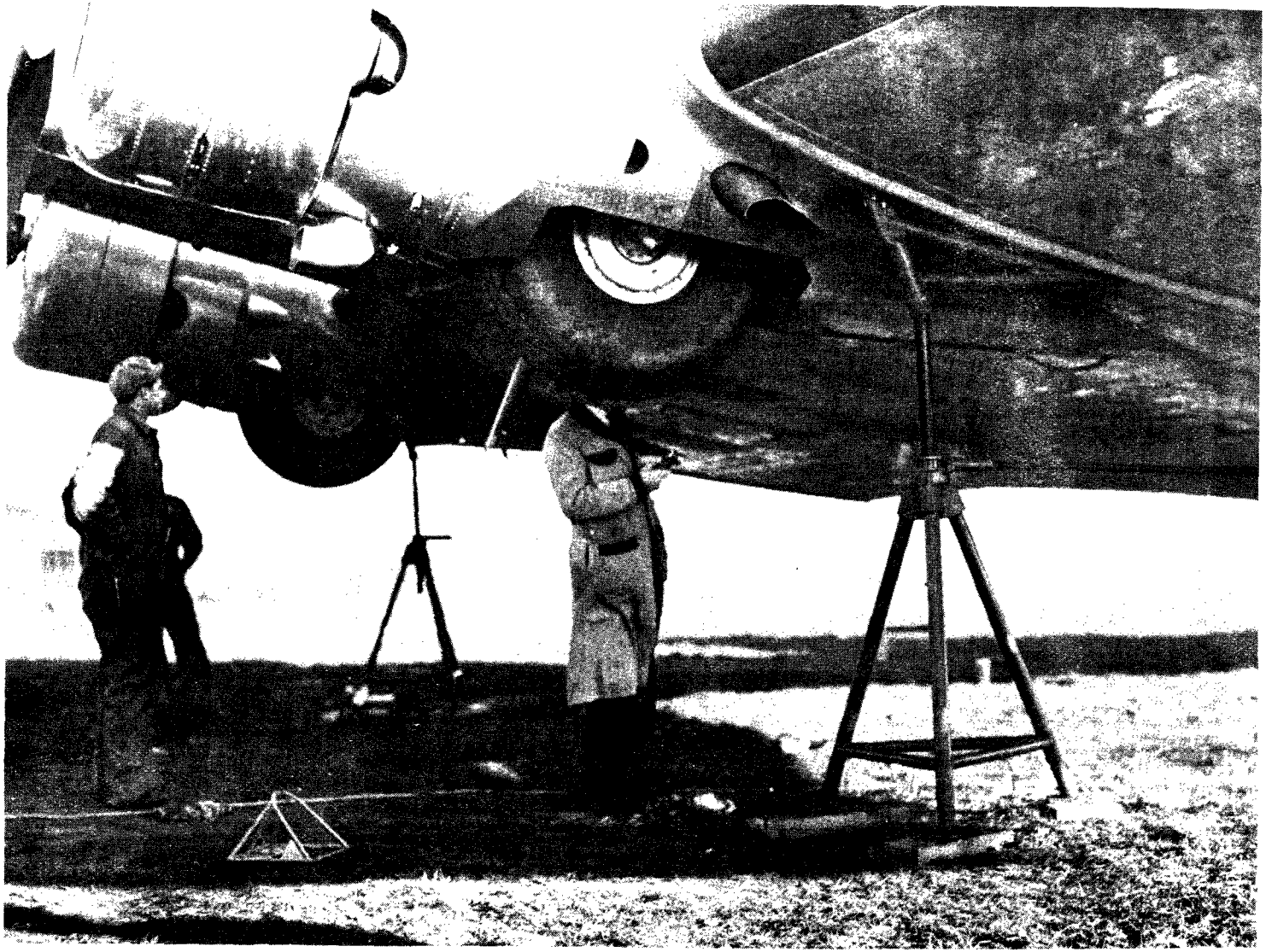


Enlisted Instructors

S.Sgt. E.L. Pond, Instr. Organization, Engineering, Operations, Supply and General Technical Administration; Sgt. R.C. Pierce, Instr. Office Machines and Supply; S.Sgt. K.S. Brown, Instr. Business English, Business Arithmetic, Military Correspondence.



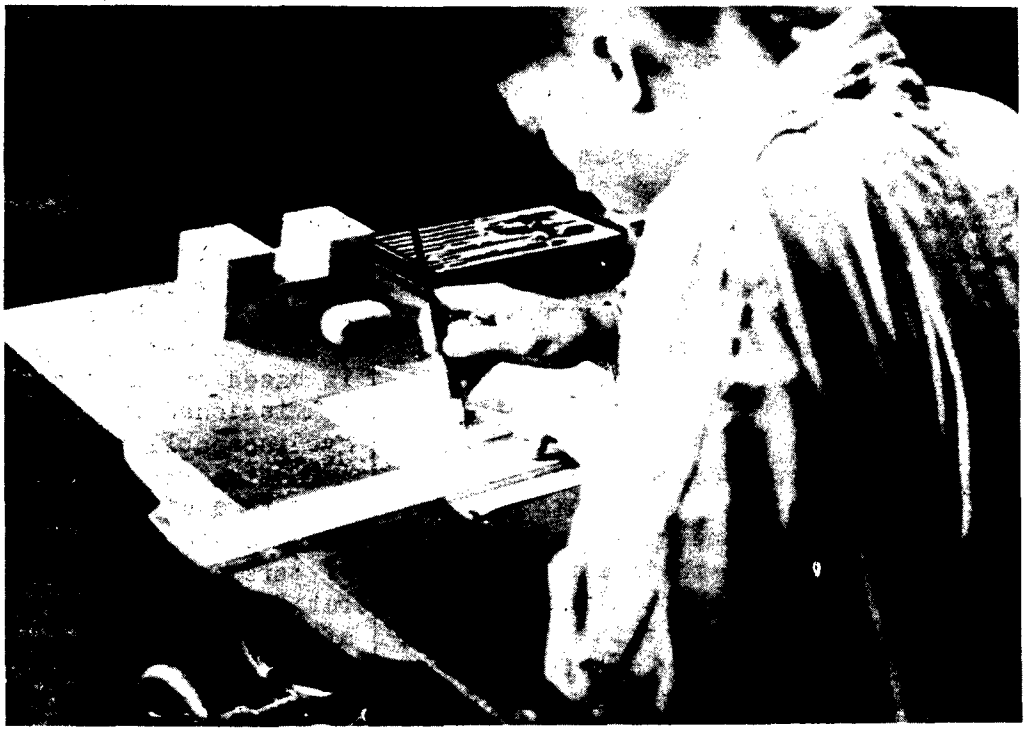
Major Harper watches Mr. Allen, civilian instructor, Propeller Division, instruct students on the proper installation of a propeller on the C-33.



"Look out, mister, that thing might bite!" A C-33 on jacks with wheels nested being given an inspection by instructors of the Department of Mechanics.

One officer and eight enlisted men of the Philippine Army are now attending courses at the Air Corps Technical School. The picture below shows one man working in Mechanical Drawing Course, Department of Basic Instruction.

"Now if I look at it this way", says Sgt. M. Alvarillo of the Philippine Army . . .



. . . "It should look like this on paper".

WHAT A MEMBER OF THE GHQ AIR FORCE STAFF THINKS ABOUT THE AIR CORPS TECHNICAL SCHOOL.

"Langley Field, Va.,
June 2, 1937.

Subject: Report of Visit to the Air Corps Technical School.

To: Commanding Officer, 2nd Bombardment Group, GHQ Air Force, Langley Field, Va.

1. On May 19, 1937, in accordance with authority contained in 2nd Indorsement, Hq. 2d Wing, GHQ Air Force, April 27, 1937, to letter, file 121.2 (3-19-37), Hq. 2d Bombardment Group, GHQ Air Force, subject: "Per Diem Orders", March 19, 1937, I proceeded to Chanute Field, for the purpose of visiting the Air Corps Technical School.

2. Upon arrival I reported to the Secretary of the School and advised him of the purpose of my visit. He expressed himself as much pleased with the idea and immediately made arrangements for the heads of departments to discuss their courses and problems with me.

3. All departments of the school, except the photographic and clerical, were visited. Lack of time precluded these two.

4. a. I was deeply impressed by the sincerity and capacity of the personnel assigned to the various departments. The instructors are men of proven ability in their own lines, many of them having been instructing from 15 to 20 years at the school. They are periodically detailed to duty to the Materiel Division and to various industrial plants related to aircraft and aircraft accessory development and manufacture, in order that they may keep abreast of the most modern equipment.

b. The equipment of the school is splendid, although some of the latest equipment (auto-syne instruments and automatic pilot in particular) were not yet available. Of especial interest was the setup for instruction in propellers and instruments. The Communications department has combined the best principles of civilian schools and the Army Signal School with the particular needs of the Air Corps to the end that their equipment is used to maximum capacity throughout the school year. The Armament section is thoroughly furnished with modern equipment even to include the latest bomb sight developments and the new M-2 .50 caliber machine gun.

c. Methods of instruction are thoroughly modern. The time devoted to theory is sufficient to enable the student to understand the "why" of the technical equipment studied. With this background the student progresses intelligently to the practical problems of the service and is thoroughly instructed by the applicatory method with splendid results.

d. The caliber of the enlisted student has materially improved since the introduction of the entrance examination. There appears to be a demand by some officers that the standard entrance requirement be lowered. Apparently this demand is based on the fact that many non-commissioned officers and Air Mechanics are incapable of passing the standard examination and are therefore denied the privilege of attending the school. I am in complete agreement that this class of personnel should attend the school, but I am convinced, more than ever before, after this visit, that unless a soldier can meet the entrance requirement that his chances of satisfactorily completing the course are slight indeed. Obviously the answer is, then, that all classes of

personnel prepare themselves for the examination, rather than lower the standards. There is at present in this Group one Corporal, Air Mechanic, who failed to complete the course at the school. The question arises, therefore, as to whether the requirements for the Air Mechanic rating are sufficiently high? Certainly, at first consideration, these requirements do not meet the standards of the Technical School. Further inquiry into this question by higher authority might be of value to the service.

e. Closely related to the above is the problem of selection of students. Rare indeed is the man with two or more enlistments who applies for a course at the school. This class of personnel is much more desirable than the recruit who so avidly applies. Inquiry into the reasons for the failure of older men to apply for the school is certainly in order and were discussed with the officers at the school. Careful consideration of this problem for the past four years and the discussion referred to above throws some light on the matter, and the probable causes follows:

(1) Lack of knowledge by squadron commanders of the aims and accomplishments of the school.

(2) Tendency of squadron commanders (still existing in some units) to send to school men who do not readily adapt themselves to duty in the squadron.

(3) Failure of squadron commanders to impress on their men the necessity for high caliber technical training, if they are to successfully make the service their career.

(4) Hostility of squadron commanders toward "sparing" men of some ability who can perform duty in the organization.

(5) Feeling among enlisted men that their opportunities for promotion will suffer duing the period of their detached service. (A feeling that is probably justified).

(6) The knowledge among the men that they can qualify for the rating of Air Mechanic without taking the course.

(7) Loss of flying pay while attending the school.

(8) Heavy expenses involved in the case of married enlisted men.

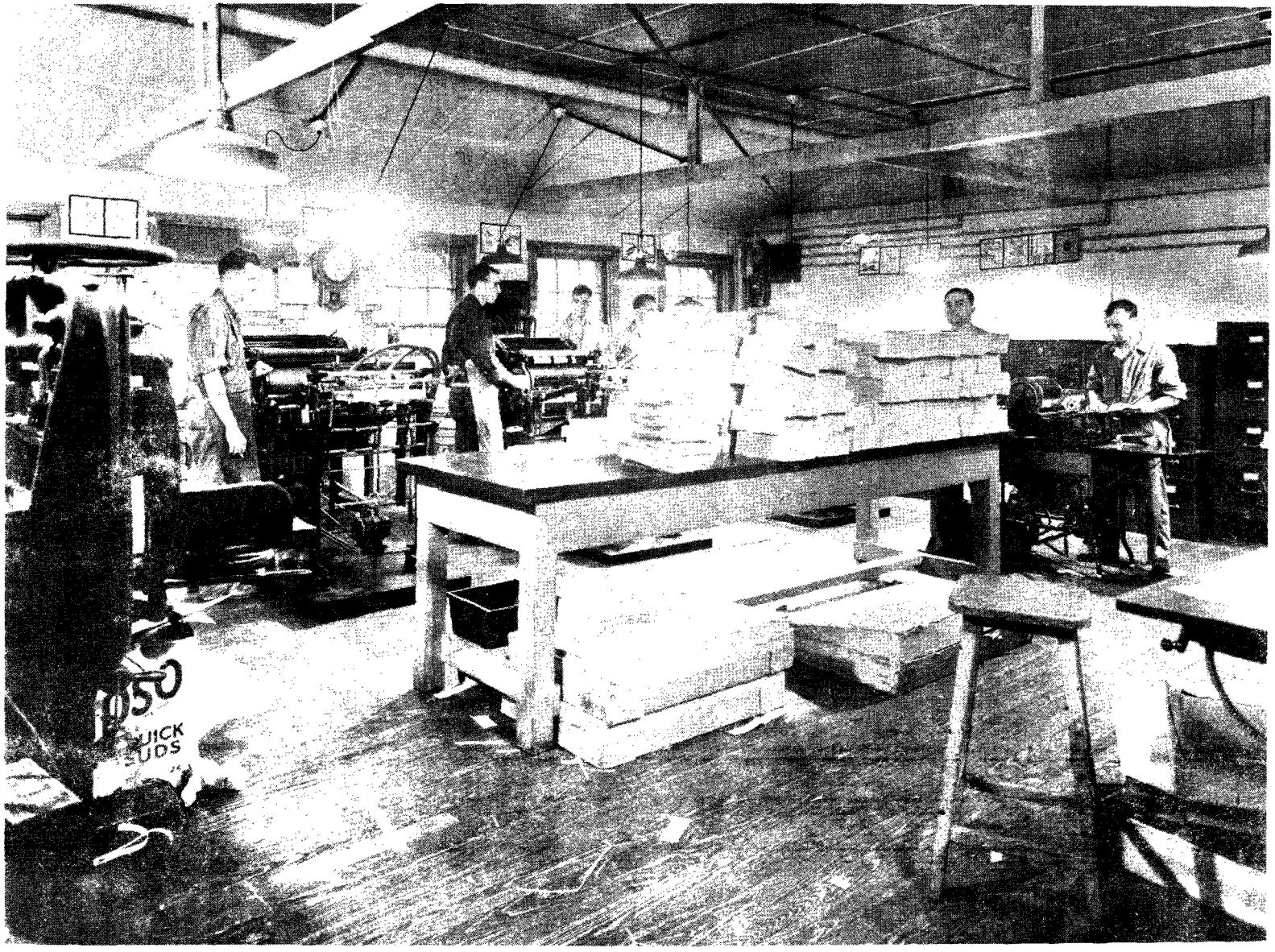
(9) Deplorable housing conditions at the school. (Double deck beds are in use in war-time buildings.)

(10) The above discussed inability to pass the entrance examination or fear of loss of grade or rating if they fail to pass.

(11) Among older men in the grade of Staff and Technical Sergeant, the practical certainty of promotion to the next higher grade without the technical training that would make them really capable of meeting the responsibilities of those grades.

There may be other reasons than those listed above, but so far they do not present themselves. It should be pointed out that only (9) above requires Congressional action for correction. The remainder may be corrected with little difficulty by proper indoctrination of responsible personnel. I would recommend, first, that all station and group personnel officers and all squadron commanders be ordered to the technical school to familiarize themselves therewith; second, that all enlisted men be assured of their normal pay and promotion while at the school; third, that detailed information of the school be available to all enlisted men. (The excellent catalogue of the school meets this requirement and is available for .25¢ from the School Secretary.)

(Signed) John H. McCormick,
Captain, Air Corps,
S-1"



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Producing the 4,000 copies of this Air Corps News Letter.

personnel prepare themselves for the examination, rather than lower the standards. There is at present in this Group one Corporal, Air Mechanic, who failed to complete the course at the school. The question arises, therefore, as to whether the requirements for the Air Mechanic rating are sufficiently high? Certainly, at first consideration, these requirements do not meet the standards of the Technical School. Further inquiry into this question by higher authority might be of value to the service.

e. Closely related to the above is the problem of selection of students. Rare indeed is the man with two or more enlistments who applies for a course at the school. This class of personnel is much more desirable than the recruit who so avidly applies. Inquiry into the reasons for the failure of older men to apply for the school is certainly in order and were discussed with the officers at the school. Careful consideration of this problem for the past four years and the discussion referred to above throws some light on the matter, and the probable causes follows:

(1) Lack of knowledge by squadron commanders of the aims and accomplishments of the school.

(2) Tendency of squadron commanders (still existing in some units) to send to school men who do not readily adapt themselves to duty in the squadron.

(3) Failure of squadron commanders to impress on their men the necessity for high caliber technical training, if they are to successfully make the service their career.

(4) Hostility of squadron commanders toward "sparing" men of some ability who can perform duty in the organization.

(5) Feeling among enlisted men that their opportunities for promotion will suffer duing the period of their detached service. (A feeling that is probably justified).

(6) The knowledge among the men that they can qualify for the rating of Air Mechanic without taking the course.

(7) Loss of flying pay while attending the school.

(8) Heavy expenses involved in the case of married enlisted men.

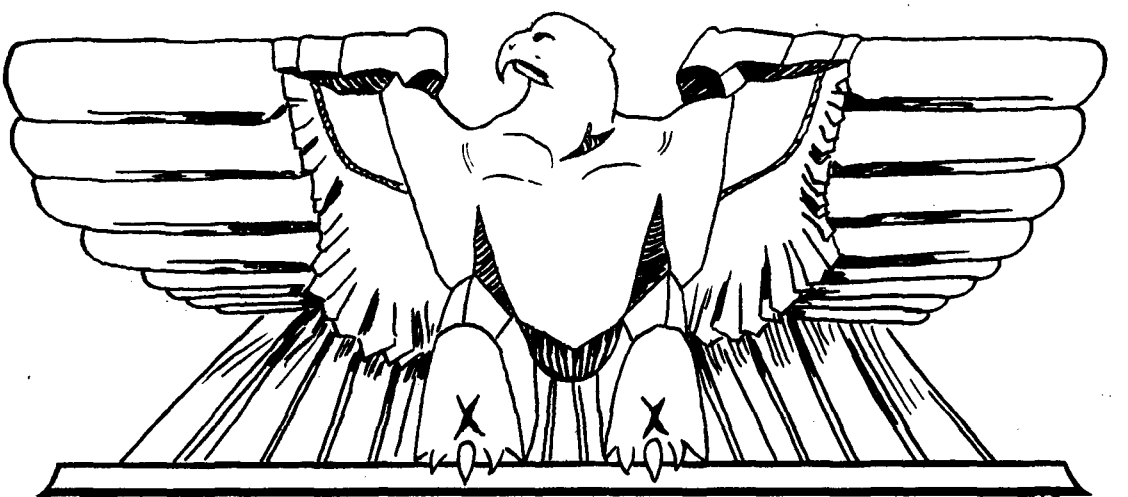
(9) Deplorable housing conditions at the school. (Double deck beds are in use in war-time buildings.)

(10) The above discussed inability to pass the entrance examination or fear of loss of grade or rating if they fail to pass.

(11) Among older men in the grade of Staff and Technical Sergeant, the practical certainty of promotion to the next higher grade without the technical training that would make them really capable of meeting the responsibilities of those grades.

There may be other reasons than those listed above, but so far they do not present themselves. It should be pointed out that only (9) above requires Congressional action for correction. The remainder may be corrected with little difficulty by proper indoctrination of responsible personnel. I would recommend, first, that all station and group personnel officers and all squadron commanders be ordered to the technical school to familiarize themselves therewith; second, that all enlisted men be assured of their normal pay and promotion while at the school; third, that detailed information of the school be available to all enlisted men. (The excellent catalogue of the school meets this requirement and is available for .25¢ from the School Secretary.)

(Signed) John H. McCormick,
Captain, Air Corps,
S-1"



Air Corps News Letter

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Vol. XX November 15, 1937 No. 22

VOL. XX AIR CORPS NEWS LETTER NO. 22.
Information Division, Air Corps — November 15, 1937 — 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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STANDARD AIRPLANE INSTRUMENT ARRANGEMENT

By Captain C. A. Ross, Air Corps

The ideal arrangement of the various instruments on the aircraft instrument board, for the purpose of best meeting the pilot's needs for all classes of flying, instrument or otherwise, has long been the subject of considerable discussion at the Materiel Division. To date it has been impossible for pilots to agree upon a definite location of even a few of the many instruments on the present airplane instrument panel. This condition is natural, since the use of the various instruments differs considerably with each particular flying problem. For example, certain instruments, necessary in making instrument landings, are rarely, if ever, used in normal instrument flying. The location, nevertheless, is important, and they must be so placed as to be readily observed by the pilot when needed. Thus, as with most engineering problems, the instrument board layout to meet all conditions becomes of necessity a compromise.

The existence of a definite need for the standardization of instrument arrangement, insofar as space limitations will permit, which will enable a pilot, in stepping into a strange airplane, to be reasonably sure that he can locate on the instrument board any particular instrument, is generally agreed upon. Likewise, it is quite obvious that, due to structural differences in the shape and size of different airplanes, all instrument boards cannot be made alike. If, however, the majority of the more important instruments are placed in the same general location on the panel, it is believed that a definite step in the right direction will have been taken.

Past specifications have prescribed certain general instrument arrangements. At present, airplane manufacturers are being given more definite instructions, particularly for those instruments used in instrument flying. There must, however, be a certain amount of elasticity to the requirements, especially in smaller airplanes where the area of instrument board space is extremely limited. But for all airplanes, large and small, the location of what is termed the "Flight Group" of instruments has been definitely prescribed. In the near future a pilot will be able to climb into any of the newer airplanes and near the top of the panel directly in front of his eyes he will see the Sperry turn indicator. Beside it on the same level will be the Sperry flight indicator. Directly below the Sperry instruments will be found the "Secondary Flight Group," namely, the airspeed, bank and turn and rate of climb indicators. To the left, either in the same row or as near as possible, will be found the sensitive altimeter. The magnetic and radio compasses will be conveniently located near the other flight instruments. The engine instruments will be grouped together in the same general pattern with the tachometer as near as possible to the flight instruments. The remaining instruments will be placed as best suits the particular design of airplane, the location being more or less optional with the designer.

This basic arrangement of instruments is the outgrowth of the suggestions of many pilots and is considered to have sufficient merit to warrant standardization at this time.

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AERIAL PHOTOGRAPHY FOR EXPOSITION

Hamilton Field, San Rafael, Calif., is playing a small but important part in the development of the Yerba Buena Shoals ("Treasure Island") for the Exposition to be held in 1939. The actual development of this man-made island is in the hands of the District Engineer, Corps of Engineers, U.S. Army, at San Francisco, whose eyes have been multiplied through the use of aerial photographs made by the 88th Reconnaissance Squadron.

Although nothing could be further from the destructive elements of war than the engineering feat being accomplished on this site, the cooperation between the ground branch, the Corps of Engineers, and the aerial branch, with the Air Corps doing the reconnaissance necessary for the ground operation, is a feat which would be duplicated many times in case of war. That this close cooperation between the two branches can be maintained in time of peace bodes well for future co-

(Continued on Page 2).

V-7544, A.C.

TEST OF B-17 "FLYING FORTRESSES"

During the first two weeks of October, the Second Bombardment Group, Langley Field, Va., was engaged in a comprehensive and accurate test of the range and efficiency of the B-17 airplane under different load and speed requirements. The results have been most gratifying.

Each airplane was loaded with fourteen 300-pound bombs, normal fuel and normal crew. Take-offs were arranged for 2:00 a.m., so that the bombs could be expended at daylight after four hours' flying at 200 miles per hour.

For the most part the course flown was over water and with no visible landmarks, except an occasional light along the shoreline, from 20 to 50 miles distant. Winds of gale velocities were blowing during the first night's mission, so the navigation necessary was a problem in itself. All B-17's remained in the air under normal tactical conditions for twelve hours or more, a feat that would have been impossible in any previous type of airplane.

The crew accommodations on these ships are such that flight personnel suffered no undue hardships or fatigue. Occasional relaxation in an Arctic sleeping bag, or a sandwich with a cup of coffee, helped to keep the crew efficient and alert, and did away with the usual sluggishness and slow reactions which are so noticeable in pilots who have made a long and exhausting flight.

As Colonel Echols, Chief of the Engineering Section, Materiel Division, said: "Pilots are just beginning to become conscious of intelligent use of their power plants to obtain the greatest efficiency and life out of them."

That is what the Second Bombardment Group is striving to obtain - data which will be reliable and accurate. With four engines instead of one or two, a slight increase in efficiency means many more miles in range.

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Aerial Photography for Exposition

(Continued from Page 1).

operation in more deadly and serious circumstances.

The 88th Reconnaissance Squadron of the GHQ Air Force photographs twice monthly the exposition site, both obliquely and vertically, and submits the pictures to the District Engineer in San Francisco for positive evidence of the progress made during the period.

The photographs just recently taken were made by Private Henry F. Stapel, who was piloted by 2nd Lieut. Ted S. Faulkner, both of whom are members of the 88th Reconnaissance Squadron, which is stationed at Hamilton Field, San Rafael, Calif.

PROMOTION OF AIR CORPS OFFICERS

The following-named Air Corps officers were promoted to temporary rank, as indicated, as of October 12, 1937:

Lieut. Colonel to Colonel

John C. McDonnell

Major to Lieut. Colonel

Lester T. Miller	Francis M. Brady
Arthur B. McDaniel	Arthur E. Easterbrook

Captain to Major

Guy Kirksey	James C. Shively
Thomas H. Chapman	James C. Cluck
John M. McDonnell	William N. Amis
Angier H. Foster	Harold H. Carr
Harry H. Mills	Rufus B. Davidson
Edwin Sullivan	Stanton T. Smith
John R. Drumm	Evers Abbey
Oliver K. Robbins	Joseph P. Bailey
John R. Glascock	Clarence F. Horton
Charles G. Brenneman	Raymond R. Brown
George V. McPike	Wm. J. McKiernan, Jr.
George G. Cressey	Edwin R. McReynolds
Clarence E. Crumrine	David G. Lingle
Russell H. Cooper	Robert M. Webster
Ray L. Owens	Sigmund F. Landers
John S. Gullet	Milo N. Clark
Henry G. Woodward	Harrison G. Crocker
John R. Morgan	Ned Schramm
Roscoe C. Wriston	Jesse A. Madarasz
Chas. E. Thomas, Jr.	Edward M. Robbins
James B. Jordan	

The following additional Air Corps officers received temporary promotions, with dates of rank as indicated:

Major Warner B. Gates to Lieut. Col. from October 19, 1937.

Captain Jack C. Hodgson to Major, from October 13, 1937; Captains Stanley M. Umstead, James W. Hammond and Charles Backes, from October 14, 1937, to Major;

Captain Ray G. Harris to Major, from October 21, 1937.

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REINFORCED LANDING MATS NOW A NECESSITY

Work on the reinforcement of the landing mat at Hamilton Field, Calif., is virtually complete, with only the marking left undone. With the advent of the huge, heavily loaded, Bombardment airplanes now in use by the GHQ Air Force, the whole mat was rapidly being literally beaten to pieces. With the reinforcement, however, and the extension which is now under way, the mat will withstand the severe punishment inflicted by even the heaviest airplane.

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The pilots' day room of the 33rd Pursuit Squadron, Langley Field, Va., recently became a classroom for the junior officers of the 8th Pursuit Group, who will be subjected to an extensive five months' course in practically everything that is military and aeronautical.

AND I LEARNED ABOUT FLYING FROM THAT
By Lieut. Oxygen

ONE of my first cross-country trips was from Maxwell Field to Knoxville, Tenn., in a PT-1, powered, or underpowered, as you choose, with a 180 Hisso. It was a beautiful Sunday afternoon, and I was flying along at what I considered a reasonable altitude, about fifty to seventy-five feet. I was following a concrete highway which was lined with Sunday traffic. My speed was slightly in excess of the automobiles but not so much that I couldn't wave and signal to anyone appealing to my fancy. I had been doing this for some little time, perhaps an hour, when in the distance loomed the new Loudon, Tennessee, bridge. It was a beautiful structure freshly painted gray and possessing a high overhead arch. The river followed the highway for a distance before it madd a left turn under the new bridge. Suddenly, the thought struck me - the crowd on the highway would be thrilled "pink" if I lowered over the river and followed it under the bridge and under them. I had flown under bridges before, having gone under the one near Maxwell numerous times. There was nothing to it - just put the wheels a foot or two off the water and let her go under ---.

All eyes along the highway were upon me and my mind was made up. Carefully I swung over and got down a few feet above the river and followed the river around a gentle turn to the bridge. As I came closer I could see that I had room to spare in clearing the piers and floor of the bridge. I was in my glory, knowing the crowd was breathlessly watching as I came beneath them. I carefully approached within a hundred or two feet of the bridge, my main attention being paid to the distance above the wator which, as mentioned, was about two feet. Suddenly, my heart sank - immediately in front of the bridge, directly ahead, hung an old ferry cable, completely blocking my path. Had it hung high or low I would have tried to dodge it, but it was half way, leaving me no chance. It was a huge cable or I would never have seen it, and I knew that to hit it would mean disaster.

The only thing I could possibly do I did - I stood the old PT on its tail and missed the overhead structure of the bridge by inches, ending in a complete stall. From there I managed to fly on away with the airplane strapped to me, and the last the people on the highway saw of me was a small speck in the sky.

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NO FORCED LANDING IN THREE YEARS

In setting forth the activities of the 4th Observation Squadron, Luke Field, T.H., the Scribe of that outfit states that one record it is proud of and which seemed to surprise inspecting officers is that there have been no forced landings in the Squadron since 1934. "We have our fingers crossed," he continues, "and hope the Engineering Section keep up their good work."

Touching on the work of the 4th Squadron early in October, the News Letter Correspondent states that the organization "has been busy trying to get in its department training. Besides all the other activities, we got in one day of practice aerial gunnery last week. On Friday, the 8th, General Westover inspected the post, and the quarterly load test followed. For the first time in several weeks we had all our planes in commission and had to use one attached pilot to get them all in the air for the test. Also Lieuts. Thatcher and Cannon graduated from the Wing Navigation School the same day and now we have two expert and fully qualified navigators. Monday, the 11th, the Squadron went to Hickam Field with the Group, so that our visiting Congressmen could give us a once over in a ground inspection, after which the Group flew in formation over Honolulu and the transport which was in the harbor then. Wednesday, the Inspector from the Office, Chief of the Air Corps, came around to look over all our records and airplanes. There was a review Thursday, the 14th, at Division Review Field, Schofield Barracks, after which we hope to get back to our regular work and training schedule. There is some speculation as to which squadron officers will take the course in navigation which will be taught in the Squadron under Lieut. Lindsay's supervision."

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We are glad to have the contribution at the top of this page under the heading of "And I Learned About Flying From That," which was received from the Air Corps Materiel Division, Wright Field. Whether you sign your article as "Lieut. Oxygen," "Captain Airfoil," "Major Overhaul," or what have you, we would appreciate your sending in to the News Letter any story regarding one or more incidents in your flying experience which, because of the lessons you learned therefrom, still linger in your memory. Please remember that a recital of your experience may prove very helpful to younger and less experienced pilots in the Air Corps and may save them a lot of grief. Just send in the facts if story writing is not your forte - the trimmings will, if necessary, be added in the editorial office.

V-7544, A.C.

A REVIEW FOR THE PRESIDENT AT FORT LEWIS

The garrison at Fort Lewis, Wash., was honored with a brief visit on October 1st by the President of the United States, who was enroute to his special train in Tacoma after completing his tour of the Olympic Peninsula. All ground troops of the post were turned out on the main highway, and a review formation was flown by the 91st Observation Squadron. The Presidential party did not arrive at Fort Lewis until after dark, but this did not deter Colonel Oldfield, the flight leader, from his purpose. The Squadron passed in review over the President and his staff, and was given commendable praise by the President for its participation. "Within the knowledge of our personnel," says the News Letter Correspondent, "this is the first time a night review has ever been given by the Air Corps in honor of any personage."

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POWERFUL "HAM" STATION AT HAMILTON FIELD

One of the most powerful amateur radio stations on the west coast is now under construction by two licensed amateur operators of the 88th Reconnaissance Squadron, Air Corps, at Hamilton Field, Calif.

The set, operating on 40 and 80 meter continuous wave, will have 500 watts of power in the civilian amateur system, as well as in the Army Amateur Net, in which it functions as a station of the Third District under the call letters W6NQR. It is the only station in the Army Amateur Radio System at Hamilton Field.

Built entirely by Corporal John B. Crouse and Private 1st Class Jack K. Prewitt in their spare time over a period of many months, the station will be on the air by November 15, 1937, capable of CW transmission to anywhere in the world. Both operators, who have held amateur tickets for several years, will welcome a call from any station anywhere.

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MORE ATTACK PLANES PURCHASED

The Honorable Louis Johnson, the Assistant Secretary of War, announced on November 9th that the War Department had awarded a supplemental contract to the Douglas Aircraft Company of Santa Monica, Calif., for 29 additional Model A-17A Attack airplanes at a cost of $654,155.90. These new planes are in addition to similar aircraft now being built for the Army by this Company. These planes will be constructed at the factory of the Northrop Corporation, Inglewood, Calif., a subsidiary of the Douglas Company.

They are low-wing monoplanes, with provision for a crew of two - pilot and gunner - and powered by a Pratt & Whitney two-row engine developing more than 750 horsepower, furnished by the Government. The plane is capable of cruising over 220 miles per hour and of maintaining that speed for eight hours. It carries four fixed .30 caliber and one flexible .30 caliber guns, and is designed to house 20 small bombs internally or 4 of larger type swung outside.

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PURCHASE OF BASIC COMBAT PLANES

Announcement was made by the Hon. Louis Johnson, the Assistant Secretary of War, on November 8th, that the War Department had ordered 95 basic combat planes and spare parts of a total value of $1,490,972.96, from the North American Aviation, Incorporated, of Inglewood, Calif. The order was placed by taking advantage of an option in a procurement contract now in effect with this company. The purchase of these additional planes results in a considerable reduction in the price per plane.

The basic combat airplane is a low-wing cabin monoplane, with tubular steel, fabric covered fuselage and metal wings and stabilizers. It is equipped with flaps to act as air brakes on landing; a retractable landing gear to decrease head resistance in flight; and likewise with an automatic controllable pitch propeller. It is powered by a Pratt & Whitney single-row radial engine of 550 h.p., furnished by the Government.

This plane has comparatively low landing speed and should be able to operate from small unimproved landing fields, thus making it an excellent plane for use as a courier plane. While not specifically designed for observation work, it can be used for that purpose if necessary. It carries a crew of two, has a two-way radio, all necessary instruments, landing lights, etc., and is provided with necessary fittings for mounting an aerial camera. Its primary use, however, is in courier service.

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WIVES SHOW SKILL IN HEAVING ROLLING PIN

During a recent celebration of Organization Day by the 9th Bombardment Squadron of Hamilton Field, Calif., one of the events of the day, and which attracted more interest than any of the others, was a rolling pin throwing contest by all wives, which was won by Mrs. Prince, wife of Sergeant William Prince, with a beautiful overhand delivery which almost demolished the target. This contest was keenly followed by the married men, who were probably eager to find out what their chances of slipping in at the wee hours in the morning and still living were. Everybody offered Sergeant Prince condolence.

GENERAL MARTIN'S ADDRESS TO GRADUATED FLYING STUDENTS

ADDRESSING the members of the graduating class of the Advanced Flying School, Kelly Field, Texas, on October 6th, last, Brigadier General Frederick L. Martin, Commanding General of the Third Wing, GHQ Air Force, stated:

"I hope that the guests present will pardon me if I talk directly to and for the benefit of these splendid young men in this graduating class. You have completed one year of intensive training with its trials and tribulations to you, in which you have seen some of your friends fall by the wayside. This, of course, reflects no discredit upon them at all, so you are entitled to honor and distinction upon having achieved this success, and I wish to extend to each and every one of you my heartiest congratulations. While you were receiving your instruction you were under the careful supervision and guidance of experienced officers associated with training activities. Adhere to those instructions throughout your military career. And you can well adhere to them throughout your life. Never forget them and never violate them.

Now I wish to speak to you as if my own son - who is almost your age, not quite - were in one of your shoes. And while I know that advice is seldom welcomed, it is those who need it most that like it least. So I hope that whatever advice I give you this morning you will not be so badly in need of it but what you will like it. I need not speak of your past. Each and every one of you know your past better than any other living soul. I cannot predict your future. I might help you by giving you an insight as to what may be in the future for you when you leave for your next station. If I can do so in a helpful way I will be delighted.

When you report to your new station you will be assigned to duty in some of the organizations thereat. You will first be given transition on that particular type of equipment, prior to which you will be expected to study and to master it. That means repeat many times the technical instructions which pertain to that particular equipment. Then your transition will be under the supervision of older officers, after which you will be assigned to a wing position under the guidance of an element leader - very much as you were flying today. In addition to that, you will have certain duties on the ground. Those duties will be as assistants to squadron adjutants, engineer officers, supply officers, communications, or wherever you may be needed. You will probably be shifted around some after you are assigned to duty, this in order that you may get a general grasp of the situation. Those assignments are extremely important to you, especially to your future, so get all you can out of them. Dig deep into those instructions associated with that particular department, so you know it thoroughly.

It is hardly necessary to mention to you young men, but loyalty is very essential, and I hope that you have a very keen sense of loyalty. You must be loyal to your superiors, and first you must be loyal to yourself. You must be considerate of those that are assigned for your supervision. You are now officers, and that carries with it a very serious responsibility. You are responsible for guiding the efforts of those under you. You are also responsible for being an officer and gentleman at all times and all places; that is, both on and off the military reservation. You must never bring discredit to the service. In obedience - I only wish to say always make it willing obedience. Do not obey half-heartedly. Do exactly what you are told to do, even though you do not believe in it at all. If you feel that it is so wrong it should be rectified, take it up with your superior officer after complying with your orders. It behooves you to put forth your very best efforts at all times, regardless of how trivial your assignment may seem to you. Do not neglect it, give every bit of your energy, thought and care; give it the best attention you know how. You are going to be under surveillance. They are going to observe and mark those of you who are meticulous in the performance of your duties; who can be trusted. I hope that each and every one of you can be in that category.

A great number of people- and I think this is quite true of young men as well - allow themselves to be unnecessarily disturbed mentally over little things which, after they have passed, you realize were of little or no consequence. Do not harbor in your minds those things which annoy you; throw them off. It has always been my policy to try to determine what misfortune might come upon me and to do everything I can prior to its happening to keep it from happening. But should it occur, you having done all you can - you can do more - dismiss it from your mind and look into the future. You may think that is trivial; it is not. A great many people build up a mental attitude that is just as wrong as it can be, and it has a habit of accumulating. So don't allow yourself to be annoyed.

We are always harping on excesses. There is nothing more harmful to our future, our good health, our enjoyment of old age, our appreciation by our friends, and our standing in our community than being harmful in excess. That applies to eating, drinking, working, and to recreation. There are probably more

people in this country who are suffering from poor health due to excesses than from any other cause.

Now in flying there are times when certain anxiety exists as to your outcome or your safety. I know from my own experience, and you probably have had it yourself. I am sure you have. The thing to do under those circumstances is to get control of yourself. Do not allow confusion to interrupt your normal train of thought, and consider what is best for you to do under those circumstances. I have always tried to have in my mind all those things which might happen to me that might be unfortunate. When I have plenty of time to do so, I consider how I could best extricate myself from such a predicament. Then when the emergency comes on, you already have a carefully thought out plan to grab right out of your memory and put to use. Do not deviate from it because of the fact that you may be excited at the time. Now anxiety is good for nothing if we cannot turn it into a defense, so when I stated to you to be prepared for that emergency it was as a defense from these anxious moments.

I wish to speak of the living conditions which you will find at your new station. I cannot speak exactly, because I do not know where you are going. I can say this: that the accommodations for officers at all of our air fields are becoming more crowded at all times, and unfortunately when they put officers on rental allowance they usually take the junior officers. So no doubt they will be picking on you. Your rental allowance will be only $40.00 per month. That may seem quite a lot of money to you, but try to find a place to live in the vicinity of some of our air fields and you will find that $40.00 will not rent a good place. If you are a bachelor you can get along very nicely. I hope I am not discouraging any of you young ladies.

I would like to say this for your future: select an ideal. An ideal is like a horizon, you keep striving to approach it but never get near it. Your ideal should be the best accomplishment, best traits of character, of many men. They do not all exist in any one man, but if you will try to emulate those qualities which you admire in others they will have a decided effect upon you as an individual. You want to remember that behavior is like a mirror in which everyone displays his image. People seldom improve when they have no model but themselves to copy after.

Now you are all - excepting those that have commissions - very much interested in your opportunity to get a commission in the regular service. I can give you no definite statement at this time. I will only mention to you the trend that exists. Today our procurement program for airplanes is far ahead of our procurement program for pilots. It will not be many years until we will have a decided shortage of experienced pilots. This Training Center is the only crucible from which we can obtain that material. The necessity will exist for trained pilots, and particularly those that can remain with us definitely. At the present time in our tactical organizations the grade of 2nd Lieutsnant is in a constant state of flux. There is very little permanency to it, except for those who succeed in graduating from this school and who are graduates of West Point, to provide those to come forward to take the place of those of us who are going out at the top. It is a condition that will eventually, I am sure, be corrected.

Be frugal in your habits. Whatever you do, budget. Stay out of debt, fight it with all your force. There is no habit so gratifying to a man as always paying his bills and having a little money to call his own. I advise you to start today and save $5.00 each month. That doesn't mean much now, but it will seem a lot in your new surroundings and in a few years time it amounts to a lot. It gives you an entirely different attitude toward life than if you are carrying upon your shoulders a burden of indebtedness that weighs you down.

The provision, as I remember, at the present time makes it possible for those of you just receiving your commissions to take out government life insurance within 120 days. Do not let that time elapse until you have some government life insurance. When you get further along you should have additional insurance. That is a protection for you, your relatives and your families.

Now your character - which you can't keep from anyone. That is in your face. You can develop it to some extent; you can improve on what you have. The definition for character is a perfectly educated will. Keep it as high as possible.

The remarks I have made are the result of my experience and observation over 2[illegible] years of service. You are under no obligation whatever to accept these statements without due consideration as to their value to you. I would feel bountifully repaid for the opportunity to make this address if I have made some contribution which might be helpful to you in achieving greater renown for yourself or make it possible for you to gain a greater proportion of happiness in living. When the going gets heavy and the skies are dark you may all exercise that quick judgment and tenacity of purpose which will insure you bringing your ship safely in to its home port.

May God be with you and protect you. Your destiny is in your own hands."

HITTING THE HIGH PLACES WITH THE MODERN AIRPLANE

Time: 7:30 a.m., Monday.
Place: Hamilton Field, Calif.
Action: Captain Julius T. Flock, member of the 31st Bombardment Squadron at Hamilton Field is explaining to his commanding officer a two-hour delay in a flight from Salt Lake City to March Field. Captain Flock left Salt Lake early in the morning on one of the first test flights made at Hamilton Field of the new Douglas B-18 Bombardment plane, and arrived at March Field two hours overdue.

"Well, Major, it was like this. I had heard that these new planes fly far and fast, but after all I had never flown anything newer than the Martin. So I started out from Salt Lake, figuring the usual speed and time, and off we went. We had just barely gotten our altitude and had gotten all set for the long run when I saw a bunch of lights flash past below me. 'That's funny,' I thought, 'there's no city here,' so I kept right on my course.

"I flew for two more hours without seeing a city down below or even a single light. By this time I should have been fairly close to March Field, but knowing how accurately I had figured my course I wasn't a bit nervous, and - sure enough - my confidence was rewarded when a few minutes afterward the lights of a little village stared up at me through the haze of the dawn.

"I circled the town once, twice, three times, before I realized that I had never seen this place before - surely this wasn't March Field. Hurriedly I checked my course and computed my time - this must be March Field! So, I landed in a large field adjacent to the town.

"I filled out my Form 1, stepped out of the plane and was waiting complacently for the Officer of the Day to come and meet me, when WHAM! - an eight-foot spear embedded itself in a tree, beside my ear. 'Well,' I thought, 'This is a funny way to greet a stranger,' so I dusted off my captain's bars and immediately sought to find and chastise this individual who would treat me so, after such a daring flight. Did I find him? I did not. I found a little brown pixie, who barely came up to my waist, wearing a more outlandish grass shirt than you have ever seen.

"'Here, here, son,' I said, 'is that my way to greet a visiting fireman?'

"'Blublublub,' said the runt.

"I grabbed the little pixie by the scruff of the neck and shook him until every protruding tooth quivered and shivered like jelly.

"'That will teach you to keep a civil tongue in your empty little head,' I said, letting him down.

"Off goes the pixie on a dead run. 'My, my, what a queer place,' thought I to myself, as I started off toward the town.

"After a few minutes walking underneath the palms of sunny Southern California, I came upon the queerest little town you have ever seen. There were about a hundred little grass huts surrounding an open spot, with two wooden buildings just outside the circle. I knocked on the door of the smaller wooden building and a priest came to the door.

"'Good morning, father,' I said. 'Perhaps you can tell me where I am, I hardly believe this is March Field.'

"'No,' said the priest, 'this is Suva in the Fiji Islands and I have never heard of March Field. You are just in time to attend my Sabbath services, my son.'

"I said, 'You must surely be mistaken, it says right here in the book that this is March Field, California, and I know it's Monday.'

"'Well,' said the priest, 'you can call it March Field if you like, but I have been here twelve years Christianizing these cannibals and I call it Suva.'

"Such badinage weighed heavily upon my shoulders at such an early hour, so when the father invited me in for breakfast, I accepted with alacrity. But when another little pixie brought out a bowl of poi, 'My Gawd,' says I to myself, 'he must be right,' and then it dawned on me that I hadn't allowed for the speed of the newer plane.

"Back I tore to the field, warmed up the ship, gave her the gun and retraced my steps across the international date line. One hour and fifty-five minutes later I came upon March Field, which I had thought on my first flight over it was a suburb of Salt Lake City. So, I landed two hours late, but I found out what it is to fly a really fast airplane."

Of course, the fact that there was a fifty-mile per hour head wind might have had some bearing on the fact that Captain Flock was two hours late.

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"A great deal of our aerial firing these days is being done at an altitude of 15,000 feet," says the Correspondent of the 36th Pursuit Squadron, Langley Field, Va., and he then adds: "After the first one or two attempts, we have been able to compensate for the somewhat mushy feel of the controls at that height and concentrate on the targets, with the result that the targets came down in ribbons and the pilots came down frostbitten."

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Major Lotha A. Smith (Captain), Air Corps, was promoted to the permanent rank of Major, as of October 19, 1937.

TRAINING FLIGHT BY 17TH ATTACK GROUP

ON one occasion recently, 21 A-17A's of the 17th Attack Group, composed of a Headquarters squadron of three planes and three tactical squadrons of six planes each, took to the air on the first leg of an extended unit navigation flight. Although originally scheduled to arrive at Fort Leavenworth, Kansas, from March Field, Calif., on the first day, which was on a Friday, the flight was delayed overnight at Albuquerque, due to a failure in the power lines which operate the electrical servicing system at the Municipal Field.

The Group took off from Albuquerque on the following day and proceeded to Fort Leavenworth, where the first mechanical trouble was encountered - a broken exhaust valve stem. Fortunately, a new valve was obtained and installed during the night, allowing the flight to continue as a unit.

The next leg of the trip took the Group to Selfridge Field, where it was found necessary to replace a leaky three-way gas valve and an oil pressure relief valve spring. While at Selfridge Field, various items of swimming and fishing equipment were returned to pilots of the First Pursuit Group, who had inadvertently left same at Muroc Dry Lake during their outing last May.

After an extremely pleasant night's stay at Selfridge Field, the 21 planes took off for Patterson Field, where full advantage of a day's stop over was taken to inspect Wright Field. As might be expected, the interest of the enlisted men and officers centered particularly on the experimental planes and engines undergoing tests. Informal talks with the personnel at Wright Field did much to apprize the visitors of the difficulties encountered in developing new and satisfactory types of equipment to meet the growing demands of the Service activities and allow them to appreciate the thoroughness with which each piece of equipment is tested.

On the morning of Wednesday, the flight took off for Maxwell Field to visit the Air Corps Tactical School. Enroute, a two-hour stop was made at Nashville, Tenn., where the Group personnel assisted in the dedication of a new Municipal Airport in that city.

The next stop was Barksdale Field, bailiwick of the Third Attack Group. The general impression of Barksdale Field was that, in addition to being one of the largest military airports in the world, it is one of the most attractive. This impression may have been influenced by the cordial reception given the visitors by the personnel stationed there.

Leaving the green fields behind, the Group next pointed for Biggs Field, El Paso, Texas, one of the Air Corps' important transcontinental stops. After a thoroughly enjoyable overnight stay at Fort Bliss, the 21 planes left for March Field, arriving there in good order at noon on Saturday.

The entire flight was so arranged as to provide training in the various types of problems required of Attack Aviation. Rendezvous problems were flown, the rendezvous points in all cases being from six to eight hundred miles from the starting point. Attack and navigation flights were assigned the various units. Emphasis was placed upon the accurate timing of arrival at a designated point and, to the credit of the 17th Group, it may be said that their work was excellent. Simulated attacks were conducted.

Another purpose of the flight was to acquaint the personnel involved with the activities of other Air Corps stations and schools at Leavenworth and Maxwell Fields, at which places the stopovers were most enjoyable as well as instructive.

The flight also served to furnish an accurate idea of the maintenance difficulties that might be expected on an extended trip involving a large number of airplanes. Aside from the three replacements of parts previously mentioned, no difficulties were encountered. Spark plug trouble was noticeable by its complete absence. From a maintenance standpoint, the flight was a fitting tribute to the practical value of the maintenance system as conducted by an efficient, intelligent enlisted personnel, and attested to the excellent quality of equipment furnished by the Materiel Division.

In all, a total of 665 hours of flying was completed in various phases of training. The average gas and oil consumption per hour for the flight was 40 gallons of gas and 5.5 quarts of oil per plane. The day and hour schedule was strictly adhered to, except for the delay occasioned at Albuquerque by the failure of the gasoline servicing system.

Aside from the training involved, the flight was a complete success socially, a cordial reception being extended by all stations visited.

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The Second Bombardment Group Navigation School, which was formerly conducted by the 21st Reconnaissance Squadron, was on September 30th transferred to the Headquarters and Headquarters Squadron, 2nd Bombardment Group, GHQ Air Force, Langley Field, Va. First Lieuts. J.W. Egan, Senior Instructor, and C.H. Rees, Assistant Instructor of the Navigation School, were also relieved from assignment to the 21st Reconnaissance Squadron on September 30th and assigned to the Headquarters and Headquarters Squadron of the Second Bombardment Group.

V-7544, A.C.

THE CRASH OF THE C-27A TRANSPORT PLANE IN PANAMA

Further reference is made to the crash near Aguadulce, Panama, on August 3rd last, of the C-27A Transport plane, piloted by 2nd Lieut. Thomas J. Schofield, Air Reserve, a brief account of which appeared in a previous issue of the Air Corps News Letter. It will be recalled that the pilot and his five passengers reached the ground safely through the medium of their parachutes.

It is interesting to note that while these men landed only about eight miles north of the National Highway, it took them almost two full days to reach this highway, and they were not returned to their home station until the third day, this because of the nature of the terrain over which they were flying. Had they landed south of the National Highway, they would have been in a position to have been picked up very soon after landing. This is an indication of the nature of the country in Panama.

Lieut. Schofield has submitted a particularly interesting narrative report on this most remarkable accident and, under the belief that this report will prove of interest to all Air Corps personnel, it is quoted below, as follows:

"At 1:10 p.m., August 3, 1937, I took off from Albrook Field, Canal Zone, in the Bellanca with seven men, some provisions for the Gunnery Camp at Rio Hato, and baggage and equipment belonging to three of the men who were leaving for a thirty-day hunting trip in the Volcan area. The weather at Albrook, along the route to Rio Hato and at Rio Hato was excellent.

I made a good landing at Rio Hato at 1:45; taxied up close to the building housing the men and radio station and immediately discharged the supplies for Rio Hato and two of the passengers. At 1:55 I taxied out and took off for David, Republic de Panama, setting my course on 270 degrees. At that time the weather was still excellent at Rio Hato but I could see a rain squall about twenty miles away and a little to the right of my course, which was due west. Also, I could see large cumulus clouds on my course, though many miles ahead. I had passed Aguadulce and was to the hills of the northern part of the Mala Peninsula before I reached the first cloud. The base of the clouds was about 4000 feet with numerous rain and darkened areas to the south, west and north. Flying just south of some of the larger cumulus clouds, I encountered up-drafts of air which enabled me to climb at a thousand feet a minute with the ship in a horizontal plane. At 10,500 feet I levelled out and continued still on a westerly course. The large cumulus clouds were separate and distinct from one another, although fairly close together. Ground could be seen plainly between them, and under the clouds it appeared for the most part to be good weather with the exception of the small rain areas aforementioned. I reported my position to GA (the ground station at Albrook) and to RH-7 (the ground station at Rio Hato) when I passed Calobre and Cañazas. From Cañazas on to just before the position of the accident, there seemed to be no more rain under the clouds. Some of these cumulus clouds appeared to attain an altitude of about 20,000 feet, although the tops of the majority of them were below 10,000. Nearly all seemed to have their base at about 4,000 feet. On my climb to 10,000 feet, I had not flown through any clouds but after I had levelled off, I flew over some, beside some and through some. At 2:45 I could see the Chiriqui Gulf from 30 degrees to 90 degrees to my left and as I had seen Montijo Bay off my left wing at about 2:25, I started to descend, knowing that I must be about forty miles from David. I throttled back a little and set the controls so that we were losing 200 feet a minute at 130 miles an hour, air speed.

At this time I was flying in a large area free from any clouds whatsoever. Directly ahead of me, however, was a very large cumulous cloud whose top seemed to be about 20,000 feet. To the right of it, or due north, were other cumulus clouds close up to, though not touching, the larger one, whose tops appeared to be about 12,000 feet. The top of 'El Volcan Chiriqui' could be seen clearly at intervals in between the tops of these, though many miles further.

Just to the south and extending north to the large cumulous cloud was a darkened area of low visibility in which it appeared to be raining, although there was no cloud formation as such. The top of this area shaded off in color until at about 12 or 14 thousand feet it was clear and unlimited with no other layer; and only the high feathers of the alto cirrus marring the clear blue. The darkened area immediately in front of me, however, ran only from the large cumulous cloud to the coast, making it about fifteen miles wide, the coast line being clear.

At just a slightly lower altitude than that of the airplane and just a few degrees to the left appeared a strata of clear air, separating the darkened area into upper and lower portions, and extending from about the middle of the curtain, north nearly to the large cumulous cloud. A little further to my left, about 15 or 20 degrees, and quite some distance away, through the curtain toward which I flew, I could see intermittent lightning and a very dark area. This appeared to me to be quite distant

and over the Charco Azul Bay which is twenty miles southwest of David, my destination. Through the darkened area, I could see lighter spots, causing me to believe that the area was not very thick but merely a sheet of rain. Several courses to David were open to me. They were as follows:

1. Continue the present course of 270 degrees and fly through the large cumulous cloud.
2. Climb about 2000 feet and turn north a sufficient number of degrees to enable me to fly around the large cumulous cloud and over its smaller neighbors.
3. Turn south to the coast and around the dark area.
4. Lose some altitude almost straight ahead, and go through the light strata between the two darker portions.

I elected the fourth alternative and started to descend, changing the course just a little to the left in order to enter this strata of clear air with part of the darkened area above me and part below me. When I had just about approached the curtain, I found that the clear area was still a little bit below me. Instead of diving the ship and entering this area horizontally, I continued on my same angle of descent thinking to intercept the cleared area within a very few seconds. As I entered this curtain, I encountered heavy rain, the drops being very large. I had flown in the rain for only about a minute or two, when I decided to turn around. Therefore, on instruments, although not flying blind (for there appeared to be about two miles visibility), I started a medium bank to the left and had completed about 90 degrees of the turn when I saw, just to my right, a large clear area in which there seemed to be no rain. I, therefore, turned 90 degrees to my right to bring me into this area. Just as I had finished my 90 degrees of right turn (which brought me back to my original course of 270 degrees), I broke into this clear area which seemed to be a circular area 8 or 10 miles in diameter with a dark ceiling just above me. I found that I had entered the area from a tangent so that I was just inside its circumference and that most of it was ahead and to the right. In this area there was no rain and objects on the ground could be distinguished clearly.

I had just looked at the ground and was looking at the instruments, some of which read as follows:

Sperry horizon, 45 degrees.
Altimeter, 9500 feet.
Rate of decline, 200 feet a minute.
Air speed, 140 miles an hour.
Manifold pressure, 27" Hg.
Temperature, plus 2 degrees C.

The motor was running perfectly. It had spluttered a few times after starting to descend but had picked up immediately upon a partial closing of the altitude adjustment.

Wishing to shallow the bank, I turned the wheel to the left and with a straightened leg, pushed the left rudder. Just as I was in the act of doing this, there was a violent shuddering, seeming to come from the tail. Even as I jerked back on the throttle there was a terrific explosive noise. The left rudder pedal thrust back at me violently, knocking me over in the right-rear corner of the cockpit. The controls had gone loose with a snap. The shuddering had lasted only about one-half a second, or about as long as it took me to close the throttle when my hand was already on it.

Immediately after the report, my seat and cabin were rolling in a clockwise direction. As I came up from the bottom of the roll, I pulled myself back into the seat, opened my safety belt which had been around my knees, with my left hand grabbed the D-ring of the pilot's emergency trap door. With this as a hand-hold, I attempted to turn to the right to look back into the cabin. Something was at my back and shoulders which prevented me from doing so. At that instant I was thrown out, presumably by the blowing off of the emergency trap door. At the instant of going out, I could distinctly hear the motor ticking over nicely.

Events at this point are a blur until I found myself floating on my back with the fuselage of the ship a short distance above me, but not seeming to fall as rapidly as I. The axis of the fuselage was still horizontal and was still rolling in a clock-wise direction. There were no wings, or fabric on the fuselage members except for a dark blur at the tail. There appeared to be no vertical fin or elevators, either. Wreckage was all over the sky, bits of it falling at the same rate of speed as I, pieces falling faster, and some falling slower. I delayed opening my parachute because it appeared that the skeleton fuselage was falling directly at me. After what appeared to be quite a long time, but actually was only a second or so, I did yank my ripcord. After a horrible jerk, I glanced at my watch, saw that it read 2:55, was startled by the now total lack of noise, and began to count the other parachutes in the sky. Three were grouped close together much higher than I was; one was close to me and just a little lower. The sixth I could not find, but was informed a little later, when on the ground, that it had been just above me and hidden by the silk of my chute. I watched what was left of the fuselage, a mere skeleton, flash by me and strike at the edge of a small clearing in the jungle.

As I was close to the trees then, though on the other side of a steep hill

from which the fuselage had hit, I jackknifed my body, covered my face and head with my forearms and hands and crashed through the upper branches of a tree, felt the 'chute caught by these same branches and grabbed a limb close to the trunk with my first swing. Shortly after my parachute had opened, I observed that I was drifting in a northerly direction toward the higher mountains. Then followed a strata or air current which caused the parachute to oscillate violently. Below this strata the air was smooth again, but drifting me in the opposite direction, southerly and toward the now distant Pacific.

Since just before the accident, the weather was good. There was no rain. The horizontal visibility at the altitude at which my chute opened was about 20 miles. I could see mountains on one side and the coast line on the other. I had been on the ground for about two hours before any rain fell on the locality in which I landed.

From examination of the skeleton fuselage on the ground after it had hit, it was found that the landing gear, the sesqui-plane struts, the left stabilizer and the motor were still attached to the fuselage members, but all the fabric, with the exception of a little at the tail, had been torn from the fuselage before impact with the ground. There were no signs of any large pieces of the wings on the ground, nor had the wings been seen in the air by any of the men while descending in parachutes. Many pieces of yellow fabric were seen both in the air and on the ground, but no wing section, as such. One of the men reported seeing one of the gas tanks falling free. This is corroborated by the fact that though one gas tank is in the wreckage of the fuselage on the ground, the other tank is quite some distance from that wreckage.

The men in the cabin, although having their parachutes on and buckled, did not have their seat safety belts buckled. Three of the men were thrown out of the fuselage and remember nothing between the time of the shuddering and when they were falling free. The other two men found themselves half in and half out of the side of the fuselage tangled in wire cable. They report there being no fabric on the fuselage at that time. The three men who were thrown out were the ones who were grouped together and much higher than myself and the other two men when all chutes were open. Those three men landed not far from where the fuselage had struck the earth, though we three landed at a considerable distance from it."

In commenting on the weather conditions which led to this accident, the Weather Section of the Training and Operations Division, Office of the Chief of the Air Corps, states that the two physical phenomena, either of which conceivably might have caused this accident, namely a static discharge or a violent gust, are now the subject of conjecture and research among the foremost scientists connected with these problems as to the ramifications of the nature and forces developed.

The Weather Section offers the following as a possible cause. As a result of recent study it now appears that the loads introduced by gusts on aircraft are, under maximum observed conditions, considerably greater than heretofore assumed. Maximum gustiness is known to occur in regions of thunderstorms. From various considerations it is known that vertical currents of the order of 250 miles per hour exist in the most violent of these storms. Velocities of this order will be found only in the cumulus clouds associated. It is believed, however, that high velocity gusts will be found in the region close to such clouds, their maximum intensity being only a matter of conjecture to date. The airplane involved had wooden spars in the main wings, which possibly had deteriorated considerably from their original strength, as a result of being for some time in the tropics. It is quite conceivable that a sufficiently violent gust was encountered to tear the wings off. The resulting openings in the fuselage would then act as air scoops and tear off the fabric in the same manner as a thin paper bag may be blown up to the bursting point.

While it would appear that this would result in only a few major tears, it is believed that the flapping fabric would shortly be completely stripped. The clockwise rolling of the fuselage could have been due to the unequal remnants of the wings on the two sides remaining or to a partial failure and collapse of the tail section.

As to the cause of this accident, the Air Corps Materiel Division, Wright Field, is of the belief that had the airplane encountered a gust of sufficient intensity to cause failure to the structure the power plant, together with part of its mount, would be the first part of the structure to leave the airplane.

Estimating that the gross weight of the airplane at the time of the accident was 7800 pounds (the design gross weight being 9592 pounds), it is stated that with the gross weight of 7800 pounds the ultimate load factor would be increased from 5.5 to 6.5, except for the power plant supporting structure or other structural members supporting concentrated loads whose weights do not change in flight. In this accident there was no such structural failure reported; therefore it is believed that no gust of sufficient intensity to cause failure to the airplane was encountered. Calculations show that

the airplane would fail if it encountered a positive sharp edge gust of 62.5 feet per second, or a negative sharp edge gust of 51.9 feet per second. Gusts of such magnitude have never been recorded.

The Materiel Division further goes on to say that the loose control described in the report indicates a structural failure in the rear portion of the airplane, while the blowing off of the fabric indicates the sudden expansion of air inside the structure, which may have been caused by lightning. The violent shuddering of the airplane indicates flutter in the tail surfaces or wing, or both, which could be caused by a gust or looseness in the structure or control system, due to excessive wear. The possible structural failure in the rear portion of the fuselage indicated by the action of the rudder controls may have been caused by a previous hard landing, or there may have been fatigue failure in the structural members.

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CHIEF OF THE AIR CORPS VISITS HAWAII

On Thursday, October 7th, Hawaii was honored by the arrival of Major General Oscar Westover, Chief of the Air Corps. General and Mrs. Westover arrived on the U.S.A.T. ST. MIHIEL, and were greeted by a flight of B-12's of the 5th Composite Group early on the morning of their arrival about fifty miles from Oahu. On Friday, General Westover visited Luke Field for an inspection of the Hawaiian Air Depot and the tactical units. The inspecting party arrived by air from Bellows Field and took off soon after in the C-33 to witness bombing by all units of the Group. Formation bombing against water targets was conducted. One target was located off Oahu and the other off Molokai. Both targets were made available to the Group by Naval units stationed at Pearl Harbor. After the inspection, General Westover and his party, which included Brigadier General Barton K. Yount and Colonel Robert C. Candee, of the 18th Wing, were guests at a luncheon at the Luke Field Officers' Club.

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"IRON LUNG" TRANSPORTED IN ARMY PLANE

An errand of mercy was performed by Master Sergeant Carlton P. Smith, pilot of the 3rd Transport Squadron at the San Antonio Air Depot, who on October 16th flew a Transport plane to Wichita Falls, Texas, and picked up an "iron lung," which had been purchased by Wichita Falls residents, and carried it to Tulsa, Oklahoma, from which place an infantile paralysis patient, Dorothy Ruth Chastain, 16, in a critical condition, was to be returned to Wichita Falls. She was placed in the "iron lung" and flown back to Wichita Falls by Sergeant Smith, who returned to the San Antonio Air Depot on October 19th, having been delayed on the trip by bad weather and engine trouble. The patient's father, Mr. J.H. Chastain, had requested the War Department for the loan of this Transport, and the journey was performed under War Department instructions through Eighth Corps Area Headquarters.

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CHANGE IN DESIGNATION OF ACTC CLASSES

A change in the designation of classes at the Air Corps Training Center was ordered by Brigadier General James E. Chaney, Commandant, on September 29th. From now on, classes will be designated according to the year and time of year that they finish the course. Thus, Class 38-A is the class which will graduate in February of 1938. This class is at present undergoing training at the Advanced Flying School at Kelly Field, Texas. This change will greatly facilitate the identification of classes, as well as permit them to retain the same designation, whether at the Primary or Advanced Flying Schools.

Due to changes in methods of instruction and in types of equipment, the hours of training, both on the ground and in the air, have been changed for Class 38-. The reduction of flying hours consists generally of a reduction in formation and training in fundamentals, including time and distance problems; in bi-motor transition and accuracy; and, in the case of the Observation Section, a reduction in transition and accuracy. In Ground School training the lectures on Bombardment, Pursuit and Attack Aviation have been reduced one hour each. All Bombardment Aviation subjects have been dropped since Bombardment Aviation is no longer taught at the Training Center. The course in Combat Orders has been reduced two hours.

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VISITORS AT ADVANCED FLYING SCHOOL

The Air Corps Advanced Flying School, Kelly Field, Texas, received a visit on October 13th from the Royal Italian Consul of New Orleans, the Marchese Dian Gerolamo Chiavari. He was accompanied by a party of fifteen, including Mr. Henry A. Guerra, of the San Antonio Chamber of Commerce. The Consul and his party were particularly interested in the various types of airplanes in use at Kelly Field and in the new miniature range building.

The party was accompanied on a tour of inspection of the field by the Commandant of the Advanced Flying School, Colonel Arnold N. Krogstad, and the Assistant Commandant, Colonel E. A. Lohman.

THE FOG BUSTERS OF THE NORTHWEST

According to the News Letter Correspondent, the members of the 91st Observation Squadron are undergoing a very odd evolutionary transition in this little known part of the western hemisphere, and he then goes on to say:

"In previous News Letter reports we told you that we were known as the 'Fog Busters of the Northwest,' not realizing at the time that a strange physical change was taking place in our anatomical makeup. This is much like an Alice-in-Wonderland story which many of you from the outer world won't believe without seeing, so we are submitting a pictorial proof. The picture on the left shows in detail the changed appearance of our personnel that survived the first year in this saturated fog-belt of the Puget Sound Area. Needless to say, we welcome this adaptation to this climate. We find our web feet ideal for paddling home through the soup when returning from cross-country trips. Our eave-like ears shed water perfectly, thus protecting our hearing when trying to locate the cone of silence, and a couple of vibratory quacks from our bills entirely eliminate all ice.

The part of our equipment we like best is the right-handed parasol, which is guaranteed to keep the 'hoisting hand' dry in any weather. Private Stepp, our photo department artist, is responsible for this composite picture of our appearance.

Other than the abnormal situation pictured above, here's news about the Squadron's activities during September. The month was devoted to aerial gunnery on ground targets, which was the first use of our O-46A equipment for this purpose. The results were far from satisfactory, and there were no exceptionally high scores made. There was a difference of opinion among the pilots at the start of the practice period as to how the wing guns should be sighted with respect to the sighting bar. Half the pilots wanted the gun sighted parallel to the bar sight, so that by aiming at an assumed spot on the lower left of the target, the shots would reach the bullseye. The other half wanted their guns sighted to coincide at 700 feet, which system was finally adopted by all gunners. Although this gave an error at all ranges other than 700 feet, it was found more natural to aim at the target center than at an imaginary point.

Ground tests of the guns at this range showed a dispersion of about two and one-half feet, which may be accounted for by the type of mounting used. This is far from satisfactory, and we do not expect the high scores possible with the old type synchronized guns can be equalled with our new equipment."

V-7544, A.C.

BIOGRAPHIES

LIEUT. COLONEL DONALD H. WILSON

Lieut. Colonel Donald H. Wilson, Air Corps, at present on duty as instructor at the Air Corps Tactical School at Maxwell Field, Ala., became interested in aviation in his boyhood days. He is a native of Hiner Hill, West Virginia, where he was born on September 25, 1892. Some years before the war, he built a large biplane glider and made hundreds of short flights therein with the assistance of a troop of Boy Scouts in his charge.

After graduating from the public schools of Baltimore, Md., in 1906, Colonel Wilson attended the Baltimore Polytechnic Institute for three years. For six years thereafter he was engaged in securing data and making maps of all kinds used in railroad work, including surveying, both preliminary and location. In February, 1916, he enlisted in the 5th Maryland National Guard Infantry, serving in that organization as Corporal, Sergeant and Supply Sergeant until April 9, 1917, when he was commissioned a second lieutenant. He was promoted to a first lieutenancy in the National Guard on May 2, 1917. During the year 1917,he took a special course in aeronautics at the Massachusetts Institute of Technology, Cambridge, Mass., for candidates for commissions in the Army and Navy Aerial Reserve, which course was under the tutelage of Prof. Alexander Klemin.

When the 5th Maryland Infantry was mustered into the Federal service for duty along the Mexican border, Colonel Wilson served for eight months at Eagle Pass, Texas, and during the World War, when this regiment was again Federalized, he served for one year at Camp McClellan, Anniston, Ala. He sailed for overseas duty in June, 1918, and for several months was stationed in the Vosges-Switzerland Sector. From September 27 to October 15, 1918, he attended the school for flying officers at St.Maxient, France, and from October 17 to November 2, 1918, he was a student in the Field Artillery School at Camp DeSouge,France. He was then transferred to the 2nd Aviation Instruction Center at Tours,France, where he was on duty as a student aerial observer until December 13, 1918. Thereafter, until May 15, 1919, he was on duty in the same capacity at the Second Corps Aeronautical School at Chatillion Sur Seine, France. In addition, he was attached to the 20th Company, 4th Motor Mechanics Regiment, Air Service, for duty as Post Adjutant, from February 12, 1919. Transferred to Kettig, Germany, May 21, 1919, he was assigned to the 186th Aero Squadron for duty as aerial observer.

Colonel Wilson was honorably discharged from the military service, August 15, 1919. Over a year later, on September 18, 1920, he was commissioned a first lieutenant, Air Service, Regular Army, with rank from July 1, 1920. He was promoted to Captain with the same date of rank. His first assignment under his regular commission was duty as Acting Air Officer of the 3rd Corps Area until October 20, 1920, when he was transferred to Post Field, Fort Sill, Okla., where he took a refresher course in aerial observation at the Field Artillery School of Fire. He also served as instructor in the garrison school at that post and as instructor in Infantry Liaison at the Air Corps Observation School. Completing the course of instruction at the Field Artillery School on April 9, 1921, he remained at Fort Sill as instructor at the Air Service Observation School, in addition to performing various other duties, until January 13, 1922, when he was transferred to Carlstrom Field, Arcadia, Fla., for duty as student at the Air Service Primary Flying School. In June, 1922, following the completion of the primary flying course, he was transferred to Kelly Field, Texas, for advanced flying training, graduating and receiving the ratings of Airplane Pilot and Airplane Observer as of January 23, 1923.

Retained at Kelly Field for duty, Colonel Wilson was assigned to the 10th School Group and, in addition to duty as Senior Instructor, Department of Observation, at the Advanced Flying School, he performed various other functions, including those of commanding officer of the 42nd School Squadron. In the latter part of July, 1924, when he was transferred to the Office of the Chief of Air Service, Washington, D.C., he was assigned to the Reserve Section of the Training and War Plans Division.

Three years later, in August, 1927, Colonel Wilson was detailed to foreign service, and during the major portion of his two years of duty at Camp Nichols, Rizal, P.I., he commanded Flight B of the 2nd Observation Squadron. Transferred to Langley Field, Va.,he was assigned to duty as instructor at the Air Corps Tactical School. He was a student at this School during the school year 1930-1931, and upon his graduation in June, he resumed duty as instructor at the Tactical School until his assignment, in August, 1934, as a student at the Command and General Staff School at Fort Leavenworth, Kansas, to pursue a two-year course of instruction. While on duty as instructor he also served as a member of the Air Corps Board at Maxwell Field.

Upon his graduation in June, 1936, from the Command and General Staff School, Colonel Wilson was once more assigned as Instructor at Maxwell Field.

LIEUT. COLONEL WILLIAM O. BUTLER

Lieut. Colonel William O. Butler, Air Corps, now in command of France Field, Panama Canal Zone, and the 6th Composite Group, is a native of Virginia, where he was born on September 23, 1895. He graduated from the U.S. Military Academy on April 20, 1917, was commissioned a second lieutenant, and assigned to the 6th Field Artillery. He was promoted to first lieutenant on May 15, 1917. From June 12 to July 22, 1917, he served with his regiment at Fort Douglas, Arizona, and was then ordered to duty overseas.

From September 1 to October 15, 1917, Colonel Butler was stationed at Valdahon, France, undergoing training as an aerial observer. Assigned to the front in Lorraine, near Einvelle, he served as aerial observer with the 73rd Balloon Company, November 1 to 20, 1917; was on duty at the Gondrecourt Training Center to December 22, 1917; served at the front to the west of Toul as aerial observer with the 91st French Balloon Company to March 1, 1918, and from that time until June 1, 1918, he was on duty with the A.E.F., commanding Company B, 2nd Balloon Squadron. He was cited by General Pasaga, commanding the 32nd French Army Corps, for exceptionally meritorious and efficient service, and was awarded the French Croix de Guerre.

Ordered to duty in the United States, Colonel Butler's next assignment was at the Army Balloon School at Lee Hall, Va., where he qualified as an aerial observer, receiving the rating as such as of July 31, 1918. While stationed at Lee Hall, he was, for the most part, in charge of instruction at the Balloon School, and at various times served temporarily as commanding officer of the post. He was relieved from duty with the Air Service on October 4, 1919, and assigned to the 10th Field Artillery at Camp Pike, Ark.

Reassigned to the Air Service in January, 1921, Colonel Butler received training at the Airship School at Langley Field, Va., and in May, 1921, was assigned as instructor at that school. He received the rating of Balloon Observer as of May 24, 1921, and that of Airship Pilot as of August 13, 1921. In September, 1921, he was detailed on the staff of the Field Officers School (later redesignated as the Tactical School) at Langley Field, as instructor, and he served in this capacity until July, 1922, when he was placed in command of the 19th Airship Company at Langley Field.

During May and June, 1925, Colonel Butler served as Operations Officer for the American balloon team competing in the International Balloon Race at Brussels, Belgium, for the Gordon-Bennett Trophy.

From September 12 to December 17, 1925, Colonel Butler was on duty at Brooks Field, Texas, and from the latter date until February 8, 1926, he was stationed at Kelly Field, Texas, where he pursued a special course in Airplane Observation at the Advanced Flying School, following the completion of which course he received the rating of Airplane Observer.

Reporting for duty at Scott Field, Belleville, Ill., in May, 1926, Colonel Butler served as Commanding Officer of the 12th Airship Company, in addition to performing various other duties, until May, 1929, when he was assigned to duty in the Philippines, with station at Camp Nichols, Rizal. Most of his service in the Philippines was with the 4th Composite Group, and he performed such duty as Post Exchange Officer, Commanding Officer of the 66th Service Squadron and as Executive Officer of Camp Nichols and the 4th Composite Group. In June, 1931, he returned to the United States and was assigned as student at the Air Corps Tactical School at Maxwell Field, Ala., graduating therefrom on June 12, 1932.

From June 29, 1932, to August 20, 1933, Colonel Butler was on duty at Langley Field as Instructor in the Extension Course of the Air Corps School, 80th Division. For the period of a month he was on duty with the Civilian Conservation Corps.

After pursuing a two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kans., August 25, 1933, to June 22, 1935, Colonel Butler was assigned as student at the Primary Flying School, Randolph Field, Texas, to undergo heavier-than-air training. He successfully completed his flying training both at Randolph Field and at the Advanced Flying School at Kelly Field, Texas, and received his fourth flying rating, that of "Airplane Pilot," as of October 7, 1936. He was then assigned to his present duty in the Panama Canal Department.

Colonel Butler received his promotion to Captain, August 25, 1919; to Major, August 1, 1932, and to Lieut. Colonel (temp.), August 26, 1936. He is on the General Staff Corps eligible list.

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THE NEWS LETTER COVER

The very attractive cover adorning this issue of the Air Corps News Letter is the artistic effort of Sergeant Frank J. Lorenz of the Headquarters and Headquarters Squadron, GHQ Air Force, Langley Field, Va.

Sergeant Lorenz is to be commended for the initiative displayed, the excellence both of concept and execution of the design, and for his praiseworthy interest in giving both time and effort to the task. We thank the Sergeant, and hope that sometime in the near future he will find time to create another cover design.

And while on the subject of News Letter cover designs, readers who are handy with the pen are cordially invited to send in appropriate designs for future use.

V-7544, A.C.

ASSIGNMENTS TO WESTERN PROCUREMENT DISTRICT

The following-named Air Corps officers have been relieved from their present assignment and duty, as indicated below, and assigned to duty at the Western Procurement District, with station in Inglewood, Calif., viz:

Major Leland C. Hurd, Air Corps Representative at plant of the Northrop Corporation at Inglewood, Calif.

Major Kenneth B. Wolfe, Air Corps Representative at plant of Northrop Corporation at Inglewood, Calif.

Major Ray G. Harris, Air Corps Representative at plant of Douglas Aircraft Co., Santa Monica, Calif.

Captain John S. Griffith, Air Corps Representative at plant of Northrop Corporation at Inglewood, Calif.

First Lieut. Daniel B. White, Air Corps Representative, Western Inspection District, Materiel Division, Santa Monica, Calif.

Major Hurd is assigned as District Representative, Western Procurement District, and the four remaining officers as Assistant District Representatives.

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WAR DEPARTMENT ORDERS

Changes of Station

To Washington, D.C.: Lieut. Colonel Lester T. Miller, from Duncan Field, Texas, to duty as a member of the War Department General Staff, effective March 19, 1938; Major John S. Gullet, from duty as Assistant Representative at the plant of the Seversky Aircraft Corporation, Farmingdale, L.I., New York, to duty in the Office of the Assistant Secretary of War.

To Denver, Colorado: 1st Lieut. Melie J. Coutlee and 2nd Lieut. Charles H. Leitner, Jr., from Barksdale Field, La.; 1st Lieuts. Jarred V. Crabb, Selfridge Field; John C. Kilborn, Randolph Field; 2nd Lieuts. Thomas F. Langben, Mitchel Field, and Henry B. Fisher, Selfridge Field, for duty as students in the Armament Course at the Denver Branch of the Air Corps Technical School.

To Randolph Field, Texas: 2nd Lieut. Ralph C. Rockwood, from Hawaiian Department; 1st Lieuts. Sam W. Cheyney and Thomas S. Power from the Philippines; 1st Lieuts. William C. Sahms and Robert W. Warren, from Hawaiian Department; 1st Lieuts. Joseph F. Carroll, Wm. J. Clinch, Jr., James P. Newberry and Roy T. Wright, from Brooks Field, Texas.

To Brooks Field, Texas: 2nd Lieut. John K. Arnold, Jr. Previous orders amended.

To Chanute Field, Ill.: Captain Joel G. O'Neal, from Randolph Field.

To Selfridge Field, Mich.: 1st Lieut. Roland O.S. Akre, from Mitchel Field.

To San Antonio Air Depot, Duncan Field, Tex. Lieut. Colonel Lester T. Miller, from Kelly Field, Texas. (Now under orders for General Staff duty next March).

Promotions

Colonel Frank M. Kennedy (temp.) to Colonel; Lieut. Colonel Junius H. Houghton (temp.) to Lieut. Colonel; Major William V. Andrews (temp.) to Major, with rank from November 1, 1937.

EXTENDED ACTIVE DUTY FOR AIR RESERVE OFFICERS

2nd Lieut. Karl Edward Baumeister, Walla Walla, Wash., to Barksdale Field, La., to October 19, 1940.

2nd Lieut. John Henry Williamson, Ninety Six, S.C., to Barksdale Field, La., to Nov. 14, 1940.

2nd Lieut. Frederick Scott, Jr., Iola, Kans., to Barksdale Field, La., to Nov. 7, 1940.

2nd Lieut. William Lewis, Jr., Glendale, Calif. to Hamilton Field, Calif., to May 14, 1938.

2nd Lieut. Robert Leslie Grove, Dallas, Tex., to Barksdale Field, La., to November 21, 1940.

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AN ADDITIONAL SUPPLY OF NAVIGATORS

The 18th Wing Navigation School at Luke Field, T.H., under the guidance of Lieut. R.C. Lindsay, was concluded on October 8th by the presentation of certificates of proficiency by the Wing Commander, Brigadier General Barton K. Yount, to ten Air Corps officers who completed the course and are now rated as dead reckoning and celestial navigators. Of these ten officers, Lieuts. Ruestow, Thatcher, Chapman, Mitchell, Cannon, DuFrane and Olson are from Luke Field, and Davis Knowles and Denison from Wheeler Field.

The News Letter Correspondent states that "the quality of the work done by the students is believed to be excellent and resulted in the following averages for the entire class for the three months' course: mean difference between estimated and actual time of arrival,- 1.51 minutes per hour flown; mean error in course,- .93 degrees; average error in 'line of position' 11.84 miles based on a total of 137 observations; average error in celestial 'fix' based on 29 observations,- 16.34 miles."

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Master Sergeant Nico G. Loupos, Air Corps, Ft. Riley, Kansas, was appointed a Warrant Officer, Nov. 1, 1937, and assigned to the Air Corps at Fort Riley. He originally entered the service in January, 1914; transferred to the Air Corps in June, 1919, and was appointed a Master Sergeant, October 11, 1920. He is an expert Cinematographer and Photographer, and is especially qualified as an aerial photographer.

Warrant Officer Thornton Charles Fitzsimon, stationed at Maxwell Field, Ala., is to be retired as of October 31, 1937, on account of physical disability. His original enlistment in the military service was on February 9, 1914. From October, 1917, to November, 1920, he served as an officer in the Corps of Engineers. He was appointed a Warrant Officer and assigned to the Air Corps, June 14, 1935. He served as Commanding Officer of Burgess Field, Pa., from October 23, 1935, until June, 1936, when this field was abandoned.

On October 1st, the 21st Reconnaissance Squadron, Langley Field, Va., was relieved from attachment to the Second Bombardment Group and was attached to the Second Wing of the General Headquarters Air Force.

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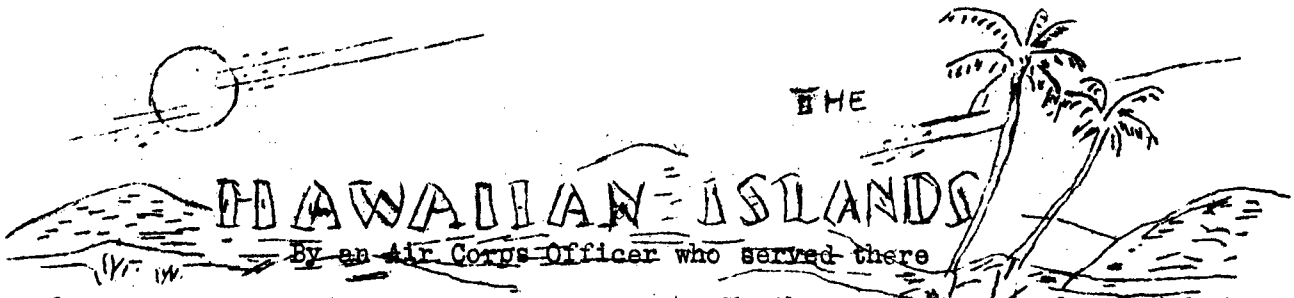

By an Air Corps Officer who served there

On the day set aside for our first trip "Around the Island" (Oahu), there is a great deal more preparation than for a drive of similar length in "the States." A picnic lunch is assembled and bathing suits and towels form important adjuncts of the expedition.

After repeating the drive from Honolulu up the slope of Nuuanu Valley to the Pali, stopping, of course, at that point and again revelling in the outlook under different conditions of lighting from those existing on our previous visit, the descent on the windward side is again made, but the left fork of the road is taken at the bottom.

Along the sides of the road wild guava bushes grow in profusion. The fruit is the color and size of a lemon but roughly spherical in shape. We cannot resist gathering guavas and lose a lot of time on this phase of the trip.

The first beach which can be reached by side roads is Lanakai. This connects with Waimanalo beach to the south, and the latter beach extends to Makapu Head, which we rounded on our previous drive. This time, however, we are heading in the opposite direction.

It would not be right to miss a swim or at least a dip in the crystal clear water of Lanakai beach, but it must not take too long or our trip will be spoiled.

Upon leaving the beach and starting back to the main road we notice that we are passing through a lovely grove and our appetite having made itself suddenly apparent, we cannot resist stopping for at least a snack of our lunch.

After leaving the grove we see a cocoanut palm plantation which, someone in our party tells us, was planted by a corporation now defunct. Although the nuts grow and ripen, they lack the flavor of the ones grown in other climes. Naturally, we must each dislodge at least one cocoanut - not an easy task - and then find the nut covered with a very thick, tough covering of pod which, in all probability, none of us heretofore associated with cocoanuts. Having no Boy Scout axe with us, we find ourselves constrained to give up the attempt to open the nuts and end by stowing away as many as we have room for in the car.

By this time we find that we will have to hurry or complete our trip some other day. Being determined not to fail in our original plans, we now make up our mind to do some serious driving.

We then pass Kaneohe bay, with its peculiar circular coral islands, usually completely submerged except at the lowest of low tides, view stately Ulupau Head across the bay, but keep resolutely on our way.

On our left, we are told, is a long, hard walk through Lantana growth to "Sacred Falls," one of the only two small waterfalls on Oahu, and very difficult of access. The only good view of this 2,000 foot waterfall is from the air, so we continue on our way.

We drive only 10 or 15 miles before it is decided, by unanimous consent, to sit on the shore, only a short distance from the road, and finish the remains of our picnic lunch.

After lolling on the sand for a time, if, indeed, it is not so late that we must drive like mad to get back for our evening at Waikiki, we proceed on our journey. The main point of interest before rounding Kahuku Point and leaving the windward side of Oahu is the Mormon Temple and its perfectly maintained grounds at the village of Laie. This temple is very sacred to Mormons, and we are informed that funds for its support are contributed by people of this faith throughout the Pacific, even including the distant continent of Australia.

We then hurry around the numerous bays of the western coastline until we reach Haleiwa. This constitutes what is undoubtedly the best swimming and bathing beach on the island and we resolve to make another trip to this point, driving directly from Honolulu, some 35 miles away, instead of the way we have just come, spending a longer time bathing and viewing the marine gardens from one of the many small, glass bottomed boats available.

The rest of our trip takes us over the 700-foot-high plateau on which the pineapple plantations of Oahu extend in all directions, through Schofield Barracks, where the full-strength Hawaiian Division of Infantry, Artillery and Engineers is stationed, past Wheeler Field, Pearl Harbor, Kapiolani Park and so to Honolulu.

We notice that, upon leaving the plateau, cane fields abound instead of pineapples.

Although rather tired by our short trip of only 100 miles, we hurry to carry out our plans for the evening.

Waikiki! What anticipation we feel for an evening at that legendary spot!

V-7544, A.C.

We plan to start our evening with dinner at the Royal Hawaiian Hotel and, consequently, dinner clothes are in order.

As we enter the grounds of the hotel, we are forced to gasp for, even at night, the absolute perfection of the landscaping and gardening is apparent. Both the grounds and the hotel itself are elaborate. Not a weed is to be seen on the smoothly kept lawns, and the huge palm trees abound in a manner which outdoes nature. The building itself is the largest specimen of semi-Spanish structure we have ever beheld, and everything connected with it is modern to the nth degree.

We sit at a perfectly appointed table and eat the best foods with a feeling of complete relaxation. Soft strains of music and perfect, unostentatious service deter us from rushing the ceremony of our meal.

After dinner we repair to the court and are entertained by the native music and dances or by visiting entertainers from some other portion of the Pacific. Here we learn that the hula is truly a dance of grace and is significant of the climate, the sea and the environment of the native people for ages, instead of the rather disgusting series of contortions we had previously considered it to be - from the jazz imitation usually seen in "the States."

After a little of this we saunter to the beach. On the first sight, the narrowness of the strip of coral sand is disappointing, but this feeling soon departs as the moon rises over the nearby palms and old Diamond Head. The glint of its beams on the constantly moving rollers and the surf soon start us dreaming, and the romantic nature of the setting, coupled with the sheer beauty, soon dispel any but the most pleasant thoughts and memories.

It is not long before we give an involuntary start and realize that not all our dreams are figurative. Nothing further being needed to round out a day of contentment and pleasure in living, we are well ready to retire.

Other evenings are spent in different ways. The next time we desire a modern American meal it is likely we will go to the Waialae clubhouse around Diamond Head, where we will not have the music or entertainment of the Royal Hawaiian but will view the moonlit waters of a different beach, fully as romantic as Waikiki, and look across the water to the dim outline of Molokai, some thirty miles away.

Of course, our stay in the territory would not be complete without other types of meals. The next evening takes us to one of the restaurants of Lau Yee Chai, the peer of the very best providers of Chinese food. Our ideas of noodle soup and chop suey are soon shattered upon being served a real mandarin dinner. Some of the dishes may not please us the first time we try them, but the perfection of their preparation is obvious. Long afterwards, memories of pickled shortribs, true chow mein and the many other delicacies met there for the first time will remain.

Several Japanese establishments are operated for the serving of their native dishes in proper surroundings and style. The first time we enter Ishii gardens or Ikesu's we feel very foolish at having to remove our shoes and coats - goodness, is there a hole in my socks! - and donning in their place light sandals and kimonos. Before our meal is ended our backs are tired from sitting on the scrupulously clean, matting-covered floor beside a table with legs about six inches long. We are delighted to have our "suki yaki" prepared on the table over charcoal burners by small Japanese women, the odors arising during the preparation making our mouths water. The sturdy members of our party probably essay to break the raw egg always furnished each diner over the plate of savory suki-yaki - but it does not seem just right. There are many other Japanese foods served, but suki yaki pleases the Occidental palate. The unusual surroundings and the fidgetyness, caused by the discomfort of our position, breaks down our usual reserve, and we find that each suki yaki party usually ends rather boisterously and the almost inevitable game of egg tossing terminates in minor disaster.

In addition to dinner parties, there are good moving picture houses in Honolulu, but the performances are some six months behind the same showing in the States.

Bridge is particularly delightful when indulged in on a lanai (porch) well screened from mosquitoes - because, dear reader, the rumor to the effect that there are no flies or mosquitoes in Hawaii is sadly false - with the gentle trade wind lending perfect comfort, and a view of moonlit sea available to the "dummy."

The sportsman finds three golf courses, many tennis courts, polo fields, school and army athletics of all kinds, and superlative fishing. Except at night, "still" fishing is not good. Trolling or deep water fishing are demanded, and many varieties of game fish abound, including barracuda, ono, oio, jack (three varieties - ulua, momi, and kama), dolphin, mahi-mahi, kava-kava, ava-ava, tuna, bonita (aku), and marlin swordfish. If the fisherman is willing to content himself with smaller fish, he can have ample sport with an outboard motor and a 15-to-17-foot flat-bottom boat. These may be rented at certain points. Deep sea fishing for the larger fish is rather expensive.

In the proper seasons excellent hunting may be obtained. In addition to va-

rious types of game birds - quail(on Molokai), banded doves, Chinese pheasants - Japanese deer roam the hills of Molokai, domestic sheep gone wild are to be found in Hawaii, and many wild pigs hide in the wooded slopes of nearly every island. Although the pigs are descendants of domesticated stock, they lack none of the attributes in size and fierceness of their perennially wild cousins. In fact, boar hunting is claimed as Hawaii's most dangerous sport.

Nanikuli, the most unusual bathing beach, is on the leeward of or "kona" coast of Oahu. The slope of the coral sand is so steep that once every half hour or so the undertow will hold the incoming wave stationary until a 10 or 12-foot wall of water is built up. Any bather caught in this wave, when it finally rushes in, is bound to be rolled over and over. The experience, including getting the very adherent sand out of eyes, ears, nose and mouth, causes considerable merriment, but occasionally some bather becomes too venturesome and goes too far out where a peculiarly dangerous sucking undertow is said to exist. At any rate one or two bathers drown there annually.

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HIGH DEGREE OF NAVIGATION SKILL

The preciseness with which the modern airplanes of the Army Air Corps is now being operated was demonstrated recently on a return flight to Langley Field, Va., of four B-17 Bombardment planes which were flown to Fort Riley, Kansas, for the purpose of staging a bombing exhibition for students of the Command and General Staff School and the Cavalry School. Lieut. Colonel Robert Olds, Commanding the 2nd Bombardment Group, led the flight. The three other B-17's were commanded by Majors Caleb V. Haynes, Harold L. George and Captain Neil B. Harding.

The mission was routine and, as in other such missions, valuable lessons were learned which should prove of benefit in future cooperative missions with other units.

There was nothing routine about the return flight, however. It turned out to be a very fine example of the degree of accuracy that can be obtained by good navigation and a thorough knowledge of your equipment.

Beginning at 8:00 a.m. (CST). the four B-17's cleared for Langley Field (three from Fort Riley and one from Fort Leavenworth), at five-minute intervals, with instructions to proceed to 11,000 feet at 200 miles per hour true airspeed and at a predetermined fuel flow for an assembly over Yorktown, Va., a distance of over 1100 miles from the point of take-off. At scheduled intervals, positions of each airplane were broadcast in code in latitude and longitude and plotted in the Group Commander's lead plane. At 1:30 p.m., all planes were contacted on the command frequency and directed to change the assembly point from Yorktown to Petersburg, Va., at 5,000 feet, at 2:45 p.m.

The assembly was accomplished on course and on schedule with a reduction of only three inches manifold pressure by the leading airplane and without changing course a single degree. All airplanes were landed at Langley Field at 3:20 p.m.

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AERIAL REVIEW FOR CHIEF OF THE AIR CORPS

Six Douglas B-18 Bombardment planes from Hamilton Field, Calif., passed in aerial review before Major General Oscar Westover, Chief of the Air Corps, at 7:00 o'clock on the morning of October 18th while he was on board the Army Transport "San Mihiel" in San Francisco Bay. General Westover arrived that morning from a vacation and an inspection of Air Corps activities in Hawaii.

In his honor the six Bombardment airplanes flew over the fog and, locating a break, passed over the "San Mihiel" several times at an altitude of about 500 feet. The formation was commanded by Major James G. Taylor, and was accompanied by Lieut. Colonel George E. Stratemeyer, Commanding Officer of the 7th Bombardment Group of Hamilton Field.

Officers participating in the flight, in addition to Colonel Stratemeyer and Major Taylor, were Lieuts. Chester P. Gilger, Jo K. Warner, Oliver S. Picher, A.V.P. Anderson, Willis G. Carter, James H. Wallace, Samuel V. Payne, J.J.Morrow, D.H. Walker, Troy W. Crawford, John A. Way, Harvey T. Alness and Paul C. Ashworth.

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SKEET SHOOTING POPULAR IN HAWAII

The new Skeet Range for the personnel of Luke Field, T.H., is enjoying its full share of popularity these days. Among those using the range when the 23rd Bombardment Squadron was in charge were pilots attached to the Squadron, and they ran away with all honors. Colonel M.F. Harmon, Major Laughinghouse and Lieut. Bisson were the outstanding shots in the Group. After repeated close calls, Lieut. Bisson managed to be the first to break 25 out of 25 shots. "In all fairness though," adds the News Letter Correspondent, "it must be stated that he had to take leave in order to devote all of his time to the task in hand before he was able to accomplish this feat."

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During September, the Engineering Department of the San Antonio Air Depot overhauled 18 airplanes and 35 engines and repaired 53 airplanes and 11 engines.

SCHOOL BELLS RING AT LANGLEY "TECH."

About June 20, 1937, the Langley Field Air Base was directed to set in operation a school for the enlisted men, for the purpose of teaching the basic subjects - Shop Mathematics, Mechanical Drawing and Blueprint Reading, Elements of Electricity, Elements of Metal Work, and radio code, to prepare the men taking the course for the Chanute Field entrance examination.

Many problems presented themselves in the establishment of the school, such as the selection of a teaching staff, finding suitable quarters for the school, securing equipment, and so forth; but the obstacles were sufficiently overcome so that on July 1st the Air Base Technical School opened its doors with a class of 15 men, an increment of 15 additional men being added every 15 days, and two months being allotted each class for the completion of the course. Thus, there is a continuous student body of sixty men.

The educational qualifications of the teaching staff and office force averages one year or more of college training and the instructors have proved very efficient. Since the inauguration of the school four months ago, twenty-five men have been sent to Chanute Field, and reports of their splendid progress indicate that the training they received in the basic courses at Langley Field has been most helpful.

The problem of quarters has been the most perplexing one of all. First, the Kindergarten school building was used, but when the time came for the regular Kindergarten to begin it was necessary to vacate same. The school was then moved to the old Helium Plant. This plant was not very well adapted for school purposes. Therefore, when the C.C.C. camp, which is located on the outskirts of the post, was vacated, the school moved in.

Conditions for study and instruction and plenty of building space provides an ideal set-up for the operation of the school. Of course, all has not been a bed of roses, but due to the excellent cooperation of the Squadron Commanders, post officers, teachers and students, "Langley Tech," as some wise-cracking student called it, has moved forward.

"Our motto," says the News Letter Correspondent, "is Determination and Efficiency, and these attributes are constantly brought to the attention of the students and teachers. Langley Tech bids fair to become a great asset to the post."

Permanent school personnel are as follows:

1st Lieut. Harold W. Bowman, Officer in Charge.

Corporal Joseph A. Stenglein, Noncommissioned Officer in Charge.

Privates, Specialist 6th Class, Charles W. Echols, Warren A. Stouffer, Shirley O. Batten and Dondal G. Smith, Senior Instructor, Instructor in Electricity, Instructor in Shop Mathematics and Instructor in Mechanical Drawing, respectively.

Privates, 1st Class, AM 2nd Class, Raymond D. Carter and Joseph Taglianeeti, instructors in Shop Metal and Welding and Radio Code, respectively.

Private, 1st Class, Jessie P. Daniels, Assistant Instructor in Shop Metal and Welding.

Privates Robert W. Carlstein and Robert B. Hamilton, Caretakers.

The faculty and students of Langley Tech are very fond of pets. "Pete," a Boston Bull Pup, owned by Sergeant Oldson, is official mascot. However, he had to engage in several combats with cats in order to maintain his prestige and position. "Pete" will be missed when he goes to Chanute.

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VISIT OF NOTABLE POLISH PHYSICIAN

A distinguished Polish physician, Lieut. Colonel Anthony Fiumel, Medical Corps, Polish Army, Director of the Polish Military Aero Medical Institute and Chief of the Military Aero Medical Service, honored Randolph Field and the School of Aviation Medicine with a visit on October 8th and 9th.

He came to this country - his first visit - to attend the Aero Medical Association meeting in New York and to visit the School of Aviation Medicine at Randolph Field, Texas. Flying from the east to San Antonio, he was met by a member of the faculty of the School of Aviation Medicine. After making an official call on Brigadier General James E. Chaney, Air Corps, the Commanding General of the Air Corps Training Center, he was conducted to the school.

Colonel Fiumel proved to be a most interesting visitor. He observed in great detail the work being done at the School of Aviation Medicine and was given a demonstration in each department by its Director. He was shown through the Station Hospital by the Surgeon, and the Link Trainer was demonstrated to him by an Air Corps officer. A luncheon was tendered him at the Officers' Mess, which General Chaney attended, and this was followed by a tour of Randolph Field.

Just before his departure, Colonel Fiumel honored the Faculty and the present Flight Surgeons' Class with a short address in English. One of his many accomplishments is his ability to speak five languages, and the address in English was all the more remarkable, since he had but ten lessons in this language prior to sailing for America.

"Colonel Fiumel is one of the most stimulating characters it has ever been our pleasure to meet," declares the News

Letter Correspondent. "He is amicable, unassuming, holds one's attention in an easy manner and possesses a keen sense of humor. One of his observations to the press is as follows: 'I find the United States a nation of business men who work hard and obtain fine results. Your people do not talk much but their hard work reveals their fine character.'

The mutual exchange of ideas with representatives of foreign countries is a valuable aid to the progress of aviation medicine. We hope Colonel Fiumel returns soon."

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B.S. DEGREES FOR WEST POINT GRADUATES

A letter sent recently to all Army activities by the War Department invites attention to the provisions of Public 189, 75th Congress, approved July 8, 1937, authorizing the Superintendent of the United States Military Academy to send certificates conferring the Degree of Bachelor of Science on all living graduates of the United States Military Academy who are still in the service, active and retired, without application therefor.

The Superintendent of the Military Academy is desirous of advising all those graduates who are no longer in the service to apply for their certificates to him, giving the exact mailing address to which the certificate is to be sent. He also makes the request that Army officers communicate the above information to any Military Academy graduate not now in the service whose address is known.

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SCHOOL OPPORTUNITIES FOR RESERVE OFFICERS

Beginning with the Fiscal Year 1939, the War Department proposes to send a limited number of Air Reserve officers residing within the continental limits of the United States for an eight weeks' course at the Air Corps Tactical School at Maxwell Field, Ala. The exact number of students (depending on available appropriations) and period during which instruction will be conducted will be announced later.

Air Reserve officers selected to take this course of instruction shall be Captains, not more than 40 years of age, who have completed the subcourses requisite for promotion to the grade of major. Preference will be given those who have been on extended active duty with the Air Corps and who are otherwise qualified for taking the course.

Since this course of instruction has not been available to Air Reserve officers, the War Department desires that Corps Area Commanders cause every effort to be made to qualify as many as possible so that there will be an adequate number of eligibles from which to make selections.

THE SPECIAL TECHNICAL SCHOOL EDITION

Very favorable comments have been received from all sides on the excellence of the Special Technical School Edition of the Air Corps News Letter of November 10, 1937.

All of the work connected with the preparation and printing of this special edition was done at Chanute Field, Ill., and hearty congratulations are extended to all those who had a hand in this most worthwhile effort.

To put it briefly, this special edition tells all about the Air Corps Technical School at Chanute Field, and it does so not only through the printed word but, what is still more desirable, through the medium of a series of most interesting photographs - real action pictures which the editors of pictorial magazines love so well.

There is a slogan in the advertising field to the effect that "Pictures Make Sales." If such is the case, then this special edition of the News Letter should be the cause of the Air Corps Technical School easily selling itself to any reader of the News Letter, particularly one interested in entering a field of endeavor in one or more of the mechanical phases allied to aviation.

This Special Technical School edition is a souvenir well worth having, and the sincere thanks and appreciation of the Information Division, Office of the Chief of the Air Corps, is extended to the Commandant of the Technical School, the Assistant Commandant, and all others who contributed toward its production. It is felt that the sentiments of the Information Division in this matter are shared by the entire Air Corps.

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88TH SQUADRON RELINQUISHES ITS O-35's

The 88th Reconnaissance Squadron at Hamilton Field, Calif., is losing its three O-35 Douglas Observation airplanes. These bi-motored, high wing, gull type monoplanes are the oldest tactical type in the GHQ Air Force. They were manufactured in 1932, came to tactical service in 1933, and have been in continued service ever since. They are going to the Advanced Flying School, Kelly Field, where they will be used for advanced training in bi-motored aircraft.

"The continued operation of these airplanes," declared the News Letter Correspondent, "reflects credit upon the officers and enlisted personnel of the Squadron, in that the careful operation on the part of the pilots and the excellent quality of workmanship on the part of the ground crews has been the principal factor in the prolonged life of these airplanes and, in view of the fact that they are flown on an average of four and five hours per day, this is an excellent record.

AMERICA SPREADS HER WINGS

A booklet recently published by the Works Progress Administration, artistically illustrated by diagrams, charts and photographs (many of the latter furnished by the Air Corps) tells a graphic story of the airport and other work accomplished in the past few years through the Federal Works Program.

The charts in this booklet are prepared in a manner such as to give at a glance statistics covering the development of air transportation, aircraft construction, airport construction, various aids introduced to promote safety in flying, etc. From these charts the following facts are gleaned:

Airline passengers, who numbered 150,000 in the year 1929, grew to almost 500,000 in 1932, and to almost 1,050,000 in 1936.

Airline route mileage increased from 8,252 in 1926 to 24,864 in 1929; 28,550 in 1932, and to 23,814 in 1936.

The growth of air express and air mail was truly remarkable. From 300,000 pounds of air express in 1929, the figures mounted to one million pounds in 1932 and to seven million pounds in 1936. From approximately 250,000 pounds of air mail transported in 1926, the figures grew to 7,000,000 pounds in 1929, 9 million pounds in 1931, and approximately 16,500,000 pounds in 1936.

Aircraft passenger miles multiplied from 84,014,572 in 1930 to 127,038,798 in 1932 and to 435,502,283 in 1936.

The number of airports grew from 1,000 in 1927 to 1,500 in 1930, to 2,000 in 1933 and to 2,500 in 1936.

The number of miles of lighted airways jumped from 4,000 in 1927 to almost four times that number in 1930; to almost 20,000 miles in 1933, and to 22,000 miles in 1936.

Radio range stations increased from 30 in 1930 to almost 100 in 1936 and to 150 in 1936.

The 3,000 miles of teletype weather service in 1929 grew to about 11,500 miles in 1934 and to 13,000 miles in 1936.

The number of commercial aircraft in the United States increased considerably between the years 1927 and 1934. With less than 1,500 aircraft in 1927, the statistics for 1934 show 8,000 in 1934 and 9,000 in 1936.

In 1927 there were not quite 2,000 licensed pilots in commercial aviation in this country. This number grew to 14,000 in 1933 and to 16,000 in 1936. The number of students undergoing flying instruction increased from less than 1,000 in 1927 to 13,000 in 1929 and to 32,000 in 1936.

In connection with the advances made in the speed of aircraft, the charts show that in 1926, the average length of runways was 1,500 feet, as compared with 2,500 feet in 1933 and 5,000 feet in 1936. Aircraft speed increased from a cruising speed of about 100 miles per hour and a top speed of less than 135 miles per hour, to a cruising speed of about 150 miles per hour and a top speed of over 200 miles per hour in 1936. The first set of figures were those for 1927.

In 1936, commercial air liners carried 21 passengers, as against 14 in 1934, 10 in 1933 and 4 in airplanes of 1926 vintage.

The weight of airplanes increased from 4,000 pounds in 1927 to 17,000 pounds in 1930, to 18,000 pounds in 1934, and 32,000 pounds in 1936.

Oil consumption in aircraft operation increased from 300,000 gallons in 1929 to about 750,000 in 1932 and to 900,000 gallons in 1936. Gasoline consumption rose from 6,000,000 gallons in 1927 to 24,000,000 gallons in 1932. and to about 33,000,000 gallons in 1936.

Of each WPA dollar expended to December 1, 1936, 32.2¢ went for materials and equipment and 67.8¢ for labor. Sponsors have contributed 9.7¢ of each dollar expended on aviation projects, and of this contribution, 83.8¢ went for materials and the remaining 16.2¢ for labor.

The photographs interspersed throughout this booklet show how various air markers are placed on buildings and grounds; also some of the super air terminals in this country, major airports, airports at lake and recreation parks, examples of work done to improve American airports; various hangars and terminal buildings; lighting beacons, and groups of students attending ground school classes in practical aeronautics - one of the air education projects of WPA.

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Major Caleb V. Haynes and Lieut. Curtis E. LeMay, of the 49th Bombardment Squadron, Langley Field, Va., and Mr. MacAvoy, of the National Advisory Committee for Aeronautics, after attending an informal engineering conference at Wright Field, Dayton, Ohio, returned to Langley Field in B-17 No. 80 in the remarkable time of one hour and 45 minutes.

Bolling Field recently received deliver of ten BT-9B's from the North American factory at Inglewood, Calif. These two-place airplanes are capable of more than 150 miles per hour.

The Northwest-Southeast runway at Bolli Field is being made about 200 feet longer.

hangar and operates from the adjacent field, known as Langley Field No. 2. Because of no boundary lights around this field, night flying in the past was conducted from the main field, thus necessitating take-off from Langley No. 2 before dark and parking the airplanes overnight in a hangar on the main field. This inconvenience has been overcome by the use of oil pots to mark out the runway and using the flood lights on the balloon hangar. This arrangement has proven very satisfactory for night operation. All pilots in the 37th have requalified in instrument flying for the fiscal year.

21st Reconnaissance Squadron: Four officers and six enlisted men of this organization ferried two B-18 planes from the Douglas Aircraft Factory, Santa Monica, Calif., viz: Major Hugh C. Downey, 1st Lieut. Draper F. Henry, Air Corps, 2nd Lieuts. Lloyd Eyre and Charles W. Bicking, Air Reserve; Staff Sergeants Houston Alexander, Arthur C. Barker, Robert L. Mullen, Frederick R. Relyea; Privates 1st Cl. William A. Lentz, Jr. and Harold D. Sprecher.

The Squadron now has a total of four of the B-18 type airplanes, two of which were loaned to the 18th Reconnaissance Squadron at Mitchel Field, N.Y.

The following-named enlisted men recently graduated and were returned from the schools indicated:

Sergeant George W. Hollowell, Jr., from the Middletown Air Depot, Pa., "Instrument Mechanics Course."

Private 1st Cl. Thomas C. Osmundson from Air Corps Technical School, Chanute Field, Ill., "Radio Repairers and Operators Course."

Private Belfort D. Bossert, from School for Bakers and Cooks, Fort George G. Meade, Md., "Cook's Course."

Fort Lewis, Wash., October 6th.

Major and Mrs. Guy H. Gale and Lieut. and Mrs. Dale E. Altman, (Are Res.) are new arrivals at Fort Lewis. Major Gale assumed command of the 91st Observation Squadron, relieving Major Guy L. McNeil, who is under orders for assignment to the Philippine Department. We are very pleased to have these new officers with us.

Advanced Flying School, Kelly Field, Oct. 21st.

Nine officers of the Air Reserve were ordered to active duty at Kelly Field to take a refresher course. Second Lieuts. Stewart H. Murphy, Victor F. Pixey, Elmer L. Parsel, Bernard M. Lloyd and Marden M. Munn were assigned to the Attack Section for flying instruction and attached to the 63rd School Squadron for instruction in Squadron Duties of Junior Officers. Second Lieuts. Hugh O'Daniel, Roger B. Whitaker, Donald K. Fargo and M.C. Weir were assigned to the Pursuit Section for flying instruction and attached to the 61st School Squadron for instruction in Squadron Duties of Junior Officers. Their course of instruction will last approximately seven weeks.

Texas and California lead the States of the Union in the Advanced Flying School. Texas has eight students and California seven in the new class. Pennsylvania and Washington are each represented by four students; Illinois, Kansas, Ohio, Virginia and Wisconsin by three; Colorado, Florida, Louisiana, Massachusetts, New York and Oregon, two each; Indiana, Connecticut, Idaho, Kentucky, Missouri, Minnesota, Oklahoma, South Dakota, Tennessee and District of Columbia, one each. Brazil and Mexico have sent one student each for training.

Two officers of the garrison at Kelly Field received promotions this month, Major Lester T. Miller to Lieut. Colonel and Captain Clarence E. Crumrine to Major, effective October 12th. Colonel Miller graduated from the Air Corps Training Center on October 6th, having acquired his fourth flying rating, that of Airplane Pilot. Upon graduation, he was assigned to the 62nd School Squadron, and assumed command. In addition to his other duties, he was detailed Director of Ground School and Post and Troop School Officer. Major Crumrine remains in command of the 61st School Squadron.

Major Arthur G. Liggett was transferred to Randolph Field on October 20th. He arrived at Kelly Field on October 15, 1936. During his tour of duty here he commanded the 40th Attack Squadron, the designation of which was later changed to the 63rd School Squadron. He has also acted as Director of Ground Training and as Post and Troop School Officer.

Brigadier General Asa L. Singleton, Commanding General of the Infantry School, Fort Benning, arrived by air October 19th from Maxwell Field to observe maneuvers of the proposed new Infantry Division at Fort Sam Houston. He made the flight in a C-30, piloted by Captain Roland Birnn.

Advanced Flying School, Kelly Field, Nov. 5th.

First Lieuts. A.W. Kissner and B.J. Webster left November 2nd in a BT-8 for the Middletown Air Depot, Pa., to enable Lieut. Webster to pick up another BT-8 to ferry to this station.

On October 27th, Lieut. Colonel Lester T. Miller was transferred to Duncan Field, Texas.

Major Albert B. Pitts was relieved from detail as Post Signal and Communications Officer and detailed as Director of Ground Training and Pos and Troop School Officer. These duties were previously performed by Lieut. Colonel L.T. Miller.

Captain Ralph E. Holmes was assigned as Post Signal and Communications Officer, relieving Major Albert B. Pitts.

On November 1st, Lieut. W.L. Kennedy was relieved from duty as flying instructor in the Observation Section to assume the duties of Commandant of Cadets, relieving Captain Ralph E. Holmes.

Orders assigning 2nd Lieut. J.K. Arnold to the Philippine Department were revoked on October 27th, he being assigned to duty at Brooks Field. He was a member of the class which graduated from the Advanced Flying School on October 6th.

First Lieut. Bruce Von G. Scott transferred from Kelly Field to Randolph Field on November 1st. Lieut. Scott was formerly a flying instructor in the Attack Section of the Advanced Flying School. He also performed the duties of Officer in Charge of the Kelly Field Officers' Mess.

San Antonio Air Depot, Duncan Field, Tex. 10/21

Recent transport service flights by personnel of this Depot included the following: Lieut. Colonel Henry J.F. Miller, Depot Commander, and Lieut. Max H. Warren, 3rd Transport Squadron Commander, with Pvt. Hetherington of that Squadron as mechanic, in a C-33 to the Fairfield Air Depot Ohio, and return, Oct. 14-20; Lieut. Thomas B. McDonald, Assistant Depot Supply Officer, and Lieut. Warren in a C-33 to the Rockwell Air Depot, Calif., and return, Oct. 7-8; Lieut. Claire B. Collier, Depot Adjutant, as co-pilot, with Staff Sgt. Tyler, pilot, and Corp. Solomon, mechanic, in a C-33, departing October 20th for the Lockheed Plant at Los Angeles and the Rockwell Air Depot; and Lieut. Paul S. Blair, pilot, with Tech. Sgt. Jackson, co-pilot, and Staff Sgt. Riley, mechanic, to the Fairfield Air Depot, thence ferrying a C-33 to Brooks Field, October 14-16.

Lieut. Colonel Morris Berman, Assistant Executive of the Materiel Division, Wright Field, and formerly Executive Officer of this Depot, visited here October 5-7, enroute returning to Wright Field from a cross-country tour of the Air Depots, conferring on personnel matters.

Lieut. Tracy K. Dorsett, pilot, and Lieut. L.P. Kleinoeder, co-pilot, with Sgt. Cole, mechanic, of the 3rd Transport Squadron, made a round trip flight in a C-33 Transport to Los Angeles, Calif., and return, Oct. 12-17, accompanied by Capt. Charles L. Leedham, M.C., of the School of Aviation Medicine, Randolph Field, as passenger, Certain medical supplies and equipment from Randolph Field were transported for exhibition and demonstrations at the annual meeting of the Association of Military Surgeons at Los Angeles.

Private Andrew J. Hewitt joined the 3rd Transport Squadron for duty, Oct. 18th, having enlisted for the Squadron on October 11th at Hamilton Field, Calif. Private 1st Cl. Robert C. Gray was honorably discharged from the 3rd Transport Squadron Oct. 19th, intending to enter commercial aviation employment.

The many friends of Albert S. Anderson, clerk in the Depot Supply Department, this Depot, mourn his death, which occurred on October 20th after a lingering illness. Mr. Anderson had a long record of faithful and efficient service, having been in the Civil Service for approximately the past twenty years, serving first at Fort Sam Houston, and entering employment at this Depot on April 1, 1926. Surviving him are his widow, of this city, a son and two daughters.

San Antonio Air Depot, November 5th.

During a visit to this vicinity, Mr. Wright, President of the Wright Aeronautical Corporation, called at this Depot Oct. 29th to confer with the Commanding Officer and the Chief Engineering Officer on matters pertaining to Wright engines and other equipment.

A hearty welcome is extended to Lieut. Col. Lester T. Miller and family as the newest members of the Depot's official circle. Col. Miller was transferred to this Depot on November 1st, and assigned as Commanding Officer of the 3rd Transport Squadron.

Air Corps officers recently visiting this Depot by air included Lt. Col. Carl Spatz, of Langley Field, Oct. 23-24, enroute returning to that station from March Field, Calif., in an A-17; Major John K. Cannon, Oct. 25, enroute to March Field in a B-18 from Randolph Field; Major Fred S. Borum and Capt. Carl J. Crane, of the Materiel Division, Wright Field, Nov. 1-2, in a C-33, enroute from Wright Field to March Field; Lieut. L.D. Fator in a B-10, Nov. 3-4, returning to March Field from Randolph Field.

Lieut. Colonel Henry J.F. Miller, Commanding Officer of this Depot; Major E.D. Perrin, Chief Engineering Officer, and Lieut. J. Will Campbell, Assistant Depot Supply Officer, flew to Hensley Field, Texas; Oklahoma City and Fort Sill, Okla.; Lowry Field, Denver, Colo., and Fort Bliss, Texas, and return, Nov. 1-3, to confer on Air Corps engineering and supply activities at those stations.

Second Lieut. Claire B. Collier, Air Res., on extended active duty with the 3rd Transport Squadron, and Adjutant of the Depot, was promoted to 1st Lieut., Air Res., November 4th.

The 3rd Transport Squadron lost Pvt. 1st Cl. Eddie Dupree, discharged by purchase Oct. 21st, and gained Pvt. Robert J. Cummings, transferred from Hq. and Hq. Squadron, Kelly Field, Nov. 4th.

Recent interdepot transport service trips by Depot personnel included: Lt. C.B. Collier, co-pilot, with Staff Sgt. Tyler, pilot, and Pvt. 1st Cl. Baker, mechanic, to Los Angeles, Calif., and the Rockwell Air Depot, Calif. and return, Oct. 28-31; Lt. J. Will Campbell, co-pilot, with Tech. Sgt. Jackson, pilot, and Corp. Hansen, mechanic, to the Fairfield Air Depot, Ohio, and Middletown Air Depot, Pa., and return, Oct. 24-26; Lieuts. T.K. Dorsett and L.P. Kleinoeder, as pilot and co-pilot, with Corp. Solomon, mechanic, to the Fairfield Air Depot and return, Oct. 26-28; Lieut. P.S. Blair, co-pilot, with Master Sgt. C.P. Smith, pilot, and Pvt. 1st Cl. Vostel, mechanic, to Inglewood, Calif., and the Rockwell Air Depot, and return, Oct. 23-25; and Lieut. Blair, co-pilot, with Master Sgt. Smith, pilot, and Staff Sgt. Riley, mechanic, to the Fairfield and Middletown Air Depots and return, Nov. 2-5.

Luke Field, T.H., Sept. 30th.

4th Obs. Squadron: The Squadron was rather busy the past two weeks making preparations for the visit of the Technical Inspector from the Office of the Chief of the Air Corps. The last inspection by the Chief's representative was made about 1932, so we have lots of forms and records to be inspected.

Considerable maintenance work was required recently, what with planes attached from Wing Navigation School, engine changes and other unforeseen difficulties of a mechanical nature. We hope to be in the clear and back to normal activities soon.

23rd Bombardment Squadron: This Squadron has really missed its two most recently departed officers, namely, Lieuts. Capp and Coddington, who filled an important spot in all squadron activities.

The recent restriction on pilots for multi-motored airplanes has put this Squadron on the spot. As the majority of pilots in the 23rd are junior officers, we find that only a select few are privileged to fly our Martin B-12's.

This keeps the rest of the Squadron in the air constantly carrying on with the training program. The younger pilots have gone back to their "first love," the old faithful Keystones, and are giving them the biggest workout they have had for many a day.

Major Beaton and the C-33 have settled down to a steady routine of inter-island flights, and at the present rate will soon offer serious competition to Inter-Island Airways commercial run.

The moving bee seems to have stung most of the officer personnel of the Squadron. Shortly after a shake-up and change of quarters had begun on the post itself, most of the officers living on commutation decided that a change of scenery was desirable. Lieut. Mitchell was given the key to Pearl City and promptly moved into one of its newest houses, so now he can have that extra snooze before dashing for a ferry. Lieut. Bateman, already in Pearl City, found a more suitable house for his recently enlarged family, and lost little time in getting settled. Lieut. Simons turned his back on the beauties of Waikiki and moved into a new house at the base of Alewa Heights.

Squadron activities, consisting of an intensive session of aerial gunnery for the combat crews, have been keeping all members of this squadron pretty much on their toes.

50th Observation Squadron: Another change of personnel in the 50th Squadron greeted us upon our arrival from Waimanalo. Major John I. Moore, who arrived Sept. 4th, was attached to the Squadron for flying training. Captain Homer W. Ferguson joined the Squadron and assumed command Sept. 4th. Master Sgt. Joseph Bohrat reported for duty on the same date.

The gunnery season at Waimanalo, completed Sept. 15th, was much enjoyed by the personnel, with the exception of the special duty men who merely had the opportunity to come to camp, shoot, and return to Luke Field all during the same day. These men had the misfortune of not being able to attend the Squadron's Organization Day, which was celebrated Sept. 13th. On that day, soft ball games took up the full morning, and furnished plenty of entertainment. There was plenty of hard hitting, and the most remarkable base running imaginable. The scores of these games were recorded, but there was not much interest in the game from third to the home plate as from home to third, the "hot corner" being the goal of most every batter.

72nd Bombardment Squadron: A Quarterly Load Test on six airplanes was held on Sept. 16th. Ships tested were four Keystones and two Martins. The Keystones were at Bellows Field when regular test was held. The Martins were loaned to the 23rd Squadron and were out of commission during the test. With a few minor exceptions, all planes and equipment performed satisfactorily.

The two Master Sergeants, Kashe and Magaha, recent arrivals, the former from Langley and the latter from Selfridge Field, were assigned, respectively, to the jobs of Line Chief and Squadron Inspector. Tech. Sgt. Akers was assigned as Flight Chief. He came from Randolph Field.

First Lieut. Paul E. Ruestow is passing out cigars as the result of the arrival of a potential Air Corps officer in his family.

Lieuts. J.G. Armstrong and N.L. Callish are the next officers to return to the Mainland from this Squadron, they having been ordered to Hamilton Field.

Staff Sgt. Rose leaves for Barksdale Field on the next Transport.

Wheeler Field, T.H., Sept. 30th.

19th Pursuit Squadron: The Squadron has had an influx of new blood in its pilot section. Second Lieut. E.S. Allee and Master Sgt. J.A. Kolb (enlisted pilot) arrived on the U.S.Army Transport REPUBLIC Sept. 4th. Lieut. Allee comes from Chanute Field, where he attended the Communications course the past year. Previous to that time he was stationed at Selfridge Field for two years, also at Langley Field. He is a member of the Class of Kelly's 33. Sergeant Kolb comes from Selfridge Field, where he was Group Inspector for the past four years. He is a graduate of Kelly '32, where he went through in grade.

The 19th is also the recipient of two transferees, Lieuts. Donald W. Titus and E.Patteson. The former comes from the Hawaiian Air Depot, where he was Depot Supply Officer since January, 1937. Lieut. Titus is Academy '28 and Kelly '30. Lieut. Patteson comes from the 26th Attack Squadron, Wheeler Field, where he was assigned since June, 1937. He graduated from Kelly Field in 1929.

Maxwell Field, Ala., October 20th.

Captain Pratt, accompanied by Staff Sgt.Lucas and Corp. Davidson, returned from their photographic mission at Wilson Dam, Muscle Shoals, Ala., on October 9th.

Staff Sgt. Frey, our Post Sergeant Major, departed on a 30-day furlough.

Staff Sgt. Goodrich went on cross-country to Bolling Field, D.C., as crew chief on the B-10 on Oct. 14th, and returned on the 16th. Sgts. Auman and Vandergrift, and Pvt. Spain went on cross-country to Eglin Field, Fla., on Oct. 14, on duty in connection with the Air Corps Tactical School Bombing and Gunnery exercise conducted at that station on the 15th and 16th.

Staff Sgt. Morris departed Oct. 18th for his new station, Chanute Field, Ill. He made a mutual transfer with Staff Sgt. Wiedaw, of the 10th Air Base Squadron, at Chanute Field. The latter was stationed here prior to his tour of service in Panama, and has been at the Air Corps Tactical School from 1928 up to his foreign service tour in 1934.

Privates 1st Cl. Meiners and Deaux were discharged and reenlisted to fill their own vacancies on the 9th and 17th, respectively. The former is on duty with the reproduction section of the Air Corps Tactical School, and the latter is in charge of the local telegraph office.

Pvt. Kelly was discharged on the 15th to reenlist for the Air Corps in a locality of palms and Hawaiian music.

The command went into woolens on Oct. 18th, and they have felt very comfortable, too, due to the slight change in the weather. The woolen uniform is somewhat of a perplexing problem to our newest additions to the Squadron, due to the fact that after the recent change from breeches

and leggins to trousers for the Air Corps troops, the issue of woolen breeches was no longer made and our requisition for the elastic trousers has not as yet been filled, so those men who recently joined are still wearing the cotton O.D. trousers.

13th Air Base Squadron: Sergeant Kenneth M. Welborn was discharged on October 7th to accept an appointment as Flying Cadet. He has been ordered to the Air Corps Training Center. Everyone is hoping he graduates with his wings and bars.

Corporal Rose and Private Horne have returned to duty from Chanute Field where they "pursued" the course for radio repairers and operators. By the looks of the certificates issued them upon completion of the course, they did right well by themselves.

New Squadron additions are Privates Young, Seidel and Nix from Panama, and Mayfield, transferred from the medicos.

No wonder Sergeant Millstead, who is drilling the recruits, is getting grayer and grayer. The other morning after "hablaing" to them about service customs he asked Pvt. Clem Kirk what a fogie was. Kirk scratched his noggin a bit and said that a fogie was a cheap cigar.

Sarge Leeper, the Squadron "baby" Staff, went on pass the other day. When asked if he was going to sign up in the matrimonial league, he replied in the negative with attendant expletives. However, in the same breath, he asked the squadron clerk to write a request for him for commissary privileges.

Kicado, Rocklin, Cox, Joyner, Post and Moore are warming up on the new bowling alleys in Montgomery. Here's hoping that when the League starts they all "strike out." Haven't heard much as to what their averages are, but the grapevine says they all throw a wicked ball and should give a good account of themselves when they commence heaving them down the alley "for record."

Hamilton Field, Calif., October, 1937.

Master Sergeant Harry J. Rickliff, who has been in the 88th Reconnaissance Squadron since September, was transferred to the 82nd Observation Squadron at Moffett Field, his old outfit when he was previously stationed at Brooks Field, Texas. Sergeant Rickliff will be replaced by Master Sergeant Ernest Brown, who has been stationed in Hawaii.

Master Sergeant Louis B. Flynn, 88th Reconnaissance Squadron, was transferred to the Philippine Department. He has been in the Army since the World War and spent eleven years in the 88th Reconnaissance Squadron. He has been line and hangar chief in the Squadron for the past 2 years and 4 months.

The 9th Bombardment Squadron, 7th Bombardment Group, held its organization celebration recently at Oak Grove, Sonoma, Calif. A very good chicken dinner was served, followed by various athletic events, then a picnic supper and dance in the evening. The entire Squadron, both enlisted men and officers and families, were present. The usual softball game for supremacy between the officers and enlisted men was held, and after a hard fought game the officers won by a score of 10 to 9, despite Corporal Van der Werken's best opposition, using the chief of police's cap for authority.

Recent requirements regarding flying qualifications have necessitated a deviation from the usual flying procedure. Until such time as they are qualified to use both, co-pilots are flying B-18's on one engine, in order to build up their time for multi-motored equipment. Of course, qualified pilots take off and land the plane on two engines, but turn the ship over to the co-pilot in the air for single motor flying.

The fact that the 7th Bombardment Group is conducting extensive single engine performance tests, of course, is of considerable aid in effecting the above qualifications.

Seven men from Northern California were recently enlisted at Hamilton Field as Flying Cadets to undergo training at the Air Corps Training Center, Randolph Field, Texas. These men were selected as the result of a competitive examination held in August at Hamilton Field and other Army posts.

Two Hamilton Field officers recently promoted were Captain Oliver K. Robbins, Air Corps, Post Exchange Officer, to Major, and Major Walter D. Vail, Dental Corps, to Lieut. Colonel.

Among distinguished visitors at the field recently were Major General Oscar Westover, Chief of the Air Corps, and Brigadier General Delos C. Emmons, Commanding General of the First Wing of the GHQ Air Force at March Field. General Westover came in from Pearson Field, Wash., in a Douglas B-18, the purpose of his visit being to attend the conference of the Western Aviation Planning Council at Sacramento, Calif. Generals Westover and Emmons paid a flying visit to the Oakland Airport, where the former addressed a Reserve Officers' Convention.

Major Augustus S. Harrison, QMC, and Warrant Officer Daniel W. Fraley, U.S.A., reported for duty from the Hawaiian Department. Major Harrison will be the post quartermaster, augmenting that vital service at Hamilton Field, which has been virtually swamped through the great activity of the GHQ Air Force. Warrant Officer Fraley will likewise become a link in the supply chain, as he has been assigned to the duty of chief clerk in the Air Corps supply, where he will deal with the procurement of all aeronautical equipment in use by the GHQ Air Force at Hamilton Field.

Upon his retirement from the service after having completed over 35 years' active duty, Master Sergeant Marion G. Putnam was advanced on the retired list to the rank of Captain. He held a commission as such during the World War. Captain and Mrs. Putnam will reside in Dallas, Texas.

Chanute Field, Ill., October, 1937.

10th Air Base Squadron: The Squadron personnel recently held their annual picnic and outing at Homer Park. Approximately 200 attended, including wives and families. Softball, horseshoes and volley ball were played. There were plenty of eats and liquid refreshments for all.

2nd School Squadron: In the busy turmoil of getting ready for school, the Squadron gained 16 students since the first of September, 1937. Most of them are settled, and the daily routine and schedule is running smoothly once again.

KEEPING FIT

Langley Field — The Basketball season is well under way at Langley these days, and the 33rd Pursuit Squadron is right in the middle of it with a very capable team. Sergeant Croak has been putting his charges through the paces, and before the season is over the ole score board should show a big percentage of wins.

The 35th Pursuit Squadron softball team, under the able management of Corp. E.C.Ackerman, wound up the season by a decisive win over the Q.M. Detachment to place third in the intramural league. We now turn our attention to basketball and the prospects look bright, the team starting the season nicely by winning the first two games.

In the Hqrs. and Hqrs. Squadron, 2nd Bombardment Group, athletics received a great deal of interest lately with the organization of bowling and basketball teams. The softball team has continued to meet with success, having recently added two games to the win column.

The 36th Pursuit Squadron wound up a swift-moving softball season by emerging second only to the Third Observation outfit. The completion of the scheduled season found the 36th the runner-up, and called for a five-game play-off. All five were tightly contested, and the fifth and deciding game was dropped by the meager margin of 2 to 1.

The promotion dinner for 1st Sgt. Ernst and Staff Sgt. Booth provided an excellent opportunity to present the attractive trophy so ably won by the softball team. And a ball game with the officers provided an excellent opportunity for removal of the sting of being edged out of the championship. The sting was adequately removed to the tune of 5 to 1.

Chanute Field — Playing a long, hard schedule, the Chanute baseball team experienced a very successful season when it is remembered that the opposing teams were all of high caliber. The team won six and lost the same number, for a flat .500 average. Members of this year's team were: Sgt. Burnett, Corps. Kracman, Gotsch, Pvts. Worley, Marten, Petts, Berg and Schleicher from the 1st School Squadron; Pvt. Rosen from the 2nd School Squadron; and Pvts. Grunert, Wheat, Loranger, Howell, Wilson and Walsh from Hqrs. and Hqrs. Squadron.

The team's leading hitter, Private Rosen, batted 464 for the season. In recognition of the splendid spirit and fine work done by the team, a suitable award will be made by the Post Athletic Officer.

Well! Well! Well! The Post Basketball League got into full swing on October 4th and, believe it or not, Hqrs. and Hqrs. Squadron promptly took us, the Post Champs (10th Air Base Sqdn.) down the line to the tune of a 35 to 33 score. Maybe they forgot that we won the Post Championship last year and didn't notice that we had nice new uniforms, sweat shirts and all..... Really were nice looking uniforms, Royal Blue and Light Gold. But the only thing we had after the game was the uniforms...Probably will have a good effect on the squad and they will settle down and play better ball next time.

The Post Bowling League opened up October 5th, with the 10th Air Base Squadron meeting the First School Squadron. Only remnants of last year's teams are left, so it looks like it will be a real race with the Officers' Team having the edge.

The First School Squadron won the Post Baseball Championship this year and now, even though considered a dark horse at the start of the season, is out for the Post Basketball Championship. Right now we are tied with the Tenth Air Base Squadron for first place.

Luke Field — At the present time it looks as though the 4th Obs. Squadron has produced another championship basketball team. The Squadron League is half over and, under the able guidance of Sergeant Sadler, who has been unanimously acclaimed as one of the best guards in the Hawaiian Department for the past seven years, the 4th has romped through the first half without the loss of a single game. The toughest game to date was with the 72nd Giants whom they defeated by a margin of 14 points.

Bolling Field, D.C., Nov. 2nd.

Lieut. Colonel Wm. Ord Ryan, Commanding Officer, just returned from an extended cross-country flight to the North American factory, Inglewood, Calif., to which point he ferried an A-17 airplane assigned to the Chief of the Air Corps.

Bolling Field recently received delivery of ten BT-9B's from the North American factory. They are two-place airplanes capable of more than 150 miles per hour.

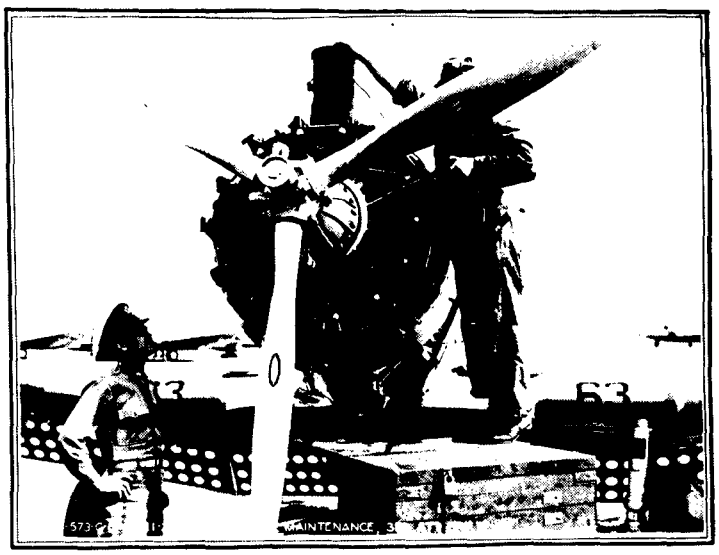
Among the distinguished visitors at this field recently were Major General Frank M. Andrews, Chief of the GHQ Air Force; Colonel J.W. Jones, Commanding Officer of Chanute Field, Ill., and Colonel T.J. Hanley, Jr., from Mitchel Field, N.Y.

The Northwest-Southeast runway at this field is in the process of being made about 200 feet longer.

Bolling Field again is well represented this year at the various night schools in and around Washington. Most of the men at the post are looking ahead for a better education while stationed here. Among the institutions being attended are accounting and business schools. It has also been noticed that the men at this station are devoting most of their spare time in many correspondence courses offered by some of the leading institutions in the country.

The Post Intra-Squadron Basketball League, which began on Monday, October 18th, 1937, is now well under way. The 1st Platoon of the 14th Air Base Squadron is leading the League by one game and is closely followed by the 2nd Platoon of the same organization. The Post Team will be selected from the best players in the Intra-Squadron League. Bolling has many ex-high school stars out for basketball this year, and many more promising players. With an early start and plenty of material to pick from, Bolling will have one of the best teams turned out so far, and among the leaders in the Corps Area League.

air corps NEWS LETTER



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PRESENTATION OF THE COLOMBIAN AND LUKE MEMORIAL TROPHIES

By Private Harvey N. Finger

IN a very impressive ceremony, before the assembled 3rd Attack and 20th Pursuit Groups and some fifteen thousand spectators, Major General Frank M. Andrews, Commanding General of the GHQ Air Force, presented the Colombian and Luke Memorial Trophies to the 3rd Attack Group and the 77th Pursuit Squadron, respectively.

The presentation took place at Barksdale Field, La., on Sunday afternoon, November 21, 1937, and was without doubt the most outstanding event since the dedication of the field. The event had been given wide publicity and was anticipated for weeks by the citizens of the Ark-La-Tex area.

In presenting the Colombian Trophy, General Andrews said:

"The Third Attack Group is the winner of the Colombian Trophy for the second consecutive year. Let me remind you that this beautiful trophy, handwrought in pure silver, was presented to the GHQ Air Force by a representative of the Air Force of the Republic of Colombia in order to cement more firmly the spirit of friendship between the two American Republics, and to express the feeling of comradeship which exists among fliers of all nations.

"Each year this trophy is awarded to the group of the GHQ Air Force which has the lowest accident rate per thousand flying hours for the preceding training year. During the past year, the Third Attack Group had but four minor accidents out of a total flying time of over 23,000 hours. Only one injury was sustained, and that was minor in nature. This excellent record was approached by only one other group - the 8th Pursuit - which had a total of six minor accidents. I regret to state that all other groups had at least one fatal accident.

"However, it is very gratifying to note that the accident rate in 1937 for the entire GHQ Air Force was just about one-third less than it was for 1936. This indicates that accidents can be reduced if sensible policies are intelligently and energetically carried out by tactical units. And so, every one of us can rightly share a feeling of pride over a task well done.

"I feel that no small measure of credit is due to the Colombian Trophy, which serves not only as an added incentive to officers and men of the combat units, but which helps to make all of us conscious of the extreme care which must be exercised in every phase of supervision, maintenance, and operation of aircraft. Supervisory personnel, the pilots themselves, and every enlisted man who performs some task having to do with the operation and maintenance of the airplane and its equipment - all have a joint responsibility in the matter of accident prevention.

"I think it is well to point out that each succeeding year, with the closer airdrome control of modern operations, sees the growing responsibility of supervisory personnel. Therefore, the award of this trophy to the Third Attack Group indicates not only a high order of efficiency of its former commander, Lieut. Colonel Earl L. Naiden, and of every officer and enlisted man in that Group, but also reflects credit on the Third Wing and the Sixth Air Base."

Colonel Era A. Rader, present commander of the Third Attack Group, stepped forward and received the trophy from General Andrews.

In presenting the Frank Luke Memorial Trophy, General Andrews said:

"The Luke Trophy, a memorial to Lieut. Frank Luke, Jr., one of the most famous of all our American Pursuit pilots in the World War, is awarded annually to the Pursuit squadron making the highest average gunnery score in record practice during the training year.

"The Frank Luke, Jr. Memorial Trophy was originally presented by the Arizona Department of the American Legion in 1932. I regret that a representative of that patriotic body is unable to be here to make this presentation. The Department Adjutant, Mr. E.P. McDowell, desires me to extend his congratulations to the winner this year and to express to you the hope that this Trophy will provide an incentive for the continual betterment of the service.

"The 77th Pursuit Squadron, by the very excellent record of 58 percent possible hits for its entire record practice during the past year, is the winner of the Luke Trophy. I desire to extend my con-

gratulations and appreciation to the Commanding Officer, Major Clark; the former Commanding Officer, Major Carlton F. Bond, and the individual officers who made this excellent showing. You have a record for the past year of which you may be justly proud."

Both the speech by General Andrews and the introductory speech by General Frederick L. Martin, Commanding the Third Wing, GHQ Air Force, were broadcast to the assembled multitude through a public address system installed for the occasion. Following the presentation ceremonies, the airplanes of the Third Wing passed in review for General Andrews.

The rest of the afternoon was given over to Barksdale Field's fourth annual tactical demonstration. The various units and individuals who participated in the program performed superbly, and there was naught but praise for them from the spectators.

The curtain raiser for the demonstration was a formation of eighteen Pursuit airplanes conducting mass firing at ground targets. These planes were led by Major Carlton F. Bond, and were immediately followed by Lieuts. Park R. Learned and Cecil P. Lessig, who thrilled the crowd with their excellent exhibition of "dog-fighting."

Lieuts. Wilbur D. Camp, James Ferguson and Loring F. Stetson were next in line, and after they started with a bursting bomb, they proceeded to put their tiny Pursuit ships through the paces. While the "Pea Shooters" were doing the flying during the early part of the program, the Attack Group was busily loading their airplanes with bombs and machine gun ammunition, and after taking the air the following events came in rapid succession:

Dropping of parachute bombs by the 8th Attack Squadron from A-18 airplanes; bombing attack on ground targets by the 90th, using 100-pound bombs, and dropping of fragmentation bombs by the 13th Attack Squadron. After their bombing attacks, the three squadrons of the Attack Group rendezvoused and conducted a mass machine gun attack on targets which had been erected on the east edge of the flying field.

Again it was the Pursuit Group's time to take the air, and they were represented in the next event by Lieuts. Troy Keith and Lamont Saxton, who bursted balloons and cut streamers with deadly accuracy. Parachute jumps were next in order, and the huge crowd was indeed thrilled as four enlisted men of the 6th Air Base Squadron floated earthward beneath their billowy canopies of white silk.

The comparison between new and obsolescent equipment was demonstrated when three B-5A Bombers, flying in formation, were rapidly overtaken and passed by a B-17 Bomber.

The program was completed by three airplanes from the 90th Attack Squadron laying a smoke screen the length of the flying field.

The precision with which the program was conducted, the excellent advance publicity that had been given both the presentation ceremonies and tactical demonstrations, the expeditious manner in which traffic was handled and the general success of the entire day was due to the personal supervision of both General Martin and Colonel Goolrick. The special staff they appointed to take care of the detailed arrangements was as follows:

Colonel Ira A. Rader, Commanding Officer of the tactical demonstration.

Lieut. Colonel William C. Ocker, in charge of traffic and general handling of the crowd.

Major Frank L. Cook, in charge of all ground arrangements.

Lieut. Arthur F. Merewether, in charge of publicity.

Lieut. Kermit D. Stevens, announcer for the public address system.

The Colombian Trophy has an interesting history. In 1935, during the concentration of the GHQ Air Force at Miami, Florida, for tactical exercises, Major Benjamin Mendez, a member of the Air Force of the Colombian Republic, presented the Trophy to General Andrews. It was subsequently accepted by the United States Government through diplomatic channels.

The Third Attack Group became the first custodian of the Trophy by virtue of having had only two accidents in a flying time of 9,193 hours, a rate of .218 per thousand hours. This was for the year 1936.

Prime reason for the existence of Pursuit airplanes in the GHQ Air Force is to attack enemy airplanes with machine guns in case of war. To encourage the men who fire these machine guns to their best efforts, the Arizona Department of the American Legion, on December 17, 1932, donated to the War Department a bronze plaque in memory of Lieut. Frank Luke, World War hero and a native of Phoenix, Arizona, whose valorous deeds in the World War won for him the posthumous award of the Congressional Medal of Honor. He was one of the outstanding American flyers in the great conflict, bringing down eighteen enemy aircraft before he too perished in sky combat. He was known in the Aviation Section, Signal Corps, as the "Balloon Buster" of the A.E.F., because of his deadly accuracy in downing the observation "sausages" of the Germans.

Originally the Trophy was to be awarded to the West Coast Pursuit pilot having the highest score in his annual gunnery record firing, but in the year 1936, in

view of the fact that no Pursuit organizations were stationed on the West Coast, the conditions of the award were changed so that the presentation would be made to the organization having the highest aggregate score, said organization to be a Pursuit Squadron of the GHQ Air Force.

The first award of the Frank Luke Trophy in 1933 was made to 2nd Lieut. W.C. Morse, of the 95th Pursuit Squadron. March Field, Calif., who in record firing attained 1014 points out of a possible score of 1750, a percentage of accuracy of 57.9.

The Trophy was not awarded in 1934, due to uncompleted gunnery season.

Second Lieut. Frederic C. Gray, Jr., Air Reserve, received the 1935 award for the best aerial Pursuit gunnery performance of the year, his record being 1176 points out of a possible score of 1750, his percentage of accuracy being 60.7.

The 79th Pursuit Squadron, GHQ Air Force, received the 1936 award for the highest aggregate score in aerial gunnery, the average score being 59.5%.

Additional details supplied by the News Letter Correspondent of the 20th Pursuit Group, relative to the activities at Barksdale Field on November 21st, are given below, as follows:

The thousands of spectators were first thrilled with an aerial review by the entire Third Wing. Following the review, the 20th Pursuit Group "peeled off" and gave a demonstration of mass gunnery on ground targets that was excellent. Three flights of six planes each were used, the flights being made up of three 2-ship elements.

As the Group circled for landing, two P-26A's came screaming out of the stratosphere to give a demonstration of an aerial "dog fight." They left no stones unturned. The crowd was still "oh-ing" and "ah-ing" when three more "pea shooters" came hurtling down to the hangar line and pulled up into a bursting bomb. Their antics kept all the visitors on their toes for the next ten minutes. The trio ended their part of the show by flying down the hangar line on their sides.

Following the Pursuit Show, the Attack Group took off and put on a wonderful exhibition of bombing and shooting at ground targets. One of the highlights of the show was the dropping of dummy parachute bombs by the 8th Attack Squadron which is now equipped with the new Curtiss A-18 Attack planes.

Although the temperature hovered around thirty degrees all afternoon, a tremendous crowd from all the Ark-La-Tex area witnessed this aerial spectacle. The proceeds of the nominal admission charge were given to local charitable institutions.

ATTACKERS COOPERATE WITH GROUND TROOPS

Nineteen Attack airplanes from the 3rd Wing, GHQ Air Force, Barksdale Field, La., arrived at Kelly Field, Texas, on November 7th, under the command of Major P.L. Williams, and took off the next day for Camp Bullis, where the airmen carried out a training mission in connection with the test division in the field at that locality. The flight returned to Barksdale Field upon the completion of the mission.

On the afternoon of November 8th, another flight of 19 Attack planes, under the command of Major A.C. Strickland, arrived from Barksdale Field to carry out a similar mission. The Army flyers took off the following morning for Camp Bullis to swoop to the attack of columns on the march, the mission being to attack with whitewash "gas" as well as simulated machine gun strafing. Their mission completed, the flight returned to Barksdale Field on November 10th.

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EXPERIMENTAL INSTRUMENT FLIGHT

The 37th Attack Squadron, Langley Field, Va., on November 5th, conducted a more or less experimental instrument flight, when the pilots of three airplanes flying under the hood at two, four and six thousand feet altitude, respectively, were directed to Middletown, Pa., by radio control from a fourth airplane which performed the navigating and directing. The experiment proved very successful. During the first five minutes of the flight, however, while the pilots were getting orientated on their courses, the directing pilot found himself as busy as a telephone operator in the New York Stock Exchange in his endeavor to keep the instrument pilots within reasonable distances of each other. After the first twenty minutes, there were no more than ten orders given over the radio for one hour to keep the airplanes all intact on into Middletown.

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Roaring eastward from California in the closing days of October, five B-18's finally arrived at Mitchel Field, N.Y., for assignment to the 18th Reconnaissance Squadron. These, with the Sikorsky S-43, soon to arrive from Bridgeport, will provide the Squadron with equipment adequate to perform the duties of search and patrol for B-10 or B-18 Bombardment units to which it may be attached. The ferry teams were Major Melville, newly joined Squadron Commander, and Lieut. Hollstein; Captain White and Lieut. Dilley; Capts. Doyle and J.N. Jones, from the 18th; and from the 9th Bombardment Group, Major Connell and Lieut. Baylor in one ship, and Captain Russ Scott and Lieut. Hutchinson in the other.

VARIED PROGRAM FOR TACTICAL SCHOOL STUDENTS

Students of the 1937-1938 Class at the Air Corps Tactical School, Maxwell Field, Ala., had considerable variety introduced into their program during the month of October. While not all of the variety was enjoyed, it served to break the monotony of steady classes and study, and the class is well set for the hard pull to the Christmas holidays.

The annual visits to the Valparaiso Bombing and Gunnery Base were marred by very unseasonable weather. The first section of the class flew down on October 14th for two days of machine gun firing, and a chilly north wind followed closely on the tail of the formations. Due to the shortness of the stay, the students were housed in tents at the flying field instead of being quartered in the cottages at White Point. The useasonable weather caught the Valparaiso Detachment unawares, and no stoves had been installed in the tents. However, bales of blankets were broken, and most of the students managed to keep fairly warm, although the weight under which they slept left most of them tired the following morning.

The gunnery program was run off under the direction of Captains James E.Parker and Ralph F. Stearley, and consisted of fixed and flexible gun firing at both ground and towed targets. The program was completed on Saturday afternoon, October 16th, and practically none of the students wasted any time in making a fast return to their heated quarters at Maxwell Field. The following week end was almost a duplication of the first, and "B" Section had full reason to be skeptical that there was any such thing as "Sunny Florida." The tent stoves which had been installed by this time came in for full use during the two-day stay.

The Class had two very instructive visits to Fort Benning, Ga., for demonstrations at the Infantry School. On October 19th, they were given a realistic picture of the Infantry Company in its attack, and this was followed in the afternoon by a demonstration of the various Infantry weapons. The accuracy and rapidity of fire of the howitzer and 37 mm. guns were especially impressive. The next visit on November 2nd gave the students an opportunity to see the full Infantry Battalion in a coordinated attack, and as the Infantry map problem on this same subject had been conducted the previous afternoon, it undoubtedly served better than a "school solution" to show the proper tactics which should have been employed.

The final fall visit of the Class to Fort Benning, scheduled for November 16th, was for the purpose of affording the students an opportunity of witnessing a demonstration of what may be expected in artillery fire from the Division Artillery.

During the week of November 1st, the classroom instruction in the Air Navigation Course was brought to a close with several very instructive lectures by Lieut. Thomas L. Thurlow from the Materiel Division.

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INFANTRY CLASS VISITS TACTICAL SCHOOL

The new Refresher Class at the Infantry School, Fort Benning, Ga., paid a visit to Maxwell Field, Ala., on November 5th, in order to obtain an idea as to what makes the wheels go round at the Air Corps Tactical School. The visiting party consisted of the 17 students of the Refresher Class and 23 instructors of the Infantry School, headed by Col. Charles F. Thompson, Infantry, Assistant Commandant.

All but six of the visitors made the round trip by air, Maxwell Field airplanes going over early in the morning to ferry the visitors to the Air Corps station and, following the completion of the program, student officers made the return flight.

The program for the visitors started with a general introduction party in the Office of the Commandant, Brigadier General H.C. Pratt, and then a visit through the school building, conducted by the Assistant Commandant, Colonel Herbert A. Dargue. Captain J. Gordon Pratt, Photographic Officer, followed with a twenty-minute illustrated talk on the latest developments in Photography, and the remainder of the morning was spent on the flying line inspecting the newer airplanes and the functioning of the Operations Office.

At noon the visitors were guests of General Pratt for lunch at the Officers' Club, and then were present at the Operations tower to witness the take-off of the students scheduled for flying. The Air Corps Supply, Engineering Department and Armament Section were visited and the functions thereof explained. The final item on the program was a visit to the Naval Operations Game Room. Lieut. Commander Miles R. Browning, U.S. Navy instructor at the School, showed a very comprehensive layout of various fleet formations, and in his talk thoroughly described the reasons for the various formations.

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Squadron Leader H.B. Seekamp, of the Australian Air Force, was a visitor at Wright Field, Ohio, on November 2nd. The Australian airman was enroute to England and on his crossing of the United States was planning to visit many aircraft manufacturing plants and government bases.

THE ARMY WAR COLLEGE

By Colonel B. Q. Jones, Air Corps

THE course at the Army War College is the last opportunity for officers to "lose their corners" in the democratizing process of our military educational system. I say democratizing, for there is probably no other environment with as wholesale an atmosphere so true to the American ideas of democracy nor so insistent upon honesty and fair play as our military organization.

The junior schools in the echelons of officer training must perforce instruct by indoctrinization. It is there that the "trade of soldiering" and the "profession of command and staff" are taught. The trades and professions are fairly exact sciences. They are the codifications of the experiences, practices and procedures that have been developed to stabilized status through the ages. Quite naturally those institutions cannot allow unlicensed latitude and freedom of thought by student bodies sent there to be grounded in the very facts of history and experience.

At the Army War College is taught (more properly speaking, self-taught by the students themselves) the "art of war" and the "policies of nations." The art of war and the policies of nations are not exact sciences and are not subject to codification. There are certain immutable principles applicable to the art of war, the violation of which in the face of an able opponent leads to disaster. However, nothing short of natural ability (of which honesty and strength of character are the foundation) coupled with experience, study and reflection can master the art of war. The policies of nations spring from the lives, commerce and politics of peoples. To the average officer they are the mysterious forces that start and stop wars and dictate the manner in which they shall be conducted.

It is the objective of the Army War College to consolidate the previous training, study and experience of the student officers and project their thoughts into the higher War Department and GHQ aspects of war.

As prescribed by the War Department, the mission of the War College is:

> "To train officers for the conduct of field operations of the Army and higher echelons; and to instruct in those political, economic, and social matters which influence the conduct of war."
>
> "To instruct officers in War Department General Staff duties and those of the Office of the Assistant Secretary of War."
>
> "To train officers for joint operations of the Army and Navy."
>
> "To instruct officers in the strategy, tactics, and logistics of large operations in past wars, with special reference to the World War."

The course lasts for ten months, from the first of September until graduation at the end of June. It is divided into two general sections, the first dealing with the preparation for war, the second with the conduct of war. In the first section of the course operations by armies and groups of armies are studied together with the general organization and functioning of the War Department, including the duties, functions and responsibilities and methods of operating of the Chief of Staff, the G-1, G-2, G-3, G-4, and War Plans Divisions of the War Department General Staff, the Office of the Assistant Secretary of War, and the Offices of the War Department Special Staff. The second section of the instruction deals with the conduct of war, wherein students are assigned war subjects and required to prepare plans for, and actually carry on the execution of war missions through the process of group studies, map problems, map maneuvers, and terrain studies. The 88 Army and 4 Naval and 2 Marine Corps officers comprising the student body are organized into command groups for instruction in the conduct of war, and into committees for instruction in the preparation for war. The committees will range from 8 to 12 and 16 members each, wherein especially assigned subjects are researched, analyzed and "synthesized." Each course lasts approximately three weeks, with a fourth week to ten days devoted to presentations and conferences.

Not to neglect the physical well being of the students, an extra half hour is prescribed during the lunch hour in which the students are required to devote themselves to some form of athletics. The most popular sport is soft ball during clement weather. Such games as golf, tennis, handball, squash, volley-ball, badminton, ping-pong and bowling are all played.

What the student officer gets out of the War College is a measure of his own individual capacity. At the Army War College student officers really have the "giftie gie them to see themselves as others see them." By the process of critical self-analysis student officers can get the measure of their own capacities for high command and staff assignments.

The student body itself is composed of some of the ablest officers in the service. A cross section of their experience offers an imposing spread of knowledge and talent. They represent the accumulative knowledge and abilities of a body of professional military students

in the prime of life, stable, honest and possessing a keen capacity for critical analysis of any subject offered for their consideration. The greatest latitude is accorded them in the prosecution of their studies. The forum procedure is followed. No better words describe the "scheme of instruction" at the War College than those used by Mr. Newton D. Baker, when Secretary of War, when he stated that the aim of the War College was "not that some more wise should teach some less wise, but rather that a group of men by contact, consultation and conference evolve the best wisdom of the entire group." In other words, the Army War College is a college in the true sense of the word. It is an open, frank interchange of experience and ideas on the common ground of professional equity for the purpose of the instruction of the whole in the art of war.

Each committee researches an especially assigned subject in each of the courses pursued. The several committee studies are presented by designated speakers in open conference before the whole War College so that all may benefit from the special studies of all committees. In this manner some eighty odd military subjects are studied and discussed during the course of the college year. If no other impression is made upon the student body than that the subjects studied during the college year constitute but a small portion of all the subjects with which the military student should become familiar, then the course at the War College will have proved worthwhile.

The War College is no exception to the mission of all centers of instruction. It can but indicate to its student bodies the nature of the problems peculiar to its specialized field of endeavor and suggest the roads to follow in the pursuit of further knowledge and indicate the doors to open for the solution of special problems.

A student coming to the Army War College should realize that he will travel in fast company and that both he and his ability will be quickly appraised and labeled by his fellow students. It will be through association with his fellow students that he will learn the most, establish his reputation and start those contacts which can go a long way towards making pleasant official relations in his future assignments. It will be in the student committee rooms that close associations will be established and intimate professional experiences and ideas exchanged. It is a good rule for students who expect to come to the War College to come with an open and tolerant frame of mind.

If Air Corps officers coming to the War College as students will appreciate the view of the average ground officer, and if they will realize that it is the self-taught process of instruction that prevails here at The War College, they will be able to render the greatest service to themselves and to their fellow students. It is the exchange of knowledge and experience among the student body at the War College, coming as they do from all branches of the Army as well as from the Navy and the Marine Corps, that comprises so much of the instruction at the War College.

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THE 2ND STAFF SQUADRON AT BOLLING FIELD

The Second Staff Squadron was organized on September 1, 1936, along with the First Staff Squadron and the Base Headquarters and 14th Air Base Squadron, with permanent station at Bolling Field, D.C. The Squadron is under the direct supervision of the Chief of the Air Corps and has no connection with the GHQ Air Force.

When organized, the Squadron was under the command of Captain D.D. FitzGerald who, upon his appointment to the grade of Major in October, 1936, was relieved from command of the Squadron and his place was taken by Captain Arthur L. Bump, Jr., who is in command of the Squadron at the present writing. The officers in the Squadron at the time of its organization included Captain H.K. Baisley, Lieuts. R.E. Koon and J.W. Persons. Captain Baisley was subsequently transferred to the 14th Air Base Squadron and Lieut. Koon to Langley Field, Va. Captain Bump and Lieut. Persons now remain with the Squadron.

When organized, the strength of the Squadron was set at 100 men, but this number has been gradually cut down until now it numbers only 70 men. The First Sergeant of the organization is John J. McStay, who has held this position since the Squadron was organized. The Line Chief is Master Sergeant Hukill, and Technical Sergeants Craft and Roberts are co-workers in charge of the hangar.

At present the airplanes assigned to this Squadron are: 1 PT-3A, 2 P-12E's, 10 O-38B's, 2 A-11's, 1 C-23, 5 BT-9B's, 1 O-46A, 3 A-17's and 1 A-17A.

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Four Air Corps officers, Captains D.B. Phillips, Randolph Field; H.P. Rush, Chanute Field; Lieuts. W.C. Dolan, Brooks Field, and D.O. Darrow, March Field, reported on November 8th for the most recent of the present series of classes being conducted at the Materiel Division, Wright Field, Ohio, for instruction in instrument landing training.

The instruction includes thorough ground training on the Air Corps Link trainer set up in the equipment laboratory, as well as actual flight training in blind instrument landings under the standard Air Corps instrument landing system.

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THE NEW AIR CORPS WEATHER SCHOOL

WITH the advent of the modern long-range aircraft of large size and high landing speeds, which characteristics tend to increase the complications of emergency landings, accurate and efficient weather service has become an absolute essential to safety.

Alive to this need, the War Department instituted the new Air Corps Weather Service, which will eventually provide each Army flying field with its own weather station. At certain of the larger flying fields, such stations will be designated as Air Corps base weather stations, with uninterrupted service throughout the 24 hours of the day.

The impracticability of the immediate procurement of an adequate number of weather forecasters for this service suggested the inauguration of a Weather School under Air Corps supervision, located at an Air Corps field, and to be known as the Air Corps Weather School. Prior to the inauguration of this School, the only source of trained weather personnel was the small Meteorological School operated by the Signal Corps, U.S. Army, at Fort Monmouth, N.J., the capacity of which was but twenty graduates a year.

The new School was established with the experienced teaching staff and equipment of the Fort Monmouth School. Patterson Field, Fairfield, Ohio, was selected as the most advantageous location for it. The excellent organization work, performed in quick order by Captain Don McNeal, Signal Corps, and his assistants, in the transfer of personnel and equipment from Fort Monmouth to the new School, the only one of its kind in the United States for the training of military men, enabled it to be opened for instruction activities on September 1st, with an enrollment of 25 students.

The whole floor of the Headquarters building at Patterson Field was turned over by Lieut. Colonel J.H. Houghton, Air Corps, Commandant of the School, for school purposes. Class rooms, study rooms, laboratories and offices are modern, well lighted, and adaptable to the aims of the School. The desks, specially designed by Captain McNeal, serve the students not only for study purposes but, by the attachment of removable brackets, as small laboratories where weather maps and charts may be mounted on swinging panels about the student, enabling him to study in historical sequence previous weather maps and auxiliary chart data as he works out a map on his desk. These brackets not only hold the maps and charts for his convenience in study, but form small walls, shutting him away from distraction as he works.

For the purpose of developing and translating into practical form this science of weather, a high type of student is required, one who is at least a high school graduate with a college entrance course to his credit. His bent must be along scientific lines. He is chosen from the enlisted personnel and must pass an entrance examination.

A visit to the School will quickly convince one that there are attractions to "weather" other than sunshine and balmy breezes. The faces of the students are eager as they work.

The morning sessions at the School are devoted to Mathematics, including algebra and some trigonometry, physics and meteorology, embracing the modern theory of air mass analysis and the structure of atmospheric formations based upon the polar front theory. The afternoons are given over to laboratory exercises in weather map making, analyzing and forecasting. A study hour following the morning period sometimes turns into a question and answer session and sometimes into a discussion or semi-lecture period revolving about some such subject as the origin and development of cyclones.

Captain McNeal, Assistant Commandant and Senior Instructor of the School, has as aids two assistant instructors and three laboratory directors.

Since each base weather station operating continuously will require for all shifts the services of four forecasters, and each auxiliary station two or three, depending upon its size and location, there will be a demand for capable graduates of the Weather School for some years to come. The course at the School extends over a period of five months, and there will be two classes each year.

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LEGISLATORS INSPECT HAWAIIAN DEFENSES

The month of October witnessed the arrival of a number of members of Congress, who visited Hawaii as members of a Committee on Statehood and of a Sub-Committee of the House Military Affairs Committee. All were interested in the defense forces of the Islands, and a number of inspections and reviews were scheduled for their benefit. On October 11th, the 5th Composite Group landed at Hickam Field and lined up on the completed portion of the mat with full combat crews. The Group was inspected by members of the Committee, accompanied by the Department Commander, Major General Andrew Moses; Brigadier General Barton K. Yount, Wing Commander, and other high ranking officers. On October 14th, the Committee was honored by a review of the Hawaiian Division and the 18th Wing. Ground elements of the 5th Composite Group were moved to Schofield Barracks by truck where, in comparison with crack units of the Division, a very creditable

(Continued on Page 8).

MORE FLIGHT SURGEONS FOR THE SERVICE

Eleven medical officers, who have been taking the basic course at the School of Aviation Medicine, Randolph Field, Texas, since July 15, 1937, graduated on November 13th, last, as Flight Surgeons. Five of these officers, who hold commissions in the Medical Corps, U.S. Army, are stationed at various Air Corps Fields. They are Captains John R. Copenhaver, Kelly Field; Burt Held, Barksdale Field; Paul H. Jenkins, Maxwell Field; Frank H. Lane, Langley Field, and Donald D. Flickinger, March Field.

Four of the graduates, members of the Naval establishment, are Lieuts. Thomas L. Allman, Alfred W. Eyer, Lieuts. (jg) James C. Flemming and William C. Fowler.

Captains Frederick Miller, M.C., of the Washington National Guard, Spokane, and Daniel F. Stough, Medical Corps Reserve, of Geary, Okla., joined the class on October 1st for six weeks of practical work, after having completed the correspondence course of this School, and graduated with the class as Flight Surgeons. Major Julio Cesar Aguilera, M.C., Mexican Army, received a certificate of attendance.

Diplomas were presented to the students by Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center. He was accompanied by Colonel A.N. Krogstad, Commandant of the Advanced Flying School, Kelly Field, and Lieut. Colonel John B. Brooks, Commandant of the Primary Flying School, Randolph Field.

A very interesting and inspiring address was delivered to the class by the Rev. Arthur R. McKinstry, Rector of the St. Marks Episcopal Church, San Antonio. Major G.J. McMurry, Chaplain at Randolph Field, delivered the invocation and benediction, and Lieut. Colonel Coleridge L. Beaven, Medical Corps, Acting Commandant of the School of Aviation Medicine, presided.

Two basic courses, each of four months' duration, are conducted annually, starting on July 15th and December 1st of each calendar year. In addition to the resident course, as a year-round activity, the School conducts an extension (correspondence) course in Aviation Medicine, in which there are now 461 nation-wide enrollees. The permanent personnel on duty at the School now comprise seven officers, eight enlisted men and six civilian employees. The commissioned personnel, all Medical Corps officers, are:

Lieut. Colonel Coleridge L. Beaven, Acting Commandant.

Lieut. Colonel Neely C. Mashburn, Acting Assistant Commandant and Director of Department of Psychology.

Major Charles F. Snell and Captain Charles L. Leedham, Director and Assistand Director, respectively, Department of Aviation Medicine.

Major John M. Hargreaves, Director, Department of Ophthalmology and Otology.

Captain Edward J. Kendrick, Director, Department of Neuropsychiatry.

Captain Benj. R. Luscomb, Executive Officer and Secretary.

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WORLD WAR UNIT RENDERED INACTIVE

The 23rd Photo Section, stationed at March Field, Riverside, Calif., since August, 1936, was on October 15th declared inactive by a War Department order.

A World War unit, organized at Madison Barracks, New York, on July 26, 1918, the 23rd Photo Section served overseas until March, 1919. It was demobilized at Camp Devens, Mass., on May 7th, 1919, and, three years later, in June, 1922, was reorganized at Post Field, Fort Sill, Okla. The unit was transferred to March Field in June, 1927, and assigned to the 13th School Group. It was later attached to the 9th Corps Area, and in 1936 it was returned to March Field.

Under the command of Lieut. Paul Hanley, Air Corps, the 23rd Photo Section had just completed a 1,300-square mile project of mosaic photography for the U.S. Geological Survey, covering areas in Oregon, Montana and Idaho. A great deal of the work was accomplished under adverse weather conditions. Lieut. Hanley, with Sergeant Brees and Corporal Woodward, completed their mission in such a manner that they drew high praise from officials of the Geological Survey.

In rendering the organization inactive, ten of the twenty men were transferred to the 38th Reconnaissance Squadron to carry on aerial photography projects, and the remaining men were transferred to the 4th Air Base Squadron to continue laboratory work and ground photography.

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18TH WING HEADQUARTERS AT HICKAM FIELD

Under General Orders of the Headquarters Hawaiian Department, dated October 30, 1937, the transfer of the 18th Wing Headquarters, Air Corps, from Fort Shafter to Hickam Field was directed. The Headquarters 18th Wing, consisting of the Commanding General and his staff, will remain at Fort Shafter on a detached service status. This marks the formal opening of the post and increases activities toward further development of the largest airdrome in the Hawaiian Islands.

First Lieut. Robert W. Warren, Air Corps, assumed command of the post, and has two Quartermaster officers assigned.

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Legislators Inspect Hawaiian Defenses

(Continued from Page 7).

performance as "foot-soldiers" was displayed. The pass-by of the air elements of the 18th Wing concluded an impressive demonstration of the efficiency of the Army's Island forces.

INSTRUMENT LANDING SCHOOL CONDUCTED AT WRIGHT FIELD

THREE officers and six enlisted men reported at Wright Field, Dayton, Ohio, during the week of October 4th to receive instructions in the Standard Air Corps Instrument Landing System, which opened up new avenues for safety in flying when developed under the direction of Major Albert F. Hegenberger several years ago.

The system has been installed at 17 Air Corps fields, and the purpose of the present classes is to provide instruction in its use to certain pilots and enlisted men in order that they may in turn act as instructors to their own tactical organizations, thereby establishing uniform methods of flying and maintaining the system throughout the Air Corps.

The school is being operated under the direction of Major C.M. Cummings, with Captain G.V. Holloman serving as instructor for the instrument flights and landings. Only the officers, who are, of course, Air Corps pilots, will receive the instrument flight and landing instructions. The instructions to the enlisted men will cover the maintenance and operation of the equipment.

Classes for officers extend over a two-weeks' period, with three officers to a class. Those for enlisted men will extend over a month's period with six men to a class.

Although 17 Air Corps fields have been equipped for instrument landings, six are located in the Philippine Islands, Hawaii and Panama. Representatives of these fields will receive training at some later date. The eleven fields in the continental limits of the United States - Langley, Mitchel, Barksdale, Selfridge, Hamilton, Kelly, March, Chanute, Brooks, Maxwell and Randolph - will each send one officer and one enlisted man to receive the instructions.

Preliminary instructions for the officers taking the course are given in an Air Corps Instrument Flying and Landing Trainer, ground type, which has been in Air Corps use about a year and a half. This trainer consists of a fuselage equipped with wheel control, rudder, complete set of instruments and radio aids. The fuselage is so mounted that it can be rotated in azimuth by means of the rudder, and the wheel or stick controls the bank and dive or climb. An instructor's table is provided where a problem in radio range orientation can be set up on a keying oscillator and amplifier assembly in such a manner that the student can locate the cone of silence or simulate an instrument landing. A recording device records or plots the course flown by the student, thereby permitting the student and instructor to know definitely where the student was flying at all times. Under this hooded cockpit, the student receives the first four hours of his training. He is then ready to attempt the hooded cockpit in actual flight in a tactical airplane and can actually accomplish the feat of blind landing after one or two attempts.

The airplane instruments for instrument flight and landing are improved but basically the same as those used in the original Army system; namely, the radio compass, flight indicator (gyro horizon), turn indicator (directional gyro), sensitive altimeter, air-speed indicator, and marker beacon receptor.

The ground equipment consists of marker beacon projectors and radio compass guiding stations. This equipment is enclosed in trucks, and has undergone considerable improvement in the last several years, especially in connection with antennas. The newer and more effective types are those which have greatly increased the operating range of the equipment. They have been sponsored by Major General J.O. Mauborgne, recently appointed Chief Signal Officer of the Army.

In the training of pilots for instrument landings, experience has proved that the greatest step is taken when the student accomplishes the first blind landing. This involves a certain psychological adjustment in which the human senses are replaced completely with instrument senses. Once this adjustment is accomplished, however, the whole plan resolves itself into a simple and reliable operation in which he soon gains confidence. Before qualifying as having completed the course, the student must accomplish five consecutive blind landings.

A vast step to advance the present Army Landing System was accomplished when, a month ago, by linking the present instruments with the automatic pilot, an airplane was flown and landed automatically; that is, without any human operation of controls whatever. This system, it is anticipated, will when perfected form part of future instrument landing methods.

A list of officers and enlisted personnel attending the present class follows:

Officers: 1st Lieut. John H. Bundy, Kelly Field; 2nd Lieuts. James H. Houston, Barksdale Field, and Lewis L. Mundell, Hamilton Field.

Enlisted Men: Corporal Donald T. O'Connor, 12th Air Base, Kelly Field; Master Sergeant T.J. Kelly, 5th Air Base, Hamilton Field; Staff Sergeant E.A. Sell, 1st Bombardment Squadron, Mitchel Field; Sergeant E.B. Taylor, 6th Air Base, Barksdale Field; Private 1st Class William Bonto, 3rd Air Base, Selfridge Field; and Private 1st Class G.L. Gilliland, 1st Air Base, Langley Field, Virginia.

GUNNERY IN HAWAII WITH B-12's

In carrying out gunnery from B-12 type airplanes recently, the 23rd Bombardment Squadron, Luke Field, T.H., was establishing a precedent for the rest of the 5th Composite Group, as all previous aerial gunnery had been accomplished in Keystone Bombers. To perform gunnery work with the new airplane required a bit of inventive work on the part of the armament section of the Squadron. Since none of the B-12's on Luke Field were equipped with tow reels, a makeshift had to be devised. After many mistakes and lost targets, it was found that the solution was to use ordinary 5/8-inch sash cord, one end of which was fastened by means of an eye to a bomb shackle in the bomb bay, the other end to a 20-foot length of flexible wire cable. The standard tow target release was fastened to the end of the cable in the usual manner. The rope was attached in the bomb bay, strung through the bomb bay doors which were left partly open, and back into the ship through the tunnel gun opening in the rear of the ship. Here the rope was neatly coiled on the floor so that when in the air the man in the rear could let the rope of the tunnel gun door slowly and safely. The targets, which were already attached on the rope by means of rings, were then let out after the rope was entirely out, and operations could then be carried on in the normal manner.

On the last run the entire cable could be released by means of the emergency release which would drop the rope off the bomb shackle. A metal guard was placed over the edge at the rear of the bomb bay to prevent chafing of the rope at this point. The wire cable was necessary because of the abrupt curve in the rope just in front of the weighted release. Before the cable was spliced to the rope, a good many targets and releases were lost because of the new sleeve failing to negotiate the bend and parting the rope just in front of the release. After the above set-up had been made, gunnery went along with only a few unavoidable mishaps.

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AIRPLANE JACKS

A light collapsible tripod airplane jack with a rated capacity of 10,000 pounds has been released by the Materiel Division as Air Corps standard. This type of jack is suitable for use with B-10B, B-18, B-18A, C-32, C-33 and C-34 airplanes. A 5-ton hydraulic commercial jacking unit is used in conjunction with the tripod. By removing three wing nuts the tripod can be folded to an overall dimension of 10 inches by 10 inches by 60 inches. As the weight of the jack is less than 100 pounds, it may be readily transported and operated by one man. This is a considerable improvement over a number of very heavy, screw type jacking units constructed in the past.

A quantity of these jacks is in production at the San Antonio Air Depot and will soon be distributed throughout the service.

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PORTABLE PHOTOGRAPHIC LABORATORY

A Sub-Committee of the Air Corps Technical Committee, convened at the Materiel Division recently for the purpose of making inspection, evaluating design and preparing required military characteristics for a portable photographic laboratory, in order to submit data which would serve the purpose of a service test report on this equipment. Members of the committee were Majors C.Y.Banfill, Office of the Chief of the Air Corps, President; E.B. Bobzien, Logan Field, Baltimore; Donald Stitt, Chanute Field; George W. Goddard, Wright Field; Captain H.K. Baisley, Bolling Field; Lieut. J.F. Thompson, Fort Knox, Ky.; Master Sergeants Gilbert, Chanute Field; A.E.Matos and Sergeant A.E. Pollard.

The meeting of this Sub-Committee should result in materially speeding up the change of status so that equipment can be procured from funds set up on the program for this Fiscal Year.

The portable photographic laboratory available at the Materiel Division for this study and test is the Type A-1, which was fabricated in accordance with Air Corps Specification. It is 18 feet long, and the interior is divided into two apartments, one for developing, the other for printing purposes. All of the necessary processing equipment and facilities required to process completely aerial roll film, cut film, and to produce photographic prints are completely housed within the two separate rooms provided. Water is refrigerated. A 110-volt alternating current generator makes standard plug-in possible.

The complete laboratory unit is built on a chassis which can be towed by Quartermaster vehicles. The processing equipment is specially designed to keep the weight and size down to the minimum. The arrangement of the equipment and rooms permits a regular line production of photographic prints that can completely process and dry two hundred 8 by 10 inch size prints per hour.

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The 20th Bombardment Squadron, Langley Field, Va., proved to a lot of "Doubting Thomases" that a B-17 engine could be changed (without any special preparation or warning) between 4:00 o'clock, afternoon, and 6:00 o'clock the following morning.

TRYING MOMENTS DURING A WEATHER FLIGHT
By the Kelly Field Correspondent

THE following comprises a report of Captain B.M.Hovey, Jr., pilot of the Meteorological Flight on November 1, 1937:

The weather flight at Kelly Field on the morning of November 1st was an interesting experience to the pilot, but a trying one to the personnel at Kelly Field who were connected with the flight.

Captain Hovey departed from Kelly Field at 1:10 a.m., in an O-25 airplane, equipped with the weather instruments. Although the ceiling had been unlimited, it was obvious that a fog was forming at an approximate altitude of 800 feet. However, after consulting the personnel of the Weather Section who are on duty twenty-four hours of the day, the pilot decided that he should attempt the flight.

Captain Hovey instructed the Weather Section to keep him posted on any changes and the base altitude of the fog which they were observing at five-minute intervals. At an altitude of 850 feet, the pilot was obliged to take to his instruments for about 200 feet, the top of the fog being about 1100 feet. The climb from the ground was made at 300 feet a minute. Radio contact with the ground station at Kelly Field had been established before take-off and a report of the altitude of ceiling was made. Above the fog, which was still pierced with holes through which lights on the ground could be seen, Captain Hovey decided to fly toward Corpus Christi above the light line, since the general visibility in that direction was better than in any other. Just as an altitude of 14,000 feet was reached, a ceiling of 600 feet was reported from Kelly, so the pilot started for the ground. The correct pressure altitude was set on the altimeter and the plane leveled off at 200 feet about 20 miles southeast of San Antonio. A course was then flown parallel to the light line toward Kelly.

After about three minutes on this course at this low altitude a zero ceiling was encountered, forcing the pilot to climb above the fog which was now 1,000 feet thick. The pilot had no trouble flying in over Kelly on the east leg of the Kelly Field beam. After passing through the cone of silence, a power glide was established and a continued left turn flown so that the plane would be brought out of the fog at or very near the station. When an altitude of 500 feet was reached, the radio announced that the flood and boundary lights had gone out at Kelly. This was sad news, since the pilot had been relying upon the glare from the flood lights to determine when the plane was below the fog. A rapid glance from the instruments over the cockpit revealed nothing but fog, so the pilot again climbed back up on top.

Repeated attempts were made to come down through the fog, but the bottom could not be found as low as 300 feet. A course was set for Corpus Christi again, and Captain Hovey told the Kelly radio operator, at 3:06 a.m., that he would land at Pawnee at the Department of Commerce emergency field if it was in the clear. The fog was very thin over this field, so a landing was made there without difficulty at 3:40 a.m.

Pawnee is but sixty miles from Kelly Field, but was out of range of the transmitter of the O-25, so no report could be made to the home station that a safe landing had been accomplished. Shortly after landing at Pawnee, the fog rolled in there. Ceiling and visibility remained zero at both Pawnee and San Antonio throughout the remainder of the night. The pilot took short naps in the cockpit, on the wing, and under the wing on the ground. Fifteen minutes after dawn, the pilot found a sleepy rattlesnake about fifteen feet from the left wing of the plane, so he spent the rest of his time in the cockpit.

The gasoline carried was sufficient for about five hours; therefore, by 6:00 a.m., he must have been down some place. Anxious minutes passed with no report, so an organized aerial search was planned and, shortly after the first planes departed to search south of Kelly Field toward Pawnee, a radio message was received from Captain Hovey that he was enroute to Kelly Field, where he arrived at 9:05 a.m.

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The British Air Ministry recently issued the following warning to pilots of the Royal Air Force:

1. During experimental flights undertaken for the purpose of testing de-icing equipment, it has been found that the lateral control of an aircraft may be jammed temporarily.

2. In each case this has happened when the aircraft entered a region in which the temperature of the atmosphere was about 0 deg.C., after having flown for some time in very severe icing conditions. At this temperature the ice on the leading edges of the planes and ailerons was melting and breaking away. It is thought that some of this loose ice found its way into the gap in front of the balance portion of the aileron and restricted its movement.

3. The first indication of this condition has been a sharp snatch laterally on the control column which may move the co

(Continued on page 14).

74TH SQUADRON CONSTRUCTS GUNNERY RANGE

By 1st Lieut. Franklin K. Paul, Air Reserve

SIXTY miles southwest of Albrook Field in the lowlands of the mountainous spine that splits the Isthmus of Panama lies the Army flying field and gunnery range at Rio Hato. A permanent detail of eight men is utilized at this field to set up targets, service airplanes, and maintain the radio station that answers (usually) to the phonetic, Roger Hypo Seven.

With the advent of the A-17 airplanes, and the conversion of the 74th Pursuit-Bombardment-Attack Squadron, it became necessary to construct an elaborate and entirely different arrangement of gunnery and bombing targets. Accordingly, on the morning of October 18th, some 25 men of the 74th Squadron, armed with hammers and nails, picks, shovels and field camping equipment, clambered aboard two Federals full of two by four lumber and set out for Rio Hato and ten days of work. Trucking to Rio Hato was no mean feat in itself, as it entailed sidestepping the scores of chiva drivers who demand seven eights of the narrow gauge road and yield the remaining eighth as a grudging favor. However, men and lumber reached camp without losing a board foot.

Setting up camp and clearing the area of trees and brush began, the officers of the 74th taking charge of the camp in two-day shifts. Work was usually halted at noon and the remainder of the day devoted to swimming at nearby La Venta beach, or lying on bunks - a small amount of swimming and a great amount of lying. Rumors of sharks seen cutting the water around the point added the spice of excitement to those who sought relief from the afternoon heat in the surf. Sleeping conditions in the cool tropical nights were excellent and, although the rainy season was in full swing, the only tent that leaked appreciably was that occupied by the officer in charge. Even this discomfort was surmounted by the simple expedient of shifting the bunk to various positions, although the splashing of rain on the floor was a constant reminder that nature was very very close.

The main feature of the construction work, aside from laying out bombing circles and foul lines, consisted of erecting ten wooden targets in column, each target fifty feet long and approximately three feet high, with a space of fifty yards between targets. A survey and a line of levels for the layout were run with difficulty due to recalcitrant vertical circle and a bubble tube that refused to associate with the line of collimation; but the final error was whittled down to one sixteenth of an inch. Each fifty-foot panel was constructed in five movable sections, faced with solid board and painted white. Future air travelers, spying the white panels from above, will probably wonder idly why such an elaborate four-foot hurdle race outfit was set up so far from civilization.

Work on the targets was completed and the men returned to Albrook Field on the 27th. The 74th Squadron has tentatively arranged to encamp again at Rio Hato sometime during November to engage in a short gunnery and bombing season, using the newly constructed range. Scorekeepers, snuggled safely in dugouts close to the line of fire, will listen to the whispering rush of A-17's close overhead, will hear the smack of bullets in the wooden face boards, and will probably visualize the things that will happen to an unwary column of troops in any future conflict.

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SPECIAL NOTICE

I desire to invite the attention of Air Corps officers to the Command and General Staff School Quarterly, a military periodical, the sole aim of which is to serve as a reliable professional medium enabling officers to keep abreast of military development the world over.

Among the features of the "Quarterly" are -

Selected historical problems illustrating current tactical teachings.

A section devoted to "Military News Around the World;"

Carefully selected lectures, problems and texts illustrating or effecting the procedure or tactical doctrines of the Command and General Staff School;

Reviews of foreign and domestic military books and periodicals.

General Bundel, Commandant of the Command and General Staff School, says:

> "Every officer who desires to keep abreast of his profession should, in my opinion, be a subscriber to the Command and General Staff School Quarterly."

With this sentiment I heartily agree. The yearly subscription cost is $1.00 for the four issues.

O. WESTOVER,
Major General, Air Corps,
Chief of the Air Corps.

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A series of tests recently completed at the Materiel Division, Wright Field, Ohio, to determine the most effective method of providing clear vision through airplane windshields, favored the rotating wiper blade, in combination with a heated windshield.

V-7566, A.C.

HALF A PROPELLER SHOWS TO ADVANTAGE

"HALF a loaf is better than none" is a time-worn expression, but the fact that half of some material thing can be better than a whole one in some instances is something which has been established in at least one line of endeavor - aviation.

It appears that, as a result of a recent development in propeller research activities, the conclusion may be drawn that half a propeller is better than a whole one. In the November 15th issue of THE SPORTSMAN PILOT, Mr. Arthur S. Pierce contributes an article of unusual interest on the subject of the Cropped Prop. Mr. Pierce goes on to say:

"A year ago the idea of flying an airplane with a single-blade, or half propeller, could scarcely have been advanced as a serious topic of conversation. Today, thanks to Walter W. Everts, Baltimore inventor, any discussion of the single-blade revolves around the principles of this innovation, or to put it simply: 'How in Tophet does the darn thing work?'

Last March I undertook to make a test of the sensational (at that time) single-blade propeller from Pennsylvania to the Pacific Coast. The single-blade had been first brought to public notice when an early model was flown to and exhibited at the National Aviation Show in New York City last winter. This model is now in the Smithsonian Institution.

Everts, or rather the Everel Propeller Corporation, agreed to equip a Cub with the single-blade for a flight to the Pacific Aircraft Show in Los Angeles. At Lancaster, Pennsylvania, we installed and tested the experimental model for the flight. Mr. Everts explained the principles of the device to me at much length and I hopped off, blithely confident that I knew the why and wherefor of the device swinging around the propeller shaft.

At the first stop in Pittsburgh I was able to confound the bystanders with a 'simple' explanation of the single-blade. After more pondering and after additional observation of the airspeed and tachometer for two more hours in the air, I began to elaborate on my theories. That night I slept in Chicago, and on the following morning I found that my simple explanation of the propeller had undergone considerable change. In fact, I couldn't understand my own explanation.

So it went. I demonstrated and explained at airports every hundred miles or so and each night I had the story down pat. And every morning I had to study the puzzle of my own devising. The propeller worked beautifully even though it was still in the experimental stage. According to my calculations, the Cub was cruising nearly ten miles an hour faster than usual in cross, head and countering winds. This gave me just that much less time to study its operation.

Today, after more study, I believe I can explain the single-blade propeller in a simpler manner. Walter Everts assures me that my explanation is technically correct.

The design of the single-blade propeller began in Everts' laboratory in Baltimore. Experiments with propeller models indicated to him that a single blade produced greater thrust than the conventional design. Try as he would Walter was unable to get results with various combinations of multiple blades that would equal the single-blade.

It had been shown in experiments - and Everts checked these previous findings - that an air stream smooths out to practically normal flow in one revolution of a blade. Thus, as a propeller blade passes a fixed point a great acceleration of the air stream takes place. Before the blade makes a complete revolution, the air stream reverts to approximately normal flow, allowing the blade to 'attack' smoothly flowing air at all times.

In Lancaster I witnessed an experiment designed to demonstrate this theory. A two-blade propeller for 40-horsepower motors was turned on a test block at rated top speed throwing a smoke stream. The smoke stream described a spiral.

A single-blade designed for 40-horsepower motors was then mounted on the test block and turned at its rated top speed. The smoke stream in this case traveled in almost exact straight lines with no spiraling effect.

After hundreds of experiments, Everts completed the design for a practical single-blade that promised to produce at least 25 per cent greater thrust than conventional two-blade propellers. In short, nearly sixty experimental full-sized blades and more than a dozen hubs and mechanisms were built and tested before 40-horsepower model of the single-blade was submitted for an Approved Type Certificate, which was received.

To begin with, the 'stub' and the 'blade' balance. The Center of Gravity of the stub and the Center of Gravity of the blade balance on the crankshaft in the same manner as a conventional propeller. A counter-weight in the stub compensates for the difference in weight between the blade and the short stub.

The counter-weight in the stub of the Everel is attached to the hub by a tube of nickel steel, eliminating any strain on the wood fibre around the hub. Balancing is accomplished by screwing this counter-weight forward or back on the steel shaft. An adjustment of hair fineness is possible.

The mechanism of the hub allows the

propeller to swing forward or back at will. Under the thrust, or air load, on the blade, the tip is inclined forward, while centrifugal force tends to carry the blade backwards towards a position at right angles to the crankshaft. In operation, a balance is achieved between these two forces.

This movement reduces any bending moments of the blade. The free fore-and-aft movement also reduces vibration and the transmission of gyroscopic forces to the airplane, and practically eliminates side strain on the crankshaft.

Engineers of the Everel company tell me there is practically no vibration period in the single-blade and that tests up to 5,000 revolutions per minute have verified this calculation. This is borne out by tests with a Vibrometer.

At Lancaster I also witnessed a demonstration of this finding. A model single-blade, about 20 inches long with fixed pitch, pivoted in the fore-and-aft direction, was revolved approximately 1,800 r.p.m.'s on a flexible shaft. To the eye there was no vibration of this shaft and the supporting bearing could be held in the hand without any feeling of vibration.

Now we come to the constant pitch, or variable pitch action of the single-blade. With the airplane held stationary at the blocks and the motor turning over at top speed, it is apparent from the foregoing that the blade will incline forward under the air load.

As the blade swings forward it also pivots to the lowest blade angle of attack, or low pitch. This, of course, is the angle which is most desirable for take-off and climb. The fore-and-aft movement and the pivoting action of the single-blade are accomplished on a single bearing.

When the airplane is released from the blocks and moves forward, the blade swings backward, under centrifugal force, toward the position at right angles to the crankshaft. As the blade swings backwards it also pivots to a higher angle of attack or pitch.

Between the points of high and low pitch, we always have a balance between centrifugal force and the air load, or thrust on the blade. This balance causes the blade to take the best pitch for the speed of the airplane. In addition, the variation in pitch under this balance is regulated by the condition of the atmosphere; that is, thin air or heavy air affect the pitch of the blade, causing an increase or reduction in the angle of attack.

On the trip to the West Coast, I was furnished with a concrete example of this atmospheric effect on the single-blade between Columbus, New Mexico, and Tucson, Arizona. It was necessary to reach 9,000 feet over sea level on this hop to clear mountains. At 8,000 feet, the revolutions per minute of the propeller began to slow down, proving two things. First, that the pitch angle of the propeller was increasing because of thin air and a decreased air load on the blade. Second, that the ceiling of that particular throttle setting had been reached.

Usually when the thin air effect begins to be apparent, it is manifested by increased revolutions per minute or racing of the propeller because of the lessened resistance of thin air and a lean mixture of the carburetor. By opening the throttle a trifle, it was comparatively easy to pull over the high terrain.

Summing up, the single-blade swings forward, taking the low pitch angle for take-off and climb; it swings backward as speed is increased, taking the best angle for speed and atmospheric conditions.

The single-blade is not limited to low horsepower planes. In designing the single-blade for commercial use, Everts and his engineers have had to discard all propeller theory and tables based on multiple blades and set up entirely new tables for the single-blade.

In other words, they have gone back thirty years and started from scratch in propeller design. The camber and chord of a single-blade propeller are different from conventional designs. Obviously it is more sensible to work out these designs on a 40-horsepower motor than on a 1,000-horsepower motor. But the principle is exactly the same, and while preparing models from 40 horsepower for sale, Everts and his staff are also well under way in calibrating single-blade tables up to 1,500 horsepower."

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Jamming of Ailerons by Ice

(Continued from Page 11).

trol column by as much as a fifth of its normal full movement. In every case it has been possible to free the ailerons by moving the control column further in the direction caused by the snatch, thus allowing the ice to clear, before resuming normal control. It is considered that any attempt to force the control column back to its normal position before clearing the ice may result in locking the ailerons, and the loss of lateral control.

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H E L P W A N T E D

Correspondents to write about the Air Corps activities at Selfridge Field, Randolph Field, Scott Field and Wheeler Field. Haven't had the pleasure of hearing from these stations for some time. What's going on out there?

WAR SECRETARY SAYS AIR CORPS MUST BE READY

In his annual report to the President for the year 1937, the Hon. Harry H. Woodring, Secretary of War, among various other recommendations affecting the military establishment, advocates an increased strength for the Air Corps both in personnel and materiel. Touching on the present situation confronting the Air Corps, he states that the utilization of larger and more complicated types of aircraft have necessitated an increase in the number of officers assigned to that branch, and he adds that, unless more officers are authorized for the Army as a whole, an increase in the number assigned to the Air Corps can only be made at the expense of other branches which are already feeling keenly the shortage in commissioned personnel. The enlisted strength of the Regular Army, he asserts, should be recruited up to authorized strength of 165,000 and maintained at that strength during the next year. Additional enlisted men are required principally in the Air Corps and to fill anri-aircraft regiments of the Coast Artillery Corps.

With respect to the Reserve Corps, the Secretary of War states that at least 30,000 Reserve officers should be given two weeks' active duty training each year, this number being in addition to those on extended active duty with the Regular Army and the Civilian Conservation Corps.

Declaring that the most noticeable recent advances have been in aircraft, Mr. Woodring states:

"We now have on hand approximately 1,000 new military airplanes, nearly all of them less than 3 years old, and another 1,000 are under order. In addition, we have on hand several hundred serviceable planes, classified as obsolete. These older planes will all be replaced within the next year or two.

"Our goal in airplane strength is 2,320 modern, serviceable planes, to be attained not later than June 30, 1940. This number was recommended as highly desirable by the Baker Board 3 years ago. Subsequent studies have confirmed the conclusions of the Baker Board with respect to this number. Recent aviation developments have produced military airplanes of much greater speeds, with much greater range, and much more effective than any visualized 3 years ago. Hence, an air fleet of 2,320 planes today is several times more powerful than one of a comparable numerical strength a few years ago.

"Foreign countries are making heavy increases in the strength of their air arms and most of the first-class powers have many more airplanes on hand or under construction than we have. However, in quality our new planes are at least the equal and probably the superior, type for type, of any military airplanes in the world. Our program of airplane procurement does not contemplate attaining the numbers possessed by other countries. With our favorable geographic position and our determination to use our military strength only for defensive purposes, we believe that 2,320 military airplanes will be sufficient for our needs. If funds are made available we hope to attain this number by 1940. Thereafter, it will be necessary to procure approximately 500 new airplanes each year to replace obsolete and unserviceable craft and to keep our equipment abreast of current developments.

"It should be borne in mind that modern aircraft cannot be quickly improvised. The construction of airplanes necessarily takes considerable time. Hence, our peacetime strength should approximate rather closely our requirements in war. Furthermore, in a major war our air arm would probably be engaged almost immediately on the opening of hostilities. Therefore, it is desirable that it be practically on a war footing in time of peace.

"While we are procuring up-to-the-minute aircraft in sufficient quantities to bring our air strength gradually up to our requirements, we are at the same time encouraging the experimental development of new types so that we may continually improve the quality of our equipment. In this way we guard against overstandardization of airplanes and we are able to take advantage of technical improvements as rapidly as they are developed. * * *

"The program of modernizing the equipment of all components of the Army should be accelerated in order that we may quickly improve and expand such organizations as the Air Corps, the antiaircraft artillery, and seacoast defenses. * * "

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Due to the necessity of transporting power plants by air, it has been the aim of the Materiel Division at Wright Field to develop the lightest weight unit possible. The standard C-1 portable electric power plant, gasoline driven, of 110 volt, 2500 watt capacity, weighs 320 pounds. Recent developments have resulted in a design of power plant with the same capacity as the Type C-1, but weighing only 160 pounds, which is a considerable weight saving over the Type C-1. In the new power plants the generator and engine are integral with each other, all castings are of aluminum, and the engine is of two cycle design. The power plant is mounted on wheels, which are removable for transportation, and the overall dimentions are less than those of the standard Type C-1 power plant.

THE "COL. HORACE M. HICKAM" CHRYSANTHEMUM

It seems that the memory of the late beloved Colonel Horace M. Hickam is being perpetuated in more ways than one. Readers of the News Letter are aware of the fact that a large flying field in Hawaii now in process of construction has been named in honor of the deceased Air Corps officer. It has been brought to our attention that, at a recent exhibit of Fall flowers in Washington by the U.S. Department of Agriculture, a variety of chrysanthemum which attracted considerable attention bore the designation of "Colonel Horace M. Hickam."

It has since been learned that this variety of chrysanthemum originated in the greenhouses of Mr. Tom Knipe, a florist of Kokomo, Indiana, whose wife is the sister of Colonel Hickam. Mr. Knipe states that this variety showed such high quality of bloom and such large size that both he and Mrs. Knipe deemed it worthy of a very fine name, and therefore they named it in memory of Colonel Hickam.

This variety of chrysanthemum was exhibited in the National Chrysanthemum Show in Detroit in 1935, and won the silver medal of the Society of American Florists for the best new seedling chrysanthemum in the show. It was also awarded the first prize in the same Show for the best twelve yellow chrysanthemums exhibited. It matures about the middle of November and should be bloomed on a terminal bud. It is a very large golden yellow exhibition variety, and Mr. Knipe, who is Vice President of the Chrysanthemum Society of America, believes it is superior in size and quality of bloom to any other yellow exhibition variety at present on the market.

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BOUQUETS FOR THE B-17

The Second Bombardment Group, declares the Langley Field Correspondent, will always remember 1937 as the year in which they received the B-17 airplane and entered a most interesting phase of training, missions based on greater range and higher speeds than ever before.

The first few months were devoted to transition and making necessary minor changes for improvement or safety in the airplane. The next three months were devoted mainly to performance flights to obtain the true performance of this plane at all altitudes, speeds and wing loading.

The last period is being entered now, one devoted to navigation, bombing and gunnery. Not only is there the usual navigation school conducted on the post, but each squadron has its own school, conducted by an experienced navigator, who instructs the other members of the B-17 crews in the fundamentals of navigation. Protection from wind blast, coupled with ease of manipulation and a stable platform from which to fire, has encouraged gunnery tremendously, as is evidenced by the expenditures of 30 calibre ammunition this year. Marksmanship has improved correspondingly.

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FAST GOING IN SUBSTRATOSPHERE PLANE.

Officers stationed at the Air Corps Materiel Division, Wright Field, namely, Captains A.H. Johnson and T.A. Sims, Air Corps, pilots, with Major F.F. Reed, Ordnance Department, and Captain H.G. Armstrong, Medical Corps, as passengers, accomplished an exceedingly fast flight in the Army Air Corps substratosphere airplane on November 2nd. Taking off from Chicago, they passed over Chanute Field at an altitude of 19,000 feet. At this point they started timing the flight and proceeded to Wright Field. An altitude of from 19,000 to 21,000 feet was maintained over this course, and the distance of 220 miles was covered in 38 minutes. This averages close to 350 miles per hour. With the substratosphere airplane no oxygen equipment or heavy clothing were necessary at the highest altitudes, due to the supercharged cabin feature.

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AIR CORPS OFFICERS AS LECTURERS

Among the Wright Field officers who are rendering the Air Corps a special service through lectures on Air Corps activities are Captain T.A. Sims, who talked before the Rotary Club of Piqua, Ohio, on November 9th; Lieut. H.H. Tellman, who lectured before the University of Dayton on November 10th; Lieut. E.S. Perrin, who lectured before Miami University, Oxford, Ohio, November 11th; and Captain A.H. Johnson, who lectured before the Gyro Club of Cincinnati, Ohio, on November 11th.

Scheduled for lectures in the near future are: Lieut. H.M. McCoy, who will talk before the Lion's Club of Hamilton, Ohio, on December 1st, and Lieut. L.E. Massie, who will talk before the Society of Military Engineers and Reserve Officers at Cincinnati on December 8th.

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The 21st Reconnaissance Squadron at Langley Field, Va., has only recently been equipped with the B-18 type airplanes which are proving, in the main, satisfactory for reconnaissance missions. All the personnel of the outfit are enthusiastic about them, which augurs well for the missions the Squadron may draw in the future from Brigadier General Gerald C. Brant, Commander of the Second Wing.

V-7566, A.C.

USE OF RADIO AS AN AID TO NAVIGATION

After several experiences in locating the cone of silence and letting down through solid overcast in actual bad flying weather, and feeling convinced that there was a need for a compendium of best methods and procedure in such cases, in view of the fact that there seems to be little information on the subject available in written form, Lieut. Colonel Junius W. Jones, Air Corps, Commanding Officer of Chanute Field, Rantoul, Ill., directed Captain Hugo P. Rush, of that station, to prepare some notes on this subject, and which are quoted hereinafter. Certain points discussed in these notes are quite controversial in character. While the opinions expressed are those of an individual who has had considerable experience in the use of radio aids to air navigation, they are not necessarily to be construed as officially accepted and recognized methods.

The notes prepared by Captain Rush are as follows:

1. When heading for a station try to get on a leg of the radio range at least 15 minutes before estimated time of arrival for the following reasons.

a. It offers time to get accurately a line in the Twilight Zone which will frequently save working an orientation problem.

b. By obtaining a compass reading necessary to remain in the Twilight Zone which is valuable in case the station starts a broadcast.

2. When approaching a station maneuver constantly between the Twilight Zone and the Oncourse Signal. When in a Twilight Zone head for the Oncourse Signal and when receiving an Oncourse Signal head for the Twilight Zone. This assists in accurately obtaining a heading of the radio range leg, and in a measure indicates the distance from the station by the rapidity that changes in heading are necessary.

3. Always be sure that you are flying with the volume control on manual. If necessary to use automatic, keep in the Twilight Zone to facilitate location of the radio range.

4. If static is bad, or signal strength varies, clearly keep in the Twilight Zone.

5. Check reliability of radio reception by tuning in on stations while at a considerable distance from a station.

6. The cone of silence or the station can frequently be located more easily or more positively at medium altitudes of 1500 to 3000 feet than by flying at extremely high altitudes because the build-up and fading after passing a station is much more rapid.

7. Upon approaching a station, keep volume turned down to the point where the signals are just audible. It is of some assistance to turn the volume extremely slowly, as when approaching stations it will require almost constant turning of the volume control in order to keep the signal strength down.

8. When maneuvering near the station and making 270 degree turns, turn away from the station rather than towards it.

9. If time for gasoline is of importance, circle during interruption of beam as it usually saves time in the long run.

10. Look upon every range or combination of ranges with suspicion and for the best approach, as usually one is much easier than the other. Plan circling pattern for loss of altitudes, listing altitudes and courses and times before reaching the station.

11. Read altimeter each time, starting from small hand to a large hand, for instance: 1,700 rather than glancing at the hand which indicates 700. This will assist in avoiding errors of an even 1,000 feet. Establish a minimum altitude before reaching the station, usually field altitude plus 3 or 400 feet, depending upon location of obstacles.

Cone of Silence:

Perhaps too much emphasis has been placed on locating the cone of silence and insufficient emphasis placed on the maneuvering pattern for arriving over the field at minimum altitude. Upon locating the cone of silence, maneuvering should begin at once on a predetermined plan and the changes of signal from one course to various sectors. At least three changes should be used to definitely determine that the cone of silence was true and not false.

13. Circling during interruption of beam can be avoided if the leg of the beam has been accurately lined up. This can be accomplished by turning at least 10 degrees to the right until the beam is again placed in operation. If the station has been passed during the broadcast, it will become immediately apparent, due to the complete change in signal.

14. If there is no change of signal when receiving the beam other than to indicate to move further into an A or N Zone, head back to the radio range the same amount. This maneuver will assist in eliminating any possibility of passing from one side of the radio range to the other side of the radio range where the same signal would be received.

In transmitting these notes to the Information Division, Colonel Jones states that, while there are one or two points therein in which he does not fully concur, he believes they are a step in the right direction and that they should serve as a starter upon which to build something in the nature of an Instrument Flying Manual.

(Continued on Page 18).

OSCILLATING BEACON

Results of service test of a new type of beacon, known as the oscillating beacon, have recently been received at the Materiel Division, Wright Field, O.

The optical arrangement of this beacon consists of a 360° Fresnel lens with axis of symmetry placed vertically. The light source, a 1500-watt, 32-volt lamp with special barrel type filament, is so designed that it is periodically raised and lowered from the focus, the motion being along the axis. The resulting beam, which is transmitted 360° radially, sweeps from the horizontal upward to approximately 8° above the horizon, and then downward to the horizontal. The lamp operates at approximately 40 strokes per minute. The signal transmitted to the observing pilot is normally 80 flashes per minute as compared to 6 flashes obtained with the conventional rotating beacon.

Other advantages of this beacon are as follows:

a. The time interval between flashes is small.

b. The effect is independent of altitude.

c. The beacon is especially effective during bad weather, when needed the most.

During the service test of this beacon at Mitchel and Selfridge Fields, practically unanimous approval for standardization was given by all pilots who observed it. Action has been initiated to standardize the same, and it is contemplated that all major stations will ultimately be supplied with this equipment.

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AERIAL PHOTOGRAPHIC TESTS

Captain C.W. O'Connor, Air Corps; Captain L.J. Rumaggi and Lieut. F.J. Dau, Corps of Engineers, recently took off from Wright Field, Dayton, Ohio, for Fort Sill, Okla., in a B-10B airplane which had been specially modified for flying new experimental types of Air Corps cameras. Their mission was to obtain photographs of the areas immediately contiguous to Fort Sill, for use by personnel of the Corps of Engineers at the Materiel Division for the preparation of Fire Control Data Sheets of the Fort Sill, Area. On this mission, which was covered in nearly a week's time, two cameras were used, the tandem T-3A (5 lens) and the experimental 4-inch wide angle type. Three flights were made at 20,000 feet, and personnel worked at that altitude some eight hours during the week.

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During the month of October, the Engineering Department of the San Antonio Air Depot overhauled 17 airplanes and 66 engines, and repaired 42 airplanes and 17 engines.

COLONEL McCHORD'S MEMORY HONORED

The new Northwest Army air base at Tacoma, Washington, has been designated "McChord Field," in honor of the late Colonel William C. McChord, Air Corps, who was killed in an airplane accident near Maidens, Virginia, on August 16, 1937. The announcement was made in War Department General Orders issued recently. The War Department policy is to name Air Corps fields and stations in honor of flying officers of the Air Corps Regular Army, or of the Air Corps Reserve, who have died in line of duty and who have had long, loyal and exemplary service.

Colonel McChord had been affiliated with military aviation since the World War. Previous to that time he served with the Cavalry, in which branch he was commissioned a second lieutenant on June 14, 1907, following his graduation from the United States Military Academy.

Colonel McChord was a graduate of the Mounted Service School, Fort Riley, Kans. the Air Corps Tactical School, Langley Field, Va.; the Command and General Staff School, Fort Leavenworth, Kansas, and the Army War College, Fort Humphreys, D.C. He served as Commanding Officer of Park Field, Millington, Tenn.; Gerstner Field, Lake Charles, La.; Chanute Field, Ill.; as Air Officer of the 6th Corps Area, and as Commanding Officer of the 19th Composite Wing, Panama Canal Department. Upon the completion of his foreign service duty in 1935, he was assigned to duty in the Office of the Chief of the Air Corps, and at the time of his death was Chief of the Training and Operations Division of that office.

McChord Field has an area of 1310 acres. The area selected for the site comprises the Pierce County Airport (also known as the Tacoma Airport), consisting of approximately 960 acres, and was donated to the Government through the Board of County Commissioners of Pierce County, Washington. The Congress recently authorized the purchase of an additional 350 acres to be included in the area occupied by the air base.

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Use of Radio as an aid to Navigation

(Continued from Page 17)

Referring to par.3 of these notes, Col. Jones states he has not found it easier to locate the cone of silence between 1,500 and 3,000 feet than at a higher altitude, his experience being that the higher the altitude the wider the cone of silence and the more pronounced the fading. As to maneuvering after locating the cone of silence, he declares his experience is that the best procedure is to fly in one straight line, say, 5 minutes, to one side of the cone of silence; then turn 180 degrees and fly back 10 minutes, putting you 5 minutes on the other side of the cone of silence, timing your location of altitude so as to be approximate over the cone of silence when you break through.

CLASSES AT AIR CORPS TECHNICAL SCHOOL

With the Maintenance-Engineering, Communications and Photographic classes well under way, academic activities at the Air Corps Technical School at Chanute Field, Rantoul, Ill., are fairly humming.

Among the student officers in this year's classes are one Marine Corps officer and one officer from the Philippine Constabulary.

The following is a roster of the student officers:

Maintenance Engineering: 1st Lieuts. Clayton E. Hughes, Thetus C. Odom, Carl F. Demberg, Frank G. Jamison, Charles B. Dougher, Richard M. Montgomery, 2nd Lieuts. Byron E. Brugge, Jack E. Shuck, Charles B. Harvin, Lawrence S. Fulwider, Burton W. Armstrong, Jr., Air Corps, and Captain Zebulon C. Hopkins, Marine Corps.

Communications: 1st Lieuts. William R. Morgan, James McK. Thompson, George F. Hartman, Edward J. Hale, Travis M. Hetherington, Vernon C. Smith, Samuel A. Mundell, George B. Dany, John W. White and 2nd Lieut. Jasper N. Bell, Air Corps.

Photography: 1st Lieuts. Thomas R. Starratt, Jerald W. McCoy, Donald L. Hardy, 2nd Lieuts. Hilmer C. Nelson, Air Corps, and 3rd Lieut. Jesus A. Villamor, Philippine Army.

In addition to the above 28 officers, the school rosters list the following number of enlisted students:

Department of Mechanics	178
Department of Armament	63
Department of Photography	63
Department of Communications	148
Department of Clerical Instruction	19

During the present year, it is expected that over 1200 enlisted students will be graduated and sent to service organizations.

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TESTS ON NEW MOTORIZED BALLOON COMPLETED

The War Department recently announced the completion of the initial phase of experimental tests on the C-6 motorized observation balloon at Fort Sill, Oklahoma. These tests have been in progress since early September and several hundred flights have been made under a great variety of wind and weather conditions.

The C-6 brings many novel and interesting features to the observation balloon field. The war-time captive balloon, known as the "sausage," and which has remained practically unchanged to the present time, was moored by a cable to a winch. To move it over the terrain when changing its station for observation, it was necessary to "walk" it overland, where power lines, fences, trees and other obstacles made progress slow and difficult, or to pull it down, deflate, roll it up and move it by truck - also a time-consuming process. The C-6 has the advantage that it moves under its own power across country, while its winch moves by a motor; arriving at the proposed rendezvous or ascension site, the balloon lands and is attached to its winch. Thereafter it performs the normal functions as a captive balloon, affording a stationary platform at high elevation for directing artillery fire.

Another great advantage possessed by the C-6 lies in the fact that this new balloon is filled with helium, a non-inflammable and non-explosive gas, while the older type was hydrogen filled, making it much more vulnerable to attack and much more likely to be destroyed by storm or fire.

The C-6 Balloon is 107 feet long and 30 feet in diameter and contains 52,000 cubic feet of helium. The old type "sausage" it replaces was 95 feet long, 27 feet in diameter and contained 37,500 cubic feet of hydrogen. The new balloon is powered by a 90 horsepower Lambert motor, mounted in a detachable car, giving the craft a speed of 40 miles per hour.

Major Ira R. Koenig, Balloon Squadron Commander at Fort Sill, Okla., has charge of the tests, assisted by Major W.C. Farnum as operations and engineering officer, and Staff Sgt. Joseph F. McMurray as operations clerk. The balloon was delivered from the lighter-than-air depot at Scott Field, Belleville, Ill., and set up by Master Sergeant Joseph A. Bishop and Staff Sgt. Harrison C. Finley, both of long technical experience in lighter-than-air service at the Depot.

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INTERESTING FLIGHT BY CAPTAIN WITTKOP

An interesting flight in a B-17 Bombardment airplane was recently made by Captain Hilbert W. Wittkop, of the 96th Bombardment Squadron, Langley Field, Va., the take-off being at 5:00 a.m. for Maxwell Field, Ala., via Barksdale Field, La. A report of the flight follows:

Clouds were encountered at 2,500 feet shortly after take-off and flying conditions became worse with altitude. No breaks were discovered up to 7,000 feet, so altitude was lost to 2,000 feet in an attempt to get underneath the ceiling. Being still blind at 2,000 feet, the flight was continued on instruments.

Passed through rain at 8,000 feet and emerged into broken clouds at 6:40 a.m. Clear weather but considerable turbulent air prevailed, with strong NW and W winds. Descended to 4,000 ft. at 8:30 a.m., in an attempt to find more favorable winds. Definite check of position at Chattanooga indicated 150 m.p.h. ground speed.

Arrived over Barksdale Field at 11:00 a.m. Dropped 20 bombs in four approaches from 7,000 feet and departed for Maxwell at 12 noon. Landed there at 2:45 p.m., after an uneventful trip. The time required from Langley-Barksdale Maxwell Fields was 9 hours and 45 minutes.

From 3:45 to 5:15 p.m., the B-17 was inspected by delegations from the National Guard Convention. The B-17 was obviously the center of interest and members of the inspecting party appeared favorably impressed.

Taking off from Maxwell Field at 3:25 the following morning, an unlimited ceiling and favorable winds gave a ground speed in excess of 200 mph. Humorous is the thought that the ground speed was so high that it was necessary to throttle well back when leaving Spartanburg, S.C., so that Langley Field would not be reached before daylight. The landing at Langley Field was made at 7:15 a.m., time 3 hrs. 50 min.

OBITUARIES

Two Air Corps officers, 1st Lieut. Thomas C. Morgan and 2nd Lieut. Loyal C. Woods (Res.), stationed at Randolph Field, Texas, lost their lives in an attempted landing after dark on November 26th, in the vicinity of the CCC Camp at Greenwood, S.C. Lieut. Morgan was pilot of the BT-2C plane, and Lieut. Woods, passenger.

Lieut. Morgan, who was a West Point graduate, Class of June, 1932, was a native of South Carolina and was born on September 29, 1907. Following his graduation from the Military Academy, he was commissioned a second lieutenant of Infantry, and applied for flying training at the Air Corps Training Center. He graduated from the Primary Flying School, Randolph Field, June 30, 1933, and from the Advanced Flying School, Kelly Field, Texas, October 14, 1933, on which date he was rated as "Airplane Pilot."

Assigned to duty in the Hawaiian Department, he served with the 4th Observation Squadron at Luke Field. Upon the completion of his two-year tour of duty in Hawaii, he was transferred to Brooks Field, Texas, where he served for about 16 months, and was then transferred to Randolph Field.

Lieut. Woods had a rather varied career prior to his assignment to duty with the Air Corps. He was born at Green Isle, Minn., September 25, 1908. After attending the University of Washington, Seattle, for two years, and the Wilson Business College of that city for eight months, he took a two-year course at the University of Southern California. He specialized in mechanical and electrical engineering and gas chemistry.

In 1926, Lieut. Woods was in the employ of the Western Oxygen Company, and on week ends flew a "Jenny" which he personally owned. In the following year he was employed by the Western College of Aeronautics and was engaged in enrolling students and teaching the theory of flight. Thereafter for several months he was employed as an automobile mechanic for a motor car concern in Seattle, and then went to work for the Northwest Flying Club, enrolling students and teaching theory of flight, together with aircraft maintenance. He performed the rigging on the airplanes and kept the motors in repair.

In the spring of 1929, Lieut. Woods went to Alaska, where he assembled a JN4D airplane from its original crates and flew it for the next two years on passenger flights and student instruction. He had no assistance in assembling or rigging of this airplane or in servicing or maintaining it during the entire time he flew it. Returning to the States in 1930, he was employed for brief periods as an acetylene welder for a construction company and as a solicitor for an air transport concern. He then entered the employ of a California Dental Supply Company, and in his spare time kept up his flying at the Culver City Airport by instructing students and hauling passengers.

During his connection with commercial aviation, Lieut. Woods flew fifteen different types of commercial aircraft. Having completed subcourses in Theory of Flight, Aerial Navigation and Meteorology, and after satisfactorily completing a written examination in other required subjects, and demonstrating his proficiency as a pilot before a board of officers, he was appointed a second lieutenant in the Air Reserve on September 24, 1936, and given the rating of "Airplane Pilot" on the same date. In September, 1937, he was ordered to Randolph Field, Texas, for a special course of instruction.

On Monday, November 15th, while on an authorized Pursuit transition flight from Kelly Field, Flying Cadet Alfred J. Vapitell, Observation Section, Advanced Flying School, was killed when his Pursuit plane which he was flying struck the top of a tree four miles west of Boerne, Texas. The body of the Flying Cadet and the wreckage of his plane were found on Mr. C.C. McFarland's ranch. The remains of the late Flying Cadet Capitell were sent to Boston, Mass., accompanied by Flying Cadet Richard A. Ames. A Board was convened to investigate the cause of the crash.

The deceased Flying Cadet was a graduate of Notre Dame University of the class of 1935, and started his flying training last February at Randolph Field. Surviving are his parents, Mr. and Mrs. Alfred R. Capitell, of Belmont, Mass.

The sincere sympathy of the Air Corps is extended to the relatives and friends of the deceased airmen who died in the service of their country.

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SERVICE TEST OF Y1A-18 ATTACK AIRPLANES

Conclusion of the initial phases of the service test of the Air Corps' new twin-engined Attack airplane, the Y1A-18, at Barksdale Field, La., was recently announced.

This new type was designed and built by the Curtiss Airplane Company, Buffalo, N.Y., to fill a particular need often expressed in Army Attack circles for more speed, greater armament load, and higher performance combined with greater visibility for the combat crew. It has been undergoing secret tests in the 3rd Attack Group of the GHQ Air Force, where its maintenance characteristics, flying qualities and military utility are being compared with those of single-engine Attack planes and with the desired requirements.

All these features the manufacturer has endeavored to design into this new article. Its twin engines, added power and special design give it greatly improved visibility for the pilot, a very necessary requirement in view of the low altitude at which Attack planes do their military missions. Daily during the past two weeks, pilots of the 3rd Attack Group flew these new planes over the gunnery and bombing range, firing the machine guns and dropping bombs to test in hard-flight service every feature thereof.

W-7566 A.C.

Langley Field, Va., November 20th.

Hq. and Hq. Squadron, 8th Pursuit Group: Captain Walter L. Wheeler departed on November 3rd by rail for Inglewood, Calif., where he secured a BT-9B type Observation airplane, which was one of four of this type ferried from the North American Aviation Company for assignment to this station. Captain Wheeler returned via the southern route with his new plane on November 14th.

33rd Pursuit Squadron: The 33rd pilots are really getting in the instrument flying these days. Using two ships at a time on the 1,000-mile required avigation flight, one pilot is under the hood most of the way. San Antonio seems to be the best turning point, and the southern route is usually open, as far as weather is concerned.

Lieut. R.C. Weller and his "C.O." are touring the hills of Montana these days. We hope Dick has the same luck engineering the horses around as he does his PB-2 here at Langley.

35th Pursuit Squadron: Work goes on as usual with the 35th. Our guns stay hot, but the temperature has nothing to do with it.

36th Pursuit Squadron: Flying for the past couple of weeks has been confined almost exclusively to squadron firing on tow targets and on shadows. It has been definitely proven that the shadow firing is of greatest value in determining the center of fire for any phase of mass firing. The conventional company-front dive has been supplanted by a renovated string dive which has shown a marked improvement in ease of control in squadron firing and a steady increase in the number of hits.

Individual navigation trips are becoming plentiful on these Saturday afternoons. Most of the pilots took advantage of the Armistice holidays to build up their cross-country time.

37th Attack Squadron: The 37th recently added two new faces to its list of pilots in the persons of 2nd Lieuts. W.G. Lee, Air Corps, and H.M. Truitt, Air Reserve, who graduated from the Air Corps Training Center in October. This leaves the Squadron with a net gain of one pilot, as Lieut. W.F. Day was lately transferred to the Base Squadron.

21st Reconnaissance Squadron: The Army-Navy minor joint exercises, held off the waters of Chesapeake Bay during the week of November 1st, were brought to a successful conclusion partly through the efforts of the officers and men of this Squadron. Two of the Squadron's B-18 airplanes flew out to sea some distance in order to intercept two destroyers simulating enemy aircraft carriers. The objective was reached on schedule, and for the ensuing four hours the two planes stood by, reporting each change of position until Bombardment aircraft had initiated their second attack. A nice problem in navigation then presented itself - determining a course back to Cape Charles Light. Major Downey proved himself again to be a capable navigator when the landfall was gained with no appreciable error noticeable for the distance flown over water. Lieut. McCaffery checked navigation in an escort plane. The personnel of the two combat crews showed themselves quite competent to perform their duties smoothly and efficiently.

Private 1st Class Jacob A. Coble, recently assigned to this Squadron, was rated AM 2nd Class, on November 2, 1937.

2nd Bombardment Group: On November 8th, the eyes of Fox-Movietone Newsreel were focused on the 2nd Bombardment Group. Ten B-17 airplanes, consisting of one from Headquarters Squadron and one flight from each of the other squadrons, were photographed in various type formations. One hundred bombs were dropped, ten being 100-lb. demolition and the remainder 100-lb. practice bombs. Five thousand rounds of 30 calibre ammunition were fired at spots of aluminum slick dropped on the surface of the water while the cameraman was grinding away from an airplane flying alongside the formation.

20th Bombardment Squadron: First Lieut. D.F. Gibbs just returned to Langley Field from March Field with one of four BT-9's being delivered to this field. These ships are greatly needed, as the present set-up of combat crews on the B-17's gives pilot time to a relatively small number of officers.

96th Bombardment Squadron: The crew of the B-17 airplane as they functioned on the flight from Langley to Maxwell Field via Barksdale Field, October 28-29, were: Airplane Commander-Pilot, Captain Hilbert W. Wittkop; Co-pilot, and Lieut. Morgan; Engineer, Captain Robinson; Navigator, 1st Lieut. Mussett; Chief Aerial Engineer, Staff Sgt. Baker; Armorer, Staff Sgt. Hamilton; Radio Operator, Corporal Withers, and Mechanic, Private Moll.

San Antonio Air Depot, Duncan Field, Texas.

The personnel of the Depot, on November 13th, welcomed the arrival of Major and Mrs. Clarence F. Horton and son. Major Horton, who had been stationed at Maxwell Field, was assigned to duty at the depot as Assistant Depot Supply Officer.

On November 9th, the Depot welcomed the arrival of 2nd Lieut. William R. Boutz, Air Res., on extended active duty. He was transferred on September 10th from the Hawaiian Department to duty with the 3rd Transport Squadron and availed himself of a leave of absence prior to reporting for duty.

Captain John F. Hardie, Air Reserve, of San Antonio, reported on November 10th for 14 days' active duty training, this being his fifth such tour at this Depot.

Lieut. Colonel Henry J.F. Miller, the Depot Commander, and Major E.D. Perrin, Chief Engineering Officer, made a navigation training flight in a C-33 to Maxwell Field, Ala., and return, November 12-14.

Mr. Jacob Bailey, Machine Shop Superintendent of the Rockwell Air Depot, was here November 16-19 on temporary duty conferring on engineering shop methods.

Mr. Oliver J. McGrath, Chief Clerk of the Engineering Department, Rockwell Depot, was on temporary duty at the Depot Nov. 17-19, confer-

ring on the revised Air Corps Cost Accounting System and observing shop methods.

Recent interdepot transport service trips by personnel of this Depot included the following:

Lieut. Colonel L.T. Miller and Lieut. T.K. Dorsett to the Fairfield Air Depot and return, Nov. 15-18; Major J.M. Clark and Lieut. L.P. Kleinoeder to the Rockwell Air Depot and return, Nov. 12-14; Lieut. M.H. Warren and Staff Sgt. Tyler to Maxwell Field and the Fairfield Air Depot and return, Nov. 7-10; Lieut. C.B. Collier and Tech. Sgt. Jackson to the Rockwell Air Depot, departing Nov. 19th; Lieuts. J.Will Campbell and P.S. Blair to the Fairfield Air Depot and return, Nov. 17-18.

Private Elvin S. Kelly was transferred to the 3rd Transport Squadron Nov. 16th from the 62nd School Squadron, Kelly Field.

The following were recent visitors to this Depot: Mr. Warren, of the Curtiss Airplane Company division of the Curtiss-Wright Corporation, Buffalo, N.Y., Nov. 10th, conferring on engineering matters; also Mr. S.W. Young, of that company, November 15-16, conferring on spare parts.

Col. John H. Howard, Air Officer, 7th Corps Area, Omaha, Neb., Nov. 12-13, on a navigation flight. Col. Howard was Commanding Officer of this Depot to July of this year.

Lieut. Colonel Frank D. Lackland, Chief of Field Service Section, A.C. Materiel Division, Wright Field, in this vicinity on leave of absence enjoying a hunting trip.

Lieut. Colonel Junius H. Houghton, Commanding Officer, Fairfield Air Depot, Nov. 17, en route to the Rockwell Air Depot on an interdepot transport service trip.

Lieut. Colonel Warner B. Gates, Adjutant of the 1st Wing, GHQ Air Force, March Field, Calif., Nov. 19, on a Bomber ferrying mission from March Field to Kelly Field and return.

Major Lionel H. Dunlap, Commanding the 4th Transport Squadron, Rockwell Air Depot, enroute on an inter-depot transport service trip.

Major Robert V. Ignico, Mitchel Field, N.Y., Nov. 12, while on leave in this vicinity.

Major Edward V. Harbeck, Jr., of the Office Chief of the Air Corps, Nov. 19, enroute flying a BT-9 from the West Coast to Boston, Mass.

Captain Russell Keillor and Lieut. M.S. Smith of the Materiel Division, Nov. 19, bringing in two P-26 planes for overhaul.

Lieut. Aubrey L. Moore, Nov. 12, enroute to his home station, Hamilton Field, Calif.

Mr. John B. Johnson, head chemist of the Materiel Division, Wright Field, Nov. 12-13, conferring on materiel requirements.

Maxwell Field, Ala., Nov. 5th.

Hqrs. and Hqrs. Squadron: Lieut. Aring, Mr. Sgt. Lessels, Sgt. Auman and Pvts. Dunn and Spain departed for Eglin Field, Fla., Oct. 21st and returned on the 25th. They were on duty in connection with the fall Bombing and Gunnery exercises of the A.C. Tactical School.

Sgt. Vandergrift, on a cross-country to San Antonio, Texas, October 20th, returned on the 22nd.

Pvt. Godwin was released from the hospital on October 25th and departed for his new station, Randolph Field, Texas, on October 28th.

Pvt. Register, who was on detached service at the West Point Preparatory School at Fort McPherson, Ga., returned to duty Oct. 26th and was assigned to duty with the Academic Dept.

Pvt. 1st Cl. Weese, one of our Radio School students, secured a transfer to the DEML, with station at the Georgia School of Technology, Atlanta, Ga., and departed on Nov. 5th.

Pvt. Elam was transferred to the 13th Air Base Squadron, this station, on Nov. 5th.

Pvt. Wallis, formerly Corporal, 18th Pursuit Group Headquarters, Wheeler Field, T.H., reenlisted for this Squadron on Nov. 4th and was assigned to the reproduction section of the Air Corps Tactical School.

Private King, recently discharged from the Marine Corps, after having served a 4-year hitch, mostly in foreign service in China, was reenlisted for this Squadron on Nov. 4th, and will be assigned to duty with the Ground Communications Section. He had previous experience in the Signal Section of his branch, both in telephones and radio.

Staff Sgt. Wiedaw reported for duty from Chanute Field, Ill., on Oct. 30th. He recently made a mutual transfer with Staff Sgt. Morris of this Squadron.

Barksdale Field, La., Nov. 24th.

20th Pursuit Group:- The 55th Pursuit Squadron participated in the recent 3rd Wing Maneuvers which were conducted in the Waco-San Antonio-Houston area in Texas. The Squadron arrived at the Houston Municipal Airport at 1:30 p.m., on October 16th, and after two weeks of vigorous field exercises departed for the home base at Barksdale Field on October 29th.

In spite of the unusually inclement weather and the difficulties imposed by operations from and to the airdrome, 25 miles from Group Headquarters, it is thought the performance of the Squadron as a member of the Group combat team reflected very creditably the type of Group training accomplished during the preceding training year. Official communications and commendations from higher authority indicate that missions were executed with accuracy and spirit, and that all phases of Squadron operations were performed in a satisfactory manner.

It is the consensus of all pilots that one of the high lights of the exercise was the opportunity to observe the experimental motorized division from Fort Sam Houston on a practice march. From our position in special support of the 3rd Attack Group, we were able to see the entire division on the road at once. The train of trucks appeared to be many miles long and the dust could be seen unbelievably far away.

Pilots of the 55th Pursuit Squadron, GHQ Air Force, participating were Captain M.R. Nelson, commanding, and 1st Lieuts. Bryant L. Boatner, G.P. Disosway, 2nd Lieuts. Lamont Saxton, Air Corps, 2nd Lieuts. Troy Keith, James O. Reed, George A. Blakey and Harry B. Young, Air Res.

The 77th Pursuit Squadron was presented with the Luke Trophy, Sunday, November 21st, by Major General Frank M. Andrews. Major Milo N. Clark accepted the Trophy, although Major Carlton F. Bond was in command of the Squadron during the winning gunnery season.

November 15th marked the 7th birthday of the

77th Pursuit Squadron and was celebrated by an interesting program, including dinner at the Squadron mess, all men and officers being present.

The 77th played an active part in the 3rd Wing Maneuvers, October 16-29, and during that time was based at Fort Crockett, Texas.

Two new members joined the ranks of the 77th, Lieuts. W.E. Dyess and A. Peterson, who have just reported in from Kelly Field, being members of the last class out of the Training Center.

Luke Field, T.H., November 5th.

5th Composite Group: Three officers of the Group departed on October 25th for extended maneuvers with the Naval Patrol Squadrons of Pearl Harbor. Lieuts. R.C. Lindsay, Paul E. Ruestow and S.T. Mitchell were the fortunate individuals who, during a period of ten days, had the opportunity to observe methods used by the Navy in extended operations over sea areas. Flights were scheduled to be conducted in the area from Oahu to Midway and Johnston Islands.

4th Observation Squadron: The Squadron was scheduled to go to South Cape on Nov. 8th for a week of field training, six Squadron officers and one Medical officer attached being slated to accompany thirty enlisted men on the trip. Those fortunate to make the trip will have plenty of time to indulge in all the swimming and fishing they desire after the day's work is over.

23rd Bombardment Squadron: The C-33 maintained by the 23rd Bombardment Squadron has certainly let the Squadron in for many varied tasks. Major Beaton, our Squadron Commander, was designated senior instructor, with Captain Douthit and Lieuts. Kehoe and Stranahan as instructors, to aid him in checking off all pilots at Luke Field qualified to fly this ship. As there are 20 other pilots here who are eligible to act as principal pilots on the C-33, the staff of instructors are going to be pretty busy for some time to come.

As far as routine inspections will permit, the ship is scheduled for two instruction periods daily, each of 1½ hours' duration. These flights, along with a few night missions for previously qualified pilots to gain more familiarity with the ship, keep it in the air a good part of the time. Although a good sized portion of the Squadron Engineering Section is required to keep the plane in operation, all concerned are gaining valuable information that will stand them in good stead when the newer and larger tactical ships arrive over here.

Our most recently arrived officer, Lieut. Frank Mears, has taken over the reins of all Squadron athletic activity and is now beginning to wonder if this half a day working schedule isn't mostly a myth.

With the organization of the Skeet Range into a working proposition, we are now doing our bit toward improving our individual skeet scores and so making the Squadron team such that it will be able to hold its own in competition. The withdrawal of two of our best shots into the newly organized Headquarters team makes us work all the harder to achieve this goal, but with a little practice we will take our chances with anyone on the field.

72nd Bombardment Squadron: 1st Lieut. J.G. Armstrong, Squadron Adjutant, is going to Hamilton Field, Calif., on the Nov. 26th Transport. The Squadron wishes him luck at his new station.

The 72nd turned in its last B-5A on October 27th. It was flown to Bellows Field, where it will be used as a bombing target. Good riddance, say the crew.

Hawaiian Air Depot, Luke Field.

Even since the Depot's Civilian Athletic Club was organized last June, the men in the Machine Shop have played an important part in furthering the club's progress. Particularly enlightening is the big percentage of men at the meetings from this department. The number of versatile athletes not only measures up in quantity but also in quality. Given short notice, a snappy aggregation could be assembled and molded to meet any other department in the depot in any athletic competition. The "stick-to-it" and "go get 'em" spirit prevails and is unexcelled. The exuberance of bellowing, ribbing, laughter, spirited verbal blasts, and loquaciousness are always conspicuous, which makes it like a happy holiday for a jovial harmonious family.

Mr. Lynn V. Young, genial sub-foreman of Final Assembly Unit, was transferred to the Fairfield Air Depot, Ohio. We miss his invigorating smile and highly interesting tales of experiences encountered during his sojourn in the Navy and early days at Pittsburgh and Middletown.

Another important cog in the efficient machine of the Aero Repair Branch for many years, Mr. Eugene E. Finch, has also made his headquarters at Fairfield. Both he and Cy Young can get together now and tell their fellow employees at Fairfield all about Hawaii and the Hawaiian Air Depot.

With the transfer of the 18th Wing Flight Office to Hickam Field during the middle of September, all operations data for the Hawaiian Air Depot are now being handled at the Aero Repair Branch Office.

Mr. Hardison L. Roberson, our propeller man in the Aero Repair Unit, will soon call Middletown, Pa., his new home town. He plans to travel to Middletown via the Panama Canal in the near future.

Materiel Division, Wright Field, O., Nov. 17.

Major S.M. Umstead left for the plant of the Boeing Company on Nov. 3rd for the purpose of conducting further flight tests of the new B-15 Air Corps Bomber, and with Major J.D. Corkille to pilot it to Wright Field at the completion of the tests at the manufacturer's plant.

Brig. General A.W. Robins returned from Washington on November 11th. He attended a meeting of the National Advisory Committee for Aeronautics.

Lieut.-Commander R.W. Bockius, USN, reported for duty at Wright Field as Inspector of Naval Aircraft on Nov. 15th, replacing Lieut. Commander Thomas P. Jeter, USN, who left on November 20th for Washington for temporary duty until sometime in January, after which he is to sail for South America to act as adviser to the

Argentine Ministry of Marines. Commander Bockius was formerly with Cruiser Scouting Squadron 2 of the Pacific Fleet at San Diego, where he served as commanding officer.

Bolling Field, D.C., Nov. 2nd.

Major William J. McKiernan, Jr., was recently transferred from duty with the New Jersey National Guard at Newark Airport, N.J., to the Works Progress Administration in Washington, D.C. Major John C. Gullet was transferred from Mitchel Field to the Office of the Assistant Secretary of War. Both of these officers are attached to Bolling Field for flying duty. First Lieut. H.W. Grant was transferred from Brooks Field, Texas, to this station, and 2nd Lieut. H.W. Regan, Air Reserve, was assigned here for three years' active duty.

Chanute Field, Ill.

2nd School Squadron: The Squadron gained two permanent men in Lee M. Clingler, formerly of the 22nd Observation Squadron, Brooks Field, Texas, and Arthur E. Erickson, not yet out of recruit drill. Private Clingler was a former student of Airplane Mechanics at the Air Corps Technical School, during which time he was attached to this Squadron.

Corporal George E. Brassier was rated Airplane Mechanic, 2nd Class, on Sept. 17th.

Sergeant Richard F.J. Martell, who has been Acting First Sergeant since the organization of this Squadron on Sept. 1, 1936, was made First Sergeant on Sept. 1, 1937. Sergeant William Miller was made Staff Sergeant, vice Sergeant Martell.

The Squadron gained two Private, 1st Class, ratings, which were given to Arthur E. Johnson and Robert E. Hodges; one 3rd Class Specialist rating, given to James B. Clark; two 5th Class Specialist ratings, given to Charles W. Caywood, and Laurence E. Jenkins; and two Sixth Class Specialist ratings, given to Edward A. Reynolds and Charles W. Eggers.

We have only four men graduating this month - Pvts. 1st Cl. Aloysius P. Ewen, Zeno Geers and Elmo Reeves of Fort Sam Houston, Texas, and Pvt. John C. York, Fort Riley, Kansas. We expect to lose around 15 men next month due to their graduating from courses.

Hqrs. and Hqrs. Sqd. Technical School: With the coming of the fall season and cooler weather, the bi-monthly dances for the enlisted men have recommenced. This is a feature usually looked forward to, not only because it helps break the monotony of routine but also because of some new faces in evidence from other towns nearby.

Every station throughout the Air Corps, no doubt, has its few who were caught by a recent act passed by Congress, preventing non-citizens from reenlisting. This station had one individual, Corporal E. Heise, who was caught very short. In fact, he had not time to even turn around when his term expired and he found himself on the outside looking in. However, through reconsideration of the "Ins" those caught were able to "re-up" after a long two months' wait.

Staff Sergeant Lloyd T. Burval has been acting Top-Kick for the outfit in the absence of First Sergeant Edwin C. Booth on furlough, and will take over the reins upon the latter's retirement. A better man for the job could not have been chosen. Sgt. Burval has everything that goes to make a good number one man in an outfit the size of this one - some 560 men.

The unassigned student body has been slowly but surely decreasing in size since the authorized strength was cut from 300 to 190. It now stands at 219, and continued graduations will have it down to the authorized strength in a few weeks.

The tent brigade about this Squadron is beginning to feel the icy fingers of Jack Frost. In warding off the conditions of frigidity, G.I. coke stoves were installed in all tents.

1st School Squadron: First Lieut. Archibald J. Hanna and his paddle-footed dog "Old Lady" departed for the West Coast recently for duty at March Field, Calif.

The reputation of this organization for square shooting is evidenced by the fact that all members of the National Guard and members of the Philippine Army who are ordered here for the purpose of taking a course of instruction are advised by their buddies, who have been here before, to be sure to get attached to the First School Squadron for duty. At the present time there are five National Guardsmen attached to the organization, with several more to report soon. There are also attached several members of the Philippine Army.

Kelly Field, Texas, Nov. 23rd.

Second Lieuts. E.F. Cullerton, R.W. Osborn and W.D. Griffith, Air Reserve, ferried back three BT-8's from Bolling Field, to be used for training purposes.

Captain Leo W. DeRosier, of March Field, arrived here Nov. 17th, bringing Lieut. Colonel Warner B. Gates and three Reserve second lieutenants who were to ferry three B-3's and one B-4 airplanes to March Field for use as targets.

Major Earl H. DeFord, of Maxwell Field, arrived here November 14th and renewed old acquaintances. Major DeFord served two previous assignments at Kelly Field, as Secretary and Operations. He departed on Nov. 16th.

Colonel Harvey B.S. Burwell, of March Field, arrived here Nov. 10th, on his way to Maxwell Field. He made an overnight stop here on Nov. 14th on his return trip.

Kelly Field will lose all but five of its old Bombers. Four will be sent to Barksdale Field, and four each to March, Maxwell and Chanute Fields. Three BT-8's were received from Bolling Field on Nov. 16th, and orders are in for two B-18's.

Mitchel Field, N.Y., November 23rd.

18th Reconnaissance Squadron: Starting on November 1st, and lasting for a week, was a Minor Joint War, involving units of the Second Wing. This Squadron participated with the usual perfect performance. As heretofore, the target was promptly located and "destroyed."

BOWLING

March Field — There is considerable interest displayed in bowling at March Field, which has one of the finest bowling alleys in Southern California. Composed of six alleys, it will be the scene of major competition in the Brunswick Bowling Sweepstakes starting the week of January 24, 1938.

The 1937-1938 bowling season for enlisted men started on October 11th, with 12 teams entered in the league. League games began on October 22nd. The Officers' League began activities on October 20th.

A weekly prize of $2.50 for the highest single game bowled by any individual of the squadron teams, and a weekly prize of the same amount for the highest game bowled by any man, other than those of the leagues, are offered by the Post. Only March Field men are eligible.

The March Field alleys, already the scene of one perfect game when Hammond of the Post Exchange, rolled a score of 300 last year, is expected to produce several consistently high-scoring players.

Maxwell Field — Headquarters Squadron won their first tilt in the Military Bowling League, which opened on November 3rd, by default, as the opposing team did not make its appearance on the alleys. Hqrs. Squadron got away to a bad start, but picked up more than a hundred pins in the second and third games and wound up with a nice total score. The 13th Air Base defeated the 91st School Squadron, taking two out of three games. It looks like Headquarters has plenty of competition this year.

Chanute Field — While bowling cannot be awarded the title of "the Old Army Game" at Chanute Field, it comes very near qualifying for that high honor. It seems that everyone bowls - the old, the young; the grown-ups, the kids; the N.C.O's; the "bucks;" those who can; those who can't; those who may learn; those who never will.....well, anyway, everyone bowls at Chanute Field.

The teams comprising the Chanute Field Bowling League are: Officers, First School Squadron, Second School Squadron, Tenth Air Base Squadron, Headquarters and Headquarters Squadron and Spareparts. At the end of three weeks of play, the standing of these teams was as follows: Officers, Headquarters and Headquarters Squadron, Spareparts, Second School Squadron, Tenth Air Base Squadron, First School Squadron.

Headquarters and Headquarters Squadron holds the record so far with high team game of 904 and high team series with 2543. Lieut. Henderson, with a score of 223, holds high individual game; Private Stabelfeldt, high individual series with 606, and Capt. Mullet, high individual average with 184.

The Chanute Field bowling season opened with a crash of pins on October 5th. The officers' team, now out in the lead, is at present composed of seven members, namely: Captains Mullett, #6; Olson, #3; Lieuts. Dany, #1; Henderson, #2; Blake, #4, Haas, #5, and Hale, #7. A ladder system is used to determine the position number on the team, and at present the competition is plenty stiff for the first seven positions.

Air Corps stations having bowling teams are hereby challenged to matches at such times and places as can be arranged, and any team Captain desiring such a match should contact Chanute Field's team captain, Lieut. Gordon A. Blake.

Chanute Field officers are not confining their activity to the Post Bowling League exclusively this season, but with the able assistance of two civilians, have entered a team in the Commercial League at Champaign, Ill. Play in the Champaign League has been in progress for six weeks, and at this writing the Chanute Field team is far in the lead with a total of 14 wins and 4 losses.

Mitchel Field — The bowling team of the 18th Reconnaissance Squadron consists of Sgt. Dexter (Captain); Staff Sgt. Wendt; Sgt. Byrnes, Pvt. 1st Cl. Swol and Pvt. Pokalsky. The team is now in second place in the Post Tournament.

BASKETBALL

Luke Field — For the first time in several years the 72nd Bombardment Squadron has shaken the dampness of the athletic cellar from their shoulders and find themselves on the heels of the leader in the Luke Field Basketball League. The obstacle in our path is the 4th Squadron, defending champions. Our boys bowed before them to the tune of 40 to 26, and this is our lone defeat to date. We realize the 4th has a finely balanced team, but we still have to see a team that is unbeatable. We are looking forward to the second meeting of the teams, and feel assured our team will come out on the long end of the score, especially since the addition of Lieut. Strother to our coaching staff. A great forward at the 'Point," his aid is greatly appreciated.

Mitchel Field — The basketball team of the 18th Reconnaissance Squadron, which made such an excellent showing in last year's Post Tournament, is making ready for the coming season under the capable direction of Lieut. "Red" Nelson. Men reporting for practice are Pvts. 1st Cl. Swol, Rosenberg and Pvt. Meyers of last year's squad, and Cpl. McIsaac, Pvt. 1st Cl. Logsdon, Pvts. Plesser, Smith, Stamm, Marczewski, Almassey, Norton, Jablonski, and Carpenter, new candidates.

Langley Field — The Basketball team of the 35th Pursuit Squadron has won five games and lost one. One more win and we will enter the playoff for the championship.

Proving that the 21st Reconnaissance Squadron is a well rounded organization, athletic teams have been entered in all types of competition. At present, the basketball team is engaged in an exciting race for league leadership. The bowling team, after a slow start, is rounding into a well balanced aggregation. Second Lieut. C.W. Bicking, Air Reserve, is the

Squadron Athletic Officer.

The 49th Bombardment Squadron Basketball team defeated the 37th Attack Squadron team by the score of 24 to 13. This victory definitely moves the 49th into position to compete for the league championship. Five of the six games played to date have been victories. The first game of the season was lost to the Materiel Section, 1st Air Base Squadron. Since then the 49th has shown remarkable improvement, and we feel confident that our championship chances are good. The boys are handling the ball well and working together. The Squadron is proud of the calibre of team-work. Members of the 49th team are: K.D. Phelps, center; D.T. Caton, R.C. Keller, A.V. Sherman, guards; O.J. Davis, H. Charlotta, J.A. Holko and J. Green, forwards.

Chanute Field — The basketball season just completed was one of the most successful that Chanute Field has ever experienced. The teams were on their toes alert, aggressive and playing with a determination to win. Good sportsmanship and fair play were always in evidence. When the final whistle was blown, the official scorer's record showed the 10th Air Base in the lead with seven victories and one defeat; followed by Hq. and Hq. Squadron "A" with 6 wins and two losses; 2nd School Squadron with an even break, four wins and four losses; 1st School Squadron, with 3 wins and five losses; and Hq. and Hq. Squadron "B" with eight defeats. The winner, the 10th Air Base Squadron team, will be presented with a Trophy as a reward for their splendid showing.

The Second School Squadron basketball team is busily engaged these days practicing for coming games. Private 1st Cl. Joe Ellis is captain of the team. The other members of the squad are Pvt. 1st Cl. Lane Anderson, Pvts. Max L. Barker, Winford V. Bland. Willard L. Boblett, Paul W. Capps, Lee M. Clingler, Arthur F. Erickson, Vernon C. Johnson and George F. Leysath. At the beginning of the season new equipment was purchased. The boys are playing and practicing diligently. They seem to be in good shape, and from the minute they go on the floor until they leave they are fighting with grim determination.

Referees will be furnished by the A. & R. Department, and postponed games will be played to be set by the Athletic Council. The whole post has enjoyed the games played thus far, and everyone is looking forward to the games which are to come.

After dropping a heart-breaking game to Headquarters Squadron "A" team, 35 to 33, the 10th Air Base Squadron Basketball team has been rolling over all opponents. The loss of the first game apparently made the boys angry, for they have now stepped out and, by taking four games in a row, are now on the top of the heap with only three more games to go. Two of these promise plenty of fireworks, so we are not picking out a place to put the championship trophy just yet. The three games yet to be played are one each with Headquarters "B"; First School Squadron and Second School Squadron. A party is promised the team by Major Camblin if it takes the championship, so the boys can be depended on to put forth their best efforts.

T E N N I S

Luke Field — The visiting German and Japanese Davis Cup tennis stars, Baron Gottfried von Cram, Heinrich (Henner) Henkel, Jiro Yamagishi and Fumiteru Nakano, performing at the new Beretania Courts in Honolulu recently, put on the finest exhibition matches ever witnessed in these parts. Local net enthusiasts also got to see the newly crowned Hawaiian singles champion, Lieut. Dolf E. Muehleisen, of Luke Field, in action. Lieut. Muehleisen, at one time a leading player in California, took the measure of Henkel and Nakano in one set tilts. Employing uncanny drop shots, he repulsed Henkel, 6-2, and Nakano by the same margin. Seven hundred spectators watched the German and Japanese Davis Cup stars and Lieut. Muehleisen play, and saw plenty of excellent tennis. Each player on the court put forth his best efforts, as if he were playing in one of the major tournaments in the United States or Europe. The excellence of the brand of tennis uncorked was surprising, since the international stars had been off the boat only a few hours and had not played for over a week.

Lieut. Muehleisen came to Luke Field two months ago, and will be stationed there for the next two years, all of which assures us of a capable opponent for stars visiting here in the future.

The 65th Service Squadron seems to be getting in its stride again, capturing some of the leading athletic events both in the service and civilian athletic circles. Second Lieut. Dolph E. Muehleisen, winner of the Hawaiian Open Tennis Tournament; Private Quentin M. Arnold, winner of the around the island (Oahu) cycling contest; Private Casimer Rybinsky, winner of the Honolulu Sector Open Golf Tournament for Enlisted Men; and last, but not least, Private 1st Cl. Cornelius T. Pieters, winner of the Honolulu Sector Diving Classic, are some of the men responsible for the high standing of the Squadron in athletic activities.

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Mitchel Field, N.Y., November 23rd.

19th Reconnaissance Squadron: Major Pete Melville and Lieut. Dilley recently made a cross-country navigation flight to Maxwell Field, Ala.

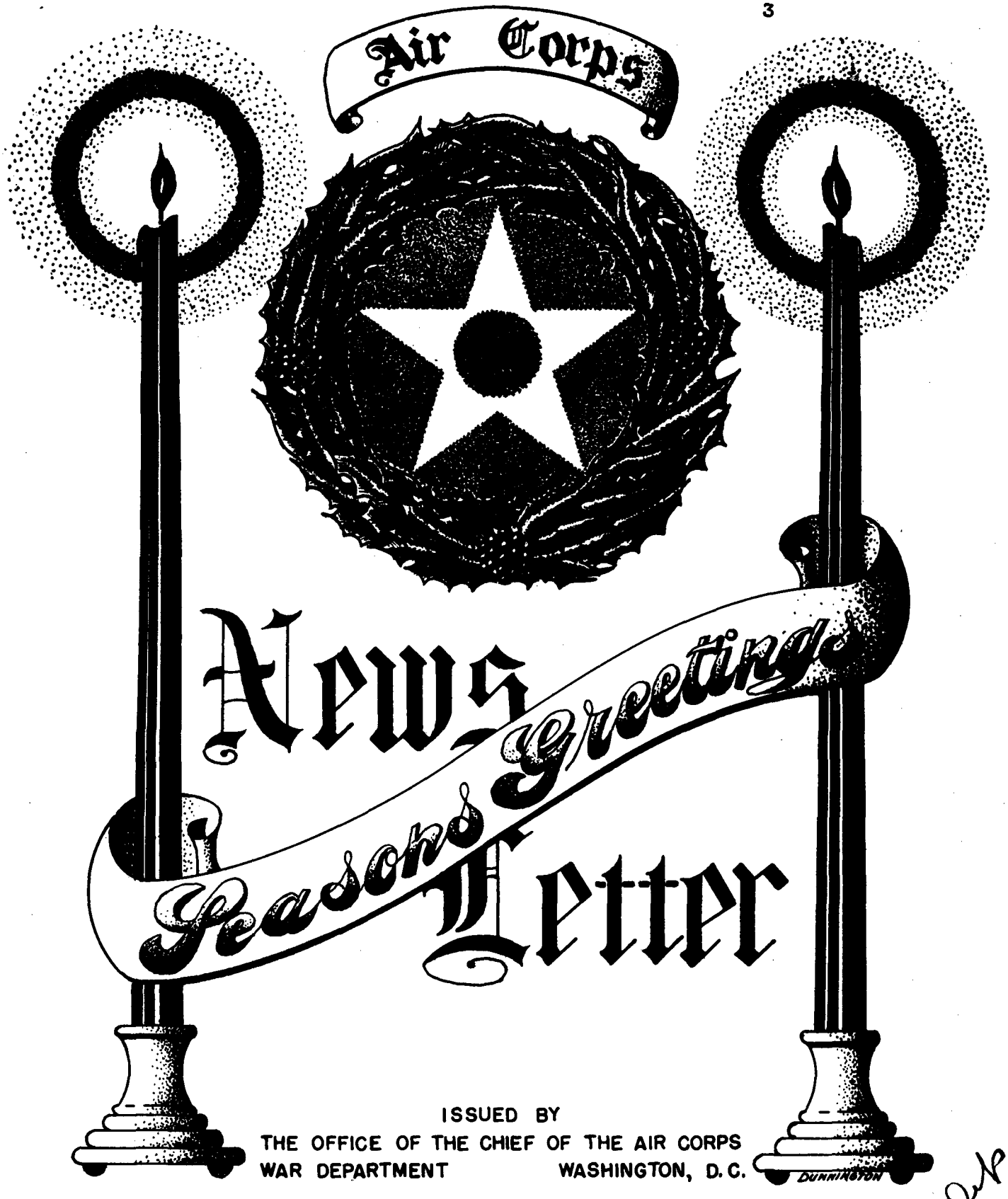
Instrument Sergeant Dexter offers a reward to anyone knowing how to swing a D-4 compass in a B-18.

Captain "Woppy" White departed on a short leave. Good hunting, "Wop."

Lieut. D. Devine is just on the verge of graduation from the 9th Group Navigation School with the degree of MGLI (Master of Getting Lost Intelligently).

Obituary

Two of our new B-18's have been loaned to the 9th Group.



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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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A YEAR END MESSAGE FROM THE CHIEF OF THE AIR CORPS

The season of the year which is now upon us is an opportune one to reflect upon those things which we may well count our blessings. Looking to the many places in the world where wars are now raging or imminent we in the United States can be especially thankful that our country is at peace with all the nations of the world.

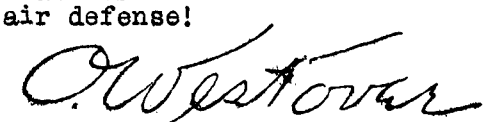
We in the Army Air Corps can be thankful for a year spent in productive activity, the total result of which has done much to promote and insure that peace. As we look back over the last twelve months of our activity and endeavor, we find the year 1937 to have been one of the bright years for the Army's flying arm and, for that matter, for aviation - military and civil - the world over.

Our success in the flying arm has been due, in no small degree, to the strong support of the War Department and the Army, as a whole, and to the close cooperation of other branches of the service. We have also been supported strongly and aided freely by many other agencies and establishments of the Federal Government, all of which we acknowledge with gratitude.

We have problems, true; we have difficulties yet to be overcome, but we know what those problems and difficulties are and we have made plans to meet them. We have not sat slovenly and sluggishly by and done nothing about those phases of air development and organization which required attention. We have not been unmindful of the fact that many foreign countries have, during the past year, made giant strides in an effort to develop air forces inferior to none in the world. We have realized that our problem in the Army Air Corps has been two-fold: first, to keep abreast of aeronautical research, experimentation and development, to insure that our Army airplanes, type for type, are at least the equal of those found elsewhere in the hands of any possible adversary. We have accomplished that result. I can state emphatically that that is not only true, but that some of our types are superior to those available anywhere else in the world. We know that our ability honestly to make that remarkable statement is due to the funds and energies we have spent on aeronautical experimentation, but we realize that several other countries have, during the past year, placed an uncommon emphasis on experimentation and, in some cases, probably are now spending more money than we in this country on this subject. That means that their airplanes three to five years from now will be superior to ours, unless we increase our funds for experimentation, research and development. We shall leave nothing undone in our effort to accomplish that result. The other score on which our energies have been exerted is on organization and training of those units and that personnel which we have had available in the Army Air Corps during the year. Our GHQ Air Force has ably superintended, supervised and controlled that training program to the end that I feel the Army can justly say there is no other air force in existence which exceeds it in training, in individual and unit efficiency. There may be larger ones, but none is better. Size for size it compares more than favorably with the best.

Our present respected and enviable position in the world in the air, so far as military flying is concerned, is directly due to the earnest and sincere efforts and untiring energies of our officers and men of the Corps. I wish to thank each of you for your individual efforts which have borne the collective result I have just outlined, and wish for each of you and your families a Happy Holiday and successful New Year 1938.

May we all continue our earnest and concerted effort with the result that our country may be afforded ample air defense!



Major General, Air Corps,
Chief of the Air Corps.

V-7578, A.C.

THE NATION'S LARGEST EMPLOYER AND ITS "LABOR BOARD"
By the Hamilton Field Correspondent

The United States, as the largest employer of men in this country, has demonstrated that there need be no such thing as a labor problem.

Every day new men enter military life - men as different as night and day - men of all temperaments, trades, ages and training; men from all States and nearly every county in every State; poor men, rich men. Yet these men quietly and unobtrusively, without fuss or flurry, are assimilated, trained, and take their place as units of the national defense.

In the Air Corps especially has the personnel problem been acute. From vastly varied sources come recruits who must within a few months' time assume positions of great responsibility. On their technical knowledge and training in any one of hundreds of aeronautical crafts depends the safekeeping of valuable military aeronautical equipment and the lives of those who defend our nation in the air.

Upon the organization of the GHQ Air Force, the personnel problem reached its zenith. In order to place each soldier in the one spot he is most fitted by trade, temperament, and desire, Major General Frank M. Andrews, Commanding General of the GHQ Air Force, initiated a system of personnel classification.

Under this personnel plan, each man entering the Army is examined thoroughly as to his previous training, his mental aptitude, and his personal desires, by a board of officers situated at each air base of the GHQ Air Force. Upon the classification of this Board depends the future assignment and type of work done by each soldier entering the Air Corps.

The system works like this:

"Bob" Brown has just enlisted for the Air Corps at Hamilton Field at his home (let us say Portland, Oregon). Brown has been outfitted as a soldier at Portland and given transportation to Hamilton Field. On arrival at this air base, Brown is first of all interviewed by Major Edward D. Jones, Air Corps, S-1 and Chief of Personnel at Hamilton Field. In this interview, Major Jones secures as far as possible every scrap of information concerning the recruit which would be of advantage either to the soldier or to the Government to know. He learns about his educational qualifications, his vocational knowledge, his hobbies, his past work, his preference as to kind and place of work. Brown says that he is a high school graduate. He has lived on a farm his entire life and he is very interested in trucks and automobiles. He has never done any professional work on gasoline engines but he has always "tinkered" with them on his father's farm. Brown then goes to the garage, where he is given the opportunity to tear down and repair one of the seventy odd trucks, tractors, cars and motorcycles which are used at Hamilton Field. This test determines whether or not Brown has any aptitude for such work and, if so, whether or not he needs further training. The interview and results of the trade test are then placed before the personnel classification committee, composed of specialists in each of the many trades followed at Hamilton Field. The member of the committee who is a specialist in automotive repair then reports whether or not Brown is suitable for assignment to the garage. If he is not suitable, Brown is then tested in another trade of his preference. If he is suitable, Brown is assigned permanently to the garage where he either assumes the responsibility of a trained mechanic or undergoes a thorough apprenticeship at the hands of instructors, according to his ability.

The classification board then has achieved three very tangible results with Bob Brown,- first, it has made the most desirable use of his services so that the government gets value received for his wages; second, competent hands have been chosen to work upon valuable Government property and thus safeguard the taxpayers' investment; third, Bob Brown has been placed in a position that he especially likes and one which, through his interest, will furnish him a valuable and worthwhile trade after his enlistment in the Army.

True, this is far from being Brown's sole assignment to duty. He has other things to learn - strictly military subjects. He, as well as every other man entering the Army, must undergo an intensive period of recruit training in which he learns drill, military hygieno, and similar subjects necessary for his well being, but Brown, placed in a particularly interesting position as his main duty, is a satisfied, efficient workman.

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Western Air Express set a new passenger record over their San Diego-Salt Lake route last September with the flying of nearly one million passenger miles, a total of 3,500 passengers being carried over its system from Great Falls to San Diego. Nearly 65,000 pounds of mail were flown, a twenty percent increase over the corresponding month in the year 1936. Over twenty tons of air express were carried.

"YOU CAN'T PARADE THEM LIKE SOLDIERS"
By a Power Plant Engineer

High output engines have sounded the death knell of the would-be Napoleons on big white horses who like to watch the boys go by in fancy parade on the ground.

Those of us who lean toward the academic side of the situation know that B.M.E.P.'s (brake mean effective pressures) have practically doubled since the good old days. All the technical ingenuity of man has been gathered together to guide every available molecule of air around through the fins of our air-cooled engines. Even under the most favorable conditions, heat transfer from the engine to the air is scarcely adequate.

On the ground all of these troubles are magnified many times. In fact, some of the better informed authorities claim that we are wearing our engines out on the ground and not in the air. Included in this category is our old mechanic, brought up on O.X.'s and Liberties, who must park his ship on the line and let it buzz for one-half hour each morning. "If the airplane and engine were working all right the evening before, why the half hour to find out the same thing the following morning?" he asks.

Cowl design and prop wash cause some fancy airflows, particularly in air-cooled engines when operated at less than flying speed. Such variations may prove to be anything from reverse flow to practically no flow at all through the fins and the cylinders.

With reference to our new high output liquid-cooled engines, a similar condition prevails. Radiator and oil cooler airflow depend, for adequate cooling, entirely upon the high air speed of the airplane. To obtain high performance we must produce low drag, etc. Any type of large air scoops which will be adequate for cooling while parading airplanes on the ground, or during mechanic's warm-up, means a tremendous sacrifice of speed in the air. These details will be self-evident to the tactical pilot upon his first contact with the newer airplanes now leaving the industry. From the standpoint of airplane and engine efficiency, all pilots should develop the habit of getting comfortably settled in the cockpit and being ready for take-off shortly after starting the engine. If the engine is running on the ground, remember - every minute of fidgeting in the cockpit costs money.

Advice for take-off formation from the materiel standpoint is - get in your airplane, get comfortable, start your engine, taxi out, and get going, or you may not get over the fence at the end of the field.

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FAST TRAVELING FOR B-17's

Three B-17 Bombardment airplanes, commanded by Major H.L. George, with wing ships being flown by Captains H.M. Wittkop and D.H. Alkire, departed on November 14th from Langley Field, Va., enroute to March Field, Calif., the southern route to Maxwell Field, Ala., and then a Mercator course of 273 degrees to destination being followed. The weather was excellent, but head winds of gale velocity reduced the ground speed at times to 125 m.p.h.

Radio communication with the 2nd Wing was maintained for approximately 1900 miles, and with the 3rd Wing for about 1,000 miles.

No excessive fatigue was experienced by the crew, but the altitude of 12,000 feet over such a protracted period necessitated the use of oxygen. The take-off from Langley Field was at 21:00 EST on November 14th, and the landing at March Field was at 12:00 EST, November 15th.

The return trip to Langley Field was made via Randolph Field, Texas, and proved rather uneventful. The elapsed time between March Field and Randolph Field was 4 hours and 45 minutes, while that between Randolph and Langley Fields was 8 hours and 30 minutes.

FIELD TRAINING FOR 4th OBS. SQUADRON

The 4th Observation Squadron, stationed at Luke Field, T.H., recently returned to its home station after spending a week in field training at South Cape, Hawaii. Although handicapped by high winds, an excellent camp was established and a great deal of useful field training was accomplished. The entire personnel and equipment was transported by air, which in itself served as an important training item. Twelve officers and thirty-one enlisted men made the trip.

The Black Widow Spider population, previously reported upon in the News Letter, seems to have decreased slightly, and the News Letter Correspondent expresses the hope that this decrease may be attributed to the toads which were imported about a month ago in the belief that the spiders would appeal to them as an article of diet.

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It is the purpose and desire to publish in the News Letter items of interest covering activities at all Air Corps fields and stations. Contributions will be welcomed from Randolph, Brooks, Wheeler and Albrook Fields from which no news has been received for some time.

ACTIVITIES OF THE 97TH OBSERVATION SQUADRON
By the Mitchel Field Correspondent

The 97th Observation Squadron (Corps and Army), Air Corps, at Mitchel Field, N.Y., seems to be school-wise these days. Everywhere we turn in this outfit we find some form or evidence of squadron or individual schooling instinct, and it is satisfying to note this, particularly when so much is being published on modern GHQ aviation - readiness for combat, keenness, military efficiency, etc.

The 97th Observation Squadron (Corps and Army) is, in fact, an M-Day Force. It is now a 130-man outfit. This increase was recommended by Major George C. McDonald, Air Corps, former squadron commander and now a student at the Command and General Staff School, and has been kept active by the present skipper, Major Charles A. Horn, Air Corps.

The first step in this direction was the appointment of officers to combat crews and the establishment of flights, with regularly assigned pilots, observers, mechanics, radio operators, photographers, etc. This system has been used daily for the past year, and its practicability most definitely indicated by the Squadron's outstanding success during the summer season of 1937, when one or more airplanes have been detached from the Squadron, operating in the field in cooperation with all types of ground arms, away from home airdrome for periods of as much as three weeks. On these missions the duties performed and field conditions encountered were very much similar to those which it is anticipated would exist under actual service conditions.

The second move was the formation of an actively functioning squadron intelligence section. Believing this a most necessary section for any Air Corps organization, and particularly so for an observation unit in times of peace or war, the present squadron commander designated 1st Lieut. Richard H. Wise, Air Corps, as Squadron Intelligence Officer, with two Reserve officers as assistants - 2nd Lieuts. Alfred G. Witter and Sterling G. Harvey. These officers have been instructed in the primary functions and channels of an Army Intelligence System, its close relation with Operations Plans and Training, and some emphasis placed on the prompt rendition of complete and accurate observers' reports, care in taking aerial photographs, methods of successful cooperation with various ground arms, etc.

Since the beginning of the present fiscal year, this Squadron has been conducting ground schools and "rainy day" schedules for both officers and men. The officers' courses include Ground and Air Rules; Airplane and Engine Maintonance; Communications; Armament; Instruments; Photography; Meteorology; Air Navigation; Chemical Warfare, and Technical Administration. This instruction will be continuous throughout the training year. All enlisted men are schooled in subjects relating to their particular departments, and have recently undergone unofficial rigorous practical examinations in preparation for the forthcoming annual Air Mechanic examinations.

The Squadron has been sending its regular quota of enlisted men to the various courses conducted at Chanute Field in the Air Corps Technical School, and has a long waiting list for this activity. The latest orders include: Armament, Pvt. 1st Cl. John D. Pardee; Photography, Pvt. Herbert A.E. Ruhrman, and Radio Communications, Pvt. 1st Cl. Carmen R. Gismondi. In addition, there are two men now attending the base radio flight operator's course. Two officers of this organization were sent to that school within the past six months, and another detailed to study weather at the California Institute of Technology. A previous squadron commander is now attending the Command and General Staff School, and the present "Skipper" is under orders for the same course, beginning in the Fall of 1938.

In addition to these activities, it has been noticed that a number of the enlisted men are spending a great deal of spare time and a few spare nickels in the night schools of nearby Jamaica and Brooklyn. Others are pursuing various correspondence courses for theoretical technical training, and at least three are now enrolled in the 2nd Corps Area Army Extension Schools with a view to ultimate commissions in the Officers' Reserve Corps.

All this is taking place to the end that the 97th may properly and successfully fulfill its primary mission: "To observe, record and report with deadly effect."

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33RD PURSUIT IN INTERCEPTION PROBLEMS

Some of the most interesting work at Langley Field at the 33rd Pursuit Squadron front is the interception problem. The Squadron usually assigns two or three officers to run the plotting board and the Flight Commander takes over the flying end. Zig-zagging courses of the "enemy" formation keeps the friendly Pursuiters on their toes and calls for accurate timing and exact navigation. Each mission usually results one hundred percent successful.

The mornings receive their debut with flight gunnery on tow targets at an altitude of 15,000 feet.

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HARMONIZATION FOR HIGHER SCORES

By 1st Lieut. Norman H. Ives, Air Corps

THE efficiency with which a Pursuit airplane can carry out its defensive or offensive mission is dependent mainly upon the operation and effective use of the fixed machine guns. Disregarding the mechanical and electrical difficulties encountered in gunnery, and assuming that the rate of fire synchronization, etc., are satisfactory, there is one major consideration which may mean the difference between highly successful accomplishment of a mission and failure: that vital factor may be best described as the ability of the pilot to hit the target.

Inasmuch as the ability of the pilot to hit the target does not depend solely on the individual's flying ability or the functioning of the armament equipment, it is important that all of the contributing factors be considered. Low scores are generally attributed to rough air, poor flying qualities of the airplane, erratic piloting, or just poor marksmanship. Actually, about eighty percent of the trouble may be traced very definitely to one cause: improper harmonization.

Merely mounting sights and guns on an airplane in such positions as will cause the trajectories of the bullets to intersect the line of sight at a given range is not sufficient harmonization to insure hitting the target consistently. Unless the pilot can hold the sights on the target long enough to fire an accurate, destructive burst, the results are erratic and considerably below the desired standards of gunnery efficiency.

The most important factor in harmonization, and the point that is most frequently overlooked, misunderstood or unknown, is this: It is impossible for a pilot to fly a straight, true course to the target, holding the sights on the target long enough to insure accurate, destructive fire, unless the sights are perfectly parallel with the flight line of the airplane.

As stated above, the necessarily steady, accurate approach does not depend solely on the flying ability or finesse of the pilot. The steadiest pilot cannot hold his sights on the target and fly a straight line if those sights indicate a line which the airplane cannot possibly make good, because of the design, rigging, or inherent flying qualities of the airplane.

Mounting the sights parallel with the flight line does not mean that the sights are parallel with the longitudinal axis of the airplane. The longitudinal axis and the flight line are seldom the same. The longitudinal axis remains constant, whereas the flight line of an airplane varies, in relation to the longitudinal axis, with an increase or decrease of speed, altitude and load. Therefore, it is necessary to select an airspeed and altitude, find the exact angle between the flight line and the leveling lugs of that airplane for the desired airspeed and altitude, and then align the sights accordingly.

The correct angle between the flight line and the leveling lugs for any airplane equipped with fixed machine guns may be obtained from the gun sighting chart prepared by the manufacturer and included in the airplane handbook.

The gun sighting charts are plotted to show the angle between the flight line, with full useful load less one-half the fuel load for all speeds within stalling and fifty percent greater than maximum level flight speed, and the line established by the leveling brackets or leveling datum for each 5,000 foot altitude. For example, a typical gun-sighting chart will show that at an airspeed of 150 miles per hour, at sea-level, the flight line will be three degrees above the line parallel to the leveling lugs. That is, the nose of the airplane will be three degrees above the line the airplane is actually flying. At a speed of 280 miles per hour, at the same altitude, the flight line of that airplane will be slightly below the line parallel to the leveling lugs. If the sights are aligned with the leveling lugs, it is easy to see that it is impossible to fly parallel to the line of sight except at the one speed and altitude at which the flight line and the longitudinal axis are the same.

If the line of sight and the flight line are not absolutely parallel, the pilot may get the sights on the target but cannot possibly hold them on the target because the airplane follows a line which may be several degrees above or below the line of sight. As the airplane approaches the target, the sights move up or down on the target, although the pilot does not vary the angle of approach. In order to return the sights to the target, the pilot must change the vertical angle of approach of the airplane. The new angle will permit the sights to remain on the target momentarily and then the angle must be again corrected to return the sights to the target. This results in a "dive and zoom" approach. Theoretically, the approach described is approximately the shape of a parabola. Actually, due to the pilot's efforts to make the corrections necessary to keep the sights on the target, the airplane "hunts" up and

down on the parabolic course. The "dive and zoom," of course, is very shallow and hardly perceptible to onlookers and usually not of sufficient magnitude to be noticed by the pilot. However, that irregular approach is enough to account for the difference between expert gunnery and just average or poor marksmanship. A change of one degree in the angle of approach, at a range of 700 feet, will move the center of impact more than twelve feet.

It must also be remembered that in mounting the sights parallel with the flight line there must be no lateral divergence. This does not mean, for instance, that all C-4 sights will read "0". If the fuselage remained perfectly true, and the sight post mounting sockets were accurately aligned, then the sight would always read "0". Adjustments to right or left are usually necessary to bring the line of sight parallel with the flight line. By attaching strings of equal length (about 30 feet long) to the leading edges of the right and left wings, equal distances out from the center of the fuselage, and by bringing the free ends together in front of the airplane at the level of the sights, an accurate sighting point is provided for aligning the sights, laterally, parallel to the flight line. If the point at which the strings meet cannot be seen through the sights with the rear sight set at "0", then an adjustment is necessary. After accurately aligning the sights parallel to the flight line by the above method, the sight should never be moved from the flight line in order to intersect the line of fire at a given range or to move the point of impact in relation to the center of the target. Move the guns,- not the sight. The position of the guns cannot in any way affect the flying of the airplane. It is absolutely necessary that the strings used in establishing the point directly in front of the airplane be exactly the same length. Care must be exercised to prevent stretching one string more than the other, or an appreciable error may result.

The same principles and factors involved in harmonizing and using the C-4 sight apply to the N-2 optical sight. The actual procedure in aligning the N-2 sight varies slightly, but the results are the same, and it is just as important accurately to mount the sight so that the line of sight is perfectly parallel with the flight line of the airplane. If the sights and guns on all the airplanes in a squadron are harmonized properly, it will make no difference in a pilot's scores whether he flies his particular assigned airplane or some other airplane in the squadron. As long as the correct airspeed and altitude are maintained, a steady, true course can be flown, and the sights can be held on the target with comparative ease. In many Pursuit squadrons it is necessary for two or more pilots to use the same airplane for gunnery. If each pilot aligns the sights and guns in accordance with his own understanding of harmonization, the result will be an unnecessary waste of time and, in most cases, average or poor scores. Furthermore, unless the sights on all airplanes in an element or flight are correctly aligned parallel with the flight line, a close element or flight formation cannot be maintained while approaching and firing on a target. For instance, if the rear sight on the leading airplane is off-set to the left, that airplane will describe an approximate parabola to the right as long as the pilot sights on the target. If the rear sight on the airplane in number two position is off-set to the right, then that airplane will follow a parabolic curve to the left during the approach if the pilot attempts to hold the sights on the target. The result is that the wing men in a formation are forced to disregard their sights and fly for position on the leader. This accounts, to a great extent, for the inaccuracy of formation fire. The advantages of standardized, correct harmonization are obvious.

The question of whether to align the sights or the guns parallel with the flight line is still frequently discussed and argued among pilots. There are quite a few erroneously informed pilots who insist on moving the sight to harmonize with the guns and to change the center of impact on the target. Those are the pilots who complain about the flying qualities of the airplane, and find it necessary to develop bad habits of skidding or slipping in order to hold the sights on the target.

Any doubt regarding the sligning of the sights and guns in relation to the flight line may be easily and quickly dispelled by the following practical demonstration: Using an automobile or any vehicle to simulate an airplane, mount a C-4 sight parallel with the longitudinal axis and sight on an object about 100 yards distant. (If it is not practicable to mount a sight on the vehicle, a chalk line on the hood, the center hinge, or a mark on the windshield in line with the radiator ornament will suffice. Require the "pilot" to drive the car slowly to the "target," holding the sight steadily on the selected object. If the sight is absolutely parallel with the longitudinal axis of the vehicle, the resultant course to the "target" will be perfectly straight. If the wheel tracks or tire marks are not visible, the line of approach may be shown by fastening a stick or wire on the vehicle in such a manner that it will scratch or mark the surface over which the vehicle passes. Next, move the sight, line, or windshield marker so that the line of sight is at a

slight angle to either side of the longitudinal axis of the vehicle and repeat the run. The "pilot" will be unable to hold the sight on the target without gradually swinging the vehicle to right or left. The approach, as marked or shown on the surface, will be a parabolic curve.

The above demonstration should prove conclusively that the line of sight and the flight line must be the same in order to hold the sights on a target and make a straight approach. Although this demonstration shows only the erratic approach due to lateral divergence of the sight from the flight line, it must be remembered that exactly the same principles and factors are involved in vertical divergence. Add the vertical and the lateral curves together and the answer is erratic, mediocre gunnery. Pilots cannot expect to make consistently high scores if their airplanes cannot be made to fly a steady, straight course to the target. Correct, careful harmonization will enable average aerial gunners to raise their scores considerably, and the experts will get more consistent results.

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NEW LARGE TOW TARGET

The development of a tow target, the effective area of which is 300 square feet - much larger than the Types A-5 or B-12 - has practically been completed at the Air Corps Materiel Division, Wright Field, Ohio. This type of target embodies a series of short sleeves with mouths radially mounted at the rear of a flat flag and arranged so that the target may be towed either in a horizontal or a vertical plane. Because of the greater area of this target, scores for more accurate firing data may be obtained and visibility at longer range is afforded.

For the purpose of determining whether or not this design was suited for aerial gunnery practice, the target was taken to Selfridge Field, Mt. Clemens, Mich., on November 2nd. Six practice flights by 1st Pursuit Group pilots over a two-hour towing period were accomplished and proved that the design with minor modifications would be entirely satisfactory. For use in connection with the target, a Type C-5 windlass of 7,000 ft. cable capacity was developed. This windlass is similar to the Type C-4 except that it is made larger to accommodate approximately twice the length of cable. An air-cooled brake drum and an integral electric motor for rewind of the cable have been incorporated to replace the impeller drive used on other windlasses.

Action has been initiated to procure four of these windlasses and a number of the new type targets for service test.

MONUMENT DEDICATED TO WAR-TIME FLYER

In the presence of approximately 1,000 statesmen, diplomats, government officials, Army and Navy officers, veterans, relatives and friends, a monument to the memory of Lieut. Norman Prince, World War flyer and organizer of the famous Lafayette Escadrille, was dedicated on Monday, December 6th, at the Washington Cathedral, Washington, D.C.

Fifteen members of the Norman Prince Post of the Veterans of Foreign Wars and an equal number of members of the Norman Prince Post of the American Legion came from Boston to constitute a guard of honor around the monument. Mayor Frederick W. Mansfield, of Boston, and Mrs. Mansfield, likewise attended, offering a wreath in tribute, in the name of their city, to "one who was her son."

The counselor of the French Embassy, Mr. Jules Henry, represented his country at the ceremonies in the absence from the city of the French Ambassador.

"It is a significant circumstance," said the Right Rev. James E. Freeman, Bishop of Washington, who conducted the rites, "that the first notable monument and memorial to be placed here is in honor of an American youth who made the supreme sacrifice not under his own colors but under the tricolor of France. He was a volunteer who died for a cause he loved."

General John J. Pershing, representing the armies of the United States, also praised Lieut. Prince as a chivalrous hero who gave up wealth and ease for martyrdom in the name of righteousness. The A.E.F. Commander was followed by Major General Adelbert de Chambrun, representative of the armies of France, who told of the hero's career as an organizer of the Lafayette Escadrille and declared that his name, held in grateful remembrance by the people of two nations, will be a "sentiment that always will keep us united."

Army Air Corps officers present at the ceremonies were Colonels Chalmers G. Hall, Frank P. Lahm, Lieut. Colonels Michael F. Davis, Arthur E. Easterbrook, and Major George L. Usher.

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A Pako Model C-37 photographic print dryer was recently delivered to the Materiel Division, Wright Field, from the Pako Corporation, Minneapolis, Minn. This dryer was procured for comparative tests with existing drying equipment, with the idea that it would lend itself to modifications and be suitable for use in the portable photographic laboratory. It has a capacity of approximately 300 8 by 10-inch prints per hour. The drying is accomplished by gas, and the prints are carried over the heated chamber by fabric belts.

AIR CORPS DEVELOPS HOMING INSTINCTS
By the Hamilton Field Correspondent

Each year Hamilton Field initiates a school in navigation with the intention of going the homing pigeon one better - that is, to go to a distant place as well as to return to the home port. At the beginning of the California winter when even the ducks ride the waves, all pilot personnel not already qualified in air navigation go to their classes to find out in practice why Columbus sailed west when he wanted to get east.

The course covers a period of sixty hours and includes the theory of dead reckoning and celestial navigation and actual air navigation problems. The first twenty hours are devoted to definitions, instruments, and map study. The four main map projections, Mercator, Gnomonic, Polyconic, and Lamber Conformal are analyzed and the advantage of each emphasized and sample charts of each type are constructed in the classroom. Each embryo navigator acquires complete familiarity with all navigation instruments and is required to calibrate each type.

Air speed calibration is accomplished by timing the flight between two points of known distance and checking the meter reading with the actual speed. Compasses are either swung on the ground over a large compass-base or by heading into the sun, and by determining the angle of the sun's shadow for that instant it is possible, with the aid of the modern developed gyroscope, to calibrate from any known direction to 180 degrees from that position.

Drift sights are calibrated with the aid of a surveyor's transit and plumb bobs. All this is accomplished so the modern airplane navigator can correct for instrument installation errors which are always present in any graduated recorder.

Dead reckoning navigation is the most commonly used method for keeping a log of where one is or will be, and is used by all vessels at sea during continued fogs and bad weather. This is the only system available, and many a ship's log will show positions at the end of a day as a Dead Reckoning position. It is simply using Speed times time elapsed to give distance and correcting this for wind and instrument errors. With present types of navigation instruments two readings of the amount of drifts of different directions will give the wind force and direction and the actual ground speed even though the airplane is two or three miles above the earth.

On completion of the preliminary forty hours of school in Dead Reckoning navigation, all students are required to navigate a number of missions over water where there are no known points to aid in determining where they are. Such missions are planned beyond the sight of land and the navigator's accuracy is computed by the arrival point on the coast.

As soon as a navigator can plot his position within one mile in a hundred miles and estimate his arrival at a point within one minute for each hour out, he is sufficiently familiar with air navigation to begin the problems confronting the Air Corps of patrolling and defending the coast.

As all the large vessels at sea send in weather reports every twelve hours with their positions, it is possible to use them as objectives in interception problems. This form of navigation requires the most accuracy and affords the very best type of training. Many an ocean traveler a day away from San Francisco could look up at a solitary Army airplane swooping down on the ship from the blue and have the comfortable feeling that he is nearing a safe and dependable port.

Celestial bodies, when visible, are available as another aid for the air navigator and can be made use of to determine one's exact position day or night by computation of their height and angle.

The most modern navigation aid, the radio direction finder, which, if developed to operate under severe electrical conditions, will greatly simplify navigation methods and insure accurate air navigation even in cloudy weather, when reference to celestial bodies for rectifying position is impossible.

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BT-9 AIRPLANES FOR LANGLEY FIELD

Four North American BT-9 airplanes were recently ferried to Langley Field, Va., from the factory at Inglewood, Calif. A small two-place, low wing monoplane with sliding covers over the cockpits, the BT-9 will fill a new need in the Second Bombardment Group, to which three have been assigned. They will be used as "couriers" - messenger and utility airplanes - for those numerous missions wherein the employment of the large Bombardment planes would not be economical. The fourth BT-9 will be assigned to the Eighth Pursuit Group, also as a "courier."

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The first of a series of nine high altitude type Douglas DC-3's was recently delivered to Pan American Airways at the Brownsville, Texas, base. The plane will form the primary step to getting into the sub-stratosphere, the final step being made with the 21-ton "Sub-stratosphere Liners" now being built for the line by the Boeing Company.

V-7578, A.C.,

AND I LEARNED ABOUT FLYING FROM THAT

In accordance with repeated requests in the News Letter for Army pilots to submit for publication unusual incidents connected with flying, from which certain lessons were learned and the narration of which would prove helpful to other pilots, an Air Corps pilot submitted a report of two such incidents which occurred several weeks ago, and which are given below, as follows:

After landing at Chanute Field following a cross-country flight from Offutt Field in an A-17A, I found that my brakes were locked. The plane slid along on the turf as if it were going to crack up, but it finally stopped right side up. I tried to taxi, but was unable to move. I then pressed the rudder pedals and heard the parking brake release. After that I taxied without difficulty. Inasmuch as I did not take off with the parking brakes lock on and distinctly remembered having released it, I believe that the fact that I spent ten minutes blind in one of the most violent storms which I have ever experienced - literally being shaken almost to pieces - must have put the parking brakes on in some unexplained manner.

Corroborating this is the fact that the flap lever, although up when I took off, was down, and when I put my landing gear down the flaps went down. I never lower the flaps with power, but utilize the hand control. I had an indicated speed of about 170 miles when I put the wheels down. The flaps instantly went down full, and why they did not rip off is more than I can understand.

On a flight from Washington to Chanute Field in a B-18, the hydraulic pressure gauge blew out, rendering inoperative the automatic pilot, the landing gear, the flaps and the brakes. Two-thirds of the oil leaked out of the hydraulic tank, still leaving me enough to put the landing gear down with the emergency hand pump. I landed the ship at Chanute Field without difficulty, without brakes or flaps.

The following conclusions are reached:

(1) The minute I noticed the pressure going down in the hydraulic system I should have put my wheels down. Possibly I could still have gotten them down with the remaining pressure, thus leaving one-third of the oil for use on flaps and brakes.

(2) Had the break occurred in the bomb-bay line, by opening the bomb-bay doors I might have closed this line and rendered the system operative. In this instance it did not happen to be the case.

(3) Before using the auxiliary hand pump, I tried to snap the wheels down through violent use of the elevator. I did this at 110 miles per hour. I believe I would have had a greater chance of success at a higher speed - say 170 or 180 miles per hour.

(4) The turf at Chanute Field was soft, due to a recent rain. This lowed up the roll of the ship considerably and I didn't roll more than half a mile. Had I landed on a hard surface runway I probably would have rolled the entire length and crashed into something. Consequently, if I had it to do over again, I would make sure to land on a turf field.

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SOUTH AMERICAN PILOTS VISIT BOLLING FIELD

A group of six airplanes, constituting a "Good Will" flight of the Pan-American Union, arrived at Bolling Field on November 24th, the visiting pilots being on a tour of a number of American cities. The flight consisted of six Taylor "Cubs," piloted by representatives of several South American countries, and wad led by Captain Laborde.

The flight departed from Bolling Field on November 25th.

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COMMEMORATION OF KITTY HAWK FLIGHT

In commemoration of the first flight of the Wright Brothers at Kitty Hawk, North Carolina, December 17, 1903, all Army Air Corps stations have been directed to place all available airplanes in the air on December 17th at the hour of the first flight, weather permitting.

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HIGH TENSION IGNITION CABLE

The Air Corps Materiel Division at Wright Field, Dayton, Ohio, announces that, as a result of considerable research, a new type of high tension ignition cable has been developed which is at present undergoing service test. The new type of cable has been reduced in outside diameter from the present standard of .285 inch to .200 inch. This was accomplished by utilizing a steel stranded conductor and a greatly improved rubber insulating compound. The new type of cable has the advantage of requiring a smaller shielding manifold, with a consequent saving in weight and space.

Laboratory tests of the new type of cable have conclusively shown that it meets all the performance requirements of the present ignition cable specifications. In addition, it is definitely superior to the standard cable which was procured approximately two years ago.

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Nearly every Army pilot has had one or more unusual experiences in flying which taught him valuable lessons. You can help others by telling about them in the News Letter.

V-7578, A.C.

WHAT TO DO WHEN THINGS GO WRONG
By the Mitchel Field Correspondent

The following was submitted as a suggestion in accordance with a recent order emanating from GHQ, which requires Check Lists for co-pilots and passengers in all types of airplanes. The O.I.C. was attempting to make up such a Check List and one of the enlisted men of the O-46 flight presented him with this:

INSTRUCTIONS TO ALL PASSENGERS IN O-46 AIRPLANES

1. In case of engine failure or other minor trouble such as loss of wing or wings, loss of propeller, fire, etc., the following procedure will be carried out:

a. Remove all loose radio equipment and tools.
b. Ask Pilot for Form 1 and fill out same.
c. Send radiogram to Corps Area Headquarters requesting permission to make emergency parachute jump.
d. Check altitude and position, being sure to include this information in the above mentioned radiogram.
e. Make list of best telephone numbers in the vicinity.
f. Notify Pilot that you are ready to jump.
g. JUMP.

2. After leaving ship proceed as follows:

a. Count ten (it may be necessary for some passengers to carry slide rule to accomplish this. If necessary it will be included in the bundle of spare radio parts and tools carried).
b. Pull the rip cord. This is quite essential.
c. The usual procedure here is for the parachute to open.
d. If step b or c, or both, are omitted, immediately upon landing the passenger will proceed to the Post Operations Office, secure and fill in Form No. 1311 (Request for Sympathy) and mail same to the Chief of Chaplains, U.S. Army, Washington, D.C. This will be accompanied by an Unsatisfactory Report on the parachute used.
e. The Form 1, radio, spare parts, tools, etc., will always be carried by the passenger on his jump.
f. In some cases the Booklet "How to Swim in Three Easy Lessons" will be found very helpful.
g. In other cases, the passenger has found that the Booklet "How to Fly in Nine Easy Lessons" is sometimes of value, but it has been found by the Trial and Error Method that the usual passenger never gets beyond Lesson Three before the ship comes in somewhat violent contact with the ground or some other obstacle which sometimes has disastrous results.

5. One of the most important things to remember is that when passenger, having carried out the above instructions, proceeds to his barracks or place of residence and he observes a group of his friends he will practice repeating "Well, boys, we were flying about ....." This practice is very necessary, as after the first week or two after his jump the story will be no longer than that, or the Medical Officer will ask him why he is talking to himself.

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NAVIGATION TRAINING AT LANGLEY FIELD

Continuing the program of training co-pilots and bombers of B-17 crews in celestial and dead reckoning navigation, Captain A.Y. Smith, Air Corps, held a class on November 18th, with the following officers in attendance: Lieuts. T.L. Mosley, I.R. Selby, J.B. Stanley, R.S. Freeman, C.J. Cochrane and J.B. Montgomery.

Two hours were devoted to a careful explanation of the Ageton method of solving triangles. Following this lecture, a problem was worked using assumed figures for the time and sextant readings. After all of the men become sufficiently proficient to aid the regular navigator in his celestial work, Captain Smith expects to take up dead reckoning navigation with a view to training his pupils so that on long flights they will be able to relieve the regular navigator.

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COOPERATION WITH CHEMICAL WARFARE SCHOOL

The 37th Attack Squadron, Langley Field, Va., flew a cooperative mission with the Chemical Warfare School at Edgewood Arsenal, Md., on November 18th. The operations consisted of two main chemical missions. The first was a smoke screen laid by five airplanes. The second mission consisted of an attack by all five airplanes on silhouette targets with four forward machine guns, followed by a gas attack of tear gas and dye on the students who were marching along a road.

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With 44 world records to the credit of its pilots, Italy, as of July 1, 1937, held most of the official aviation marks in the categories recognized by the Federation Aeronautique Internationale. The United States was credited with 39 major records, France with 22, Russia with 15, Great Britain with four, and Germany, Japan, Czechoslovakia and Poland with one world mark each.

HISTORY OF THE SECOND BOMBARDMENT GROUP

The Second Bombardment Group, the home station of which is at Langley Field, Va., was originally the First Day Bombardment Group, First Pursuit Wing, when it was organized at Moulon, France, September 10, 1918. The Group then consisted of the 96th, 20th and 11th Day Bombardment Squadrons, the 464th Construction Squadron and the 12th Photo Section. Of the Bombardment Squadrons, the 96th was the veteran organization, having been engaged in active operations on the front since May, 1918. It was the pioneer bombing squadron of the American Air Service, and its history is crowded with brave and thrilling exploits. Organized at Kelly Field, Texas, August 20, 1917, this Squadron had no definite idea of what lay in store for it, as was true of all other infant organizations of the rapidly growing army. It was not known whether it would be among the fortunate units to be sent across the water for immediate service in the field or whether it would be retained for equally important but less stirring duties at some home flying field.

On October 9, 1918, the Squadron was ordered to Mineola, L.I., New York, to be outfitted for overseas service. Sailing from New York on October 27th, it arrived at Liverpool, England, November 10th; moved to Southampton, and shortly afterwards departed for France, with station at the 7th Aviation Instruction Center, Clermont-Ferrand, Puy-de-Dome. Here the organization of the Squadron was completed and the mechanics given a course of training on the Breguet Day Bombardment plane and on the Renault motor at the nearby Michelin factory where the planes were made. This training later proved invaluable when the Squadron was sent to the front. On May 18th, the Squadron was sent to Amanty Field, near Gondrecourt, and became an established bombing unit in active service against the enemy. The flying equipment consisted of ten old instruction planes, type Breguet 14 B 2, with 300 horsepower, Type 12 F.E.V. Renault motors, which had been transferred from Clermont-Ferrand.

The first important bombing mission took place late in the afternoon of June 12th, when a flight of eight planes took off to bomb Dommary-Baroncour. The Squadron was practically without precedent for guidance, as it was isolated from other flying squadrons and had only two pilots on the rolls who had ever crossed the lines. The Squadron's baptism of enemy aircraft fire was received over Ftain, and the "Archies" were particularly active and accurate over the objective. Nevertheless, good hits were scored by the entire flight. The formation was attacked on the return flight by two enemy scouts and one biplace fighter. The pilots closed and held a tight formation, however, and the observers were able to beat off the attack. One plane received two explosive bullets in the engine, but was able to reach the airdrome. Three planes were forced down with empty tanks, but all landed safely. Such was the unqualified success of the First American Bombing Raid.

Raids were scheduled daily, when weather permitted, until the middle of July, when the Squadron, through losses over the lines, was reduced to two planes. It was several weeks before new equipment and personnel arrived. In all, the Squadron was engaged in operations in the Toul Sector, at St. Mihiel, and the Meuse-Argonne, first and second offensives. It made nearly fifty bombing raids into enemy territory, destroying a great amount of property and gathering much valuable information. Participating in 19 combats, it was officially credited with the destruction of 14 enemy airplanes. The Squadron suffered 41 casualties, consisting of 12 killed, 12 wounded, 15 taken prisoners and 2 missing. During the month of August, the 96th operated continuously, with one to three raids a day, whenever it was at all possible to get over the lines, with only a few minor casualties. In September, however, the casualties it suffered were exceeded by no other squadron at the front. The last raid of the Squadron proved to be the hottest of its many encounters with enemy airplanes. A formation of five planes bombing Montmedy, after making some wonderful hits, was attacked by 15 enemy airplanes in a battle which lasted 20 minutes. Due to the expert leadership of the flight commander and the skillful flying of the remainder of the formation, the enemy was not once afforded a steady target. Two enemy planes were brought down, one in flames. One of our observers was shot through both hands and one plane was shot up so badly that it was forced to land at a French airdrome.

On September 18, 1918, the 166th Bombardment Squadron joined the Group, completing its organization. Little attention had been paid to American Bombardment planes up to this time. But immediately upon the advent of the First Day Bombardment Group, the Germans moved several of their crack circuses down to oppose them. That the heavy odds of the enemy were met successfully is recorded in the following citations accorded the Group:

"COMMENDATION OF WORK OF FIRST DAY BOMBARDMENT GROUP.
Headquarters First Army, Air Service
September 19, 1918.
V-7578, A.C.

"1. The work of the 1st Day Bombardment Group during the battle of St. Mihiel, and in the operations after it, has been such as to bring out the praise and appreciation of all the troops of the Allied Service participating in the operations. This Group, under most difficult conditions, with new equipment, pilots and observers, who had recently come up on the front, has shown a devotion to duty and initiative which has not been exceeded by any troops on the front.

"2. The work of the 1st Bombardment Group has materially aided in hindering hostile concentration troops, troop movement along the roads, and in sweeping the enemy back, thereby making lighter the work of our own Pursuit Aviation along the immediate front.

"3. I desire that all members of the Group be informed of the high regard in which their work is held throughout the Army.

(s) Wm. Mitchell,
Colonel, A.S., First Army."

TELEGRAM

"HEADQUARTERS A.E.F.
Chief of Air Service

"First Day Bombardment Group -

"Excellent work done by the officers and men of your Group during the recent offensive deserves and has received hearty commendation. Congratulations to you and your command on the record you have made for yourselves and for the Air Service. It is good to know that we can rely upon you to keep up this fine work which counts for so much in bringing about the results desired.

(s) General Patrick."

The 20th Day Bombardment Squadron, which had joined the 96th at Amanty on September 7th, as a step in the process of organizing the Bombardment Group, started operations September 12th by conducting several Army reconnaissance missions with the opening of the St. Mihiel offensive. In was on this day that the Squadron suffered its first casualty. The 20th was the first squadron of American built planes to drop bombs over the enemy lines. On September 14th, formations from the 20th, 11th and 96th Squadrons conducted raids over the enemy lines, the first effort of the Group. The following day, however, proved most disastrous to the Group. A formation of six planes from the 20th Squadron left to bomb the railroad yards at Conflans. Due to the excessive strain put upon the planes on the first day of the offensive, it was necessary for all save the leader to turn back before the lines were reached. Although knowing the almost insuperable odds of a single Bombing plane crossing the lines, a try was made for the objective. Four Fokkers were met and driven off in the dash for the railroad center. The bombs were dropped on the objective. Three more planes were met and driven off on the return to our lines, and the lone plane, riddled with enemy bullets, finally reached its field. On that same day, out of a formation of six planes from the 11th Squadron, only one staggered back to its home field and it was in a riddled condition.

Such is the story of the Group for each of the squadrons up to the end of operations. On October 18th, the 166th Squadron, now the 49th Squadron, started on its initial raid on Buzancy with 13 planes. Eight planes reached the objective and dropped 800 kilos of bombs. The formation was attacked by 20 Fokkers and Pfalz, and in the course of the combat two of its planes were crippled but landed behind our lines. One enemy plane was destroyed. In less than one month of operation, the 166th had a record of conducting 12 successful raids, dropping 10,200 kilos of bombs, destroying six enemy airplanes with a loss of one observer killed, two observers and one pilot wounded and not one plane lost in enemy territory. After the Armistice, the Squadron was moved with the Army of Occupation to Germany, with station at Treves, where it remained until its return to the United States in April, 1919.

After the Armistice, the remainder of the Group received notice of disbandment on December 12, 1918. It arrived in the United States in February, 1919, and was demobilized at Mitchel Field, N.Y. The Group was reorganized at Ellington Field, Texas, in August, 1919, with the 11th, 96th and 20th Squadrons, the 464th Construction Squadron and the 2nd Photo Section. The 166th Squadron was stationed at this time at Aberdeen Proving Ground, Md. After its reorganization, the Group was distributed along various points on the Mexican border, and in the fall of 1920 returned to Kelly Field, where it was joined by the 166th Squadron. The designation of the Group was changed from the 1st Day Bombardment Group to the 2nd Group (Bombardment) in April, 1921, and in January, 1923, it was redesignated the 2nd Bombardment Group. In the summer of 1921, flights of each of the Bombardment squadrons were temporarily transferred to Langley Field, Va., to participate in the bombing of the German battleships off the Virginia Capes. Returning to Kelly Field in the latter part of September, they resumed their duties until the entire Group was transferred to Langley Field in June, 1922. One month later, the 49th Squadron, formerly the 166th, was detached from the Group and stationed at Aberdeen Maryland.

Since 1922, the Group has participated in the bombing of scrapped American battleships, the Pee Dee River bridge in

(Continued on page 13).

NEW TYPE OF AIRPLANE FOR HAMILTON FIELD

Hamilton Field, San Rafael, Calif., recently received a new type of airplane on an Army order designed to further increase the efficiency of the GHQ Air Force.

Ever since the advent of the first long-range Bombardment type airplane, the Army has been pinched by its need for a general utility plane to accompany its flying armada, fulfilling such requirements as navigability over land or sea in any weather conditions, with sufficient range, speed and payload to carry the necessities for the servicing of the strictly military airplanes.

This new amphibian - now designated by the Army as the Y10A-8 - is eminently adapted to fill this need. Built by Sikorsky, it is very similar to the commercial "Baby Clippers" - the Sikorsky S43 - which is now in extensive use by Pan American Airways and other lines in Hawaii, the Philippines, and South America. It is of all-metal construction, but with fabric covered control surfaces, painted in the familiar Army blue and yellow. Its two 800 horsepower Pratt & Whitney "Hornet" geared radial air-cooled engines cleave the air in excess of 190 miles per hour. This airplane carries eight passengers, or a corresponding amount of freight, and a crew of three - pilot, co-pilot and a radio operator who uses the very latest type of aeronautical radio equipment. It is capable of remaining aloft for eight hours. In spite of its great size, this airplane held at one time the world's altitude record for amphibians.

To ease the labor of maintenance and flying, this new amphibian carries innumerable labor-saving improvements, including automatic valve lubrication, automatic mixture control, and complete facilities for the comfort of the crew and passengers so that they may remain in the air for lengthy periods. To obtain the utmost efficiency from its powerful engines, constant speed propellers are included in its design.

This airplane is the first of an order of five to be delivered to the Army. Preparatory to being placed in actual service for navigation training work, as a rescue ship for fighting airplanes forced down at sea, and for general utility work with the new Douglas B-18 Bombers, it is undergoing a series of ground inspections and tests at Hamilton Field, and will shortly become another cog in the GHQ Air Force defense machine.

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Effective December 1, 1937, the following named Air Corps officers were given temporary promotions to the grades indicated: Lieut. Colonel Roy M. Jones to Colonel, Major Ira C. Eaker to Lieut. Colonel, and Captain Pardoe Martin to Major.

NEW CLASS AT SCHOOL OF AVIATION MEDICINE

Another routine course of instruction to qualify medical officers for duty as Flight Surgeons was commenced at the School of Aviation Medicine, Randolph Field, Texas, on December 1, 1937, and will continue for four months. Student officers enrolled for this course are - Captains Joseph A. Baird, Langley Field, Va.; Jay F. Gamel, Randolph Field, Tex.; Reinhardt L. Schmidtke, Fort Sill, Okla.; William D. Willis, Fort Sam Houston, Texas; 1st Lieuts. William C. Harrison, Fort Worden, Wash., and Edward Sigerfoos, Fort Sam Houston, Texas, all members of the Medical Corps, Regular Army, and Major Julio Cesar Aguilera, Medical Corps, Mexican Army, Mexico City.

Two basic courses are conducted annually, starting July 15th and December 1st of each calendar year.

In addition to the resident courses, the School conducts throughout the year extension (correspondence) courses of considerable magnitude. The School of Aviation Medicine is an activity of the Air Corps Training Center.

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The Second Bombardment Group
(Continued from Page 12).

1927; the mass formation flight to California in 41 hours in 1928; the Air Corps Maneuvers at Dayton, Ohio, in 1929; West Coast Maneuvers in 1930 and 1933; East Coast Maneuvers in 1931; the Air Mail in 1934, and the Second Army Maneuvers in 1936.

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REAL WINTER AT SELFRIDGE FIELD

Calling all C.W.E.T. Pilots. It is presumed the Selfridge Field Correspondent has reference to the Cold Weather Equipment Test, for he goes on to say:

"If you birds who were hanging around here last February in the hope (?) of encountering some honest winter weather will drop up this way now, I think we've got something here.... For nearly a week the mercury has been hanging between six and fifteen Fahrenheit, and the field is covered with enough ice to gladden the heart of a polar bear.

"You may remember that the Cold Weather Equipment Test Group arrived here at Selfridge Field last February 2nd, and after waiting a month for some sign of winter, they got out their straw hats and went home mad.... Fifteen minutes after the last ship departed.... it snowed. (Honest it did)."

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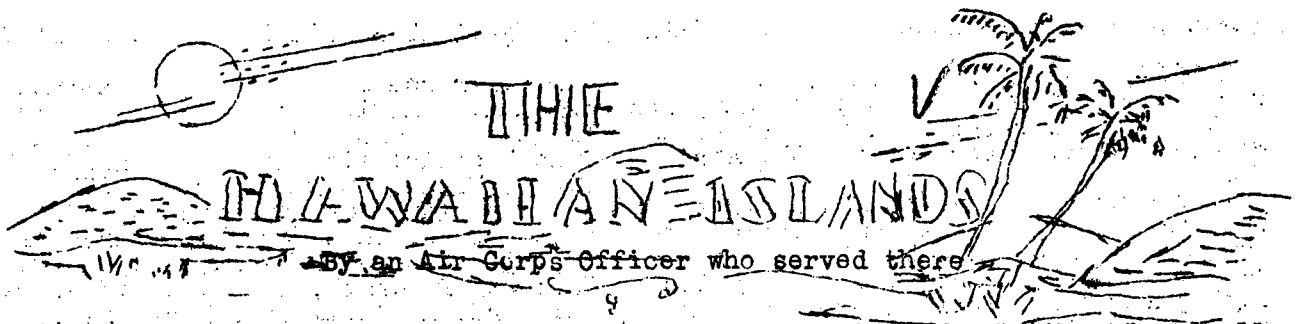
We are glad to hear from Selfridge Field again, and it is hoped to hear from this northern air base regularly from now on.



THE HAWAIIAN ISLANDS

By an Air Corps Officer who served there

A few months after our arrival in the Hawaiian Territory, we were delighted to receive information that we were included among the personnel to make a flight to Kauai (pronounced "cow-eye"). This is the most northwesterly of the eight islands in the Hawaiian Group and is situated approximately one hundred miles from Oahu, with no intervening land. Owing to its relative non-importance from a military standpoint, comparatively few flights of military aircraft are sent to this Island.

From Luke Field we crossed the Island of Oahu, over Pearl Harbor, past Wheeler Field and Schofield Barracks and Kaena Point, the northwestern tip of Oahu, which extends to a needle-like submerged point, distinctly visible from the air on account of the wonderfully clear water. Our trip from Luke Field carried us between the two mountain ranges of Oahu, the densely wooded Koolau Range on the windward side and the more or less barren Waianae Range on the "Kona" or leeward side. We were impressed by the natural bulwarks presented by these two towering walls which so obviously simplify any plans for the military defense of this important island.

Upon arriving at Kauai, we proceeded to circle the island. The first scenes which appeared were rather disappointing in that they duplicated those to which we had become accustomed in Oahu, but we were surprised and delighted upon viewing the terrain on the western side. The famous rock cliffs of Northwestern Kauai, never so perfectly seen as from the air, are sufficiently artistic to constitute a full payment for the efforts expended in making the flight, and we still wonder how nature contrived to carve the solid rock as deeply as it has without the aid of waterfalls.

After leaving the rock cliffs and continuing in a southwesterly direction, we noticed a large sandy area, which we later learned constitutes the "barking sands" made famous by the intrepid Captain Kingsford-Smith, and which he used as a point of departure from the Hawaiian Islands on his universally acclaimed trip to Australia. We have been told that one has a peculiar sensation when he first walks on these sands and hears the canine-like yelps which occur at each step.

Glancing out to sea we could discern the outline of nearby "Niihau," a small island inhabited by about twenty persons.

From the "barking sands" we headed inland and crossed Waimea Canyon. We had to rub our eyes and pinch ourselves to make sure we were not over the Grand Canyon of the Colorado in Arizona, so striking is the similarity. Actually the Waimea Canyon is shorter, shallower and narrower than its illustrious counterpart, but the formations and proportions of the two are peculiarly alike.

The small landing field at Hanapepe afforded us a harbor, and the generosity and cordiality of the white inhabitants of Kauai are still remembered as one of the high lights of our Hawaiian sojourn.

Not long after our trip to Kauai, we were again fortunate to be included in a flight to the "big island." This flight took us over or near all of the remaining islands of the group.

After leaving Diamond Head, we pointed our planes toward Molokai, thirty miles away. Upon approaching the shore, the course was altered in such manner as to skirt the southwestern side of the island. During this portion of the flight, we glanced occasionally to our right to obtain an idea of the terrain of the Island of "Lanai," the "Pineapple Kingdom" of the Dole Company. The northwestern plateau of "Molokai" is also extensively devoted to the raising of this fruit, and the broad acres of this island deliver their product to the Libby Company. The southeastern end of Molokai, which is a slender island, is quite mountainous, and the extreme eastern portion is very beautiful, although that sight was denied us on this flight.

A short water "hop" brought us to Maui (Mow-e), the "valley isle." The extreme northwestern slopes, which we first approached, presented the familiar patterns of the pineapple fields, although the areas devoted to this form of agriculture are quite limited, due to the sudden rise of the terrain into the formation of the first of a series of the most beautiful green hills, separated by valleys of similar verdure, which it has ever been our fortune to observe. These hills are very precipitous, and their height of some two thousand feet entitles them to the more dignified name of mountains, but compared with the giants viewed during the remainder of the flight the impression

left us of these slopes, without detracting from the beauty of the recollection, is that they are large hills.

The last hill terminates as suddenly as the first appeared, and the long, fairly level, valley portion of Central Maui passed to our left. On our right lay the low, uninhabited and barren island of "Kahoolawe." (We could give you the official pronounciation of this name, but everyone who has been to Hawaii has his or her own ideas, and we do not desire their ridicule, even though we are right). Although we characterize this island as barren, due to lack of any considerable vegetation, the redness of the soil indicates that its nature is similar to that devoted to the culture of pineapples on the other islands. But poor little Kahoolawe lies "Kona" of the towering crater of "Haleakala" on the southeastern end of Maui and, therefore, is cheated of the majority of rainfall.

Mt. Haleakala has an irregular crest whose summit is approximately ten thousand feet above the sea, to the edge of which its lower slopes extend in three directions. Probably the size of this unquestionable "mountain" is responsible for our belittling conception of the proper term for the hills at the other end of the "valley isle."

The entire southeastern tip of Maui has been constituted into a National Park, partially due, no doubt, to the fact that the contour gradient is so great as to render farming impracticable. To the tourist who takes the trouble to ascend to the summit of the mountain, a crater of tremendous depth appears, to the floor of which a zigzag footpath descends. Although this trip was not essayed by us, we have resolved that it will be made at some time during our next tour in the territory.

It is the crater of Haleakala itself that harbors the only known living specimens of the "Silver Sword," a plant similar to the "Spanish Dagger," or "Bayonet" cactus, but whose foliage is resplendently brilliant and whitish silver in color. Referring back to an earlier article in the News Letter, in which the origin of all plant life in the Hawaiian Islands was said to be non-indigenous, the phenomenon of this plant must be due entirely to environment.

The stretch of water over which we flew, extending from the northwestern end of Molokai to the southeastern tip of Maui, and lying between these islands and those of Lanai and Kahoolawe, is named roughly infested with a particularly lively variety of sharks, separates Maui from Upolu Point, the closest tip of "Hawaii." To our delight, we followed the leader in single file to a landing on a small field maintained by the Army on this point.

Our craft were not the modern, sleek, metal speedsters, but rather the old Martin "NBS-1's," over the passing of which many old time "bombardiers" still raise a few figurative tears. It is believed that the last of the NBS-1's were those we flew in Hawaii, and sad was the day when good old "66," the "sweetest" of all, was burned on the junk pile - a most inappropriate ending for a dependable old friend - but sadder still the day when number "50," the last of its type, met a similar fate. At any rate, we were ready for a rest and not at all disappointed to learn that we were to spend the night at Upolu Point.

The next morning we were up bright and early, taking off as soon as possible for the flight around the "big island." Since the distance is in the neighborhood of four hundred miles, only the blase pilots of present-day airplanes may well wonder at the spirit of adventure attending this trip, either forgetting or never having known the esprit de corps required when we claimed a cruising speed of from ninety to one hundred miles per hour for our trusted eighty mile planes.

The flight itself was extremely interesting from the scenic point of view, but even more valuable to each of us as a part of our military education, especially from the Air Corps point of view. Unfortunately, the military knowledge gained cannot properly be published in the News Letter.

The Island was circled to the left, taking us by the Kohala Mountains, about 5,000 feet in height; Mt. Hualalai, an old crater of 8,000 feet; the dense, tropical foliage of the "Kona" coast, where Hawaiian coffee is raised; past mighty Mauna Loa; over the "Kona" coast lava flows, one atop the other, each varying in color from the other; around South Cape; across the southeastern tip of the Island and the "Volcano Region," including Kilauea Crater, with its constant steam; across the Kau desert, where a forced landing could not be made with any hope of salvaging any part of a plane and even a parachute jump would be exceedingly hazardous; skipping the "Puna Coast" around whose scenery was laid the stage production "The Bird of Paradise" of years ago; over the City of Hilo; its airport, which we could not use for landing our Martins due to lack of brakes; on past the cane fields; past lofty Mauna Kea, the highest peak of all; past the unusual geological formations comprising the "Hamakua Coast;" and so

(Continued on Page 17).

For some time before we reached Mt. Haleakala we had stolen glimpses of the "big island" directly ahead. A 30-mile stretch of extremely rough water, tho-

OBITUARIES

Within the past few weeks the Air Corps lost several of its personnel through airplane accidents and one through natural causes, thus again confirming that oft repeated adage to the effect that misfortunes never come singly.

Major Alfred E. Waller, of Langley Field, Va., lost his life on December 11th, when the plane he was piloting caught fire in flight and crashed when he attempted to make a landing. He was removed from the burning wreckage before his clothing caught fire. Sergeant John Johnson, who accompanied him on the ill-fated flight, suffered contusion and minor injuries when he was thrown clear of the airplane.

Major Odas Moon died on November 19th at the Hotel Chamberlain, Old Point Comfort, Va. He was awaiting retirement from active service, effective December 31st. Major Moon had been in ill health for some time.

Second Lieut. Edward Lawrence Parsons Burke was killed near Kelly Field, Texas, on December 9th while engaged in a weather flight.

Second Lieut. Charles William Field, Air Reserve, and his passenger, Private George W. Bolton, Jr., lost their lives on December 1st, about 2½ miles south east of Avery, Texas, when the A-17A Attack plane piloted by Lieut. Field went into a tail spin and crashed.

Major Waller was born at Morganfield, Ky., February 20, 1894. He attended Vanderbilt University for three years. Following his enlistment on December 8, 1917, in the Aviation Section, Signal Corps, he graduated from the ground course at the School of Military Aeronautics, Austin, Texas, February 23, 1918. After several weeks' duty at the Aviation Concentration Camp at Camp Dick, Dallas, Texas, he was ordered to Park Field, Tenn., for flying training. Passing his tests as a Reserve Military Aviator, he was commissioned a second lieutenant in the Aviation Section, Signal Corps, on May 14, 1918.

Following attendance at the Armament School at Wilbur Wright Field, Fai field, Ohio, from July 3 to 24, 1918, he was transferred to Gerstner Field, Lake Charles, La., for advanced training as a Pursuit pilot.

Due to the destruction of Gerstner Field as the result of a hurricane, Major Waller was transferred to Rockwell Field, Coronado, Calif., to continue his Pursuit training, completing same on October 26, 1918. He remained at Rockwell Field, serving as Supply Officer, until August 14, 1919, when he was transferred to March Field, Riverside, Calif., where he served as a flying instructor among other duties.

Following his appointment as a second lieutenant in the Air Service, Regular Army, July 1, 1920, he was transferred to Mather Field, Sacramento, Calif., where he served as Post Exchange Officer. In June, 1922, he was assigned to duty at Crissy Field, Presidio of San Francisco, Calif., and in the following September he was assigned to foreign service with the 3rd Pursuit Squadron at Clark Field, Philippine Islands.

From August, 1924, to May, 1927, Major Waller was stationed at the Air Corps Primary Flying School at Brooks Field, San Antonio, Texas, serving at various times as Commanding Officer of the 52nd School Squadron; Engineering Officer, 51st Squadron; Flying Instructor and Director of Flying Instruction.

After attending the Air Corps Tactical School at Maxwell Field, Ala., from August, 1931, to June, 1932, Major Waller, upon graduation, was assigned to Langley Field, Va., serving as Commanding Officer of the 35th Pursuit Squadron and later as Operations Officer of the 8th Pursuit Group.

In the operation of the Air Mail by the Army Air Corps, Major Waller was placed in charge of Section II of the Eastern Zone, comprising the route from Chicago, Ill., to Jacksonville, Fla., and the Richmond, Va., to New Orleans, La., Section of the Newark, N.J. to New Orleans route, with headquarters at Candler Field, Atlanta, Ga.

Major Waller performed a varied assortment of duties at Langley Field, but during most of his over four year tour at this field he commanded the 35th Pursuit Squadron. For brief periods he served as Supply Officer of the Squadron; as Operations Officer of the 8th Pursuit Group; as Commanding Officer of the 33rd Pursuit Squadron and as Executive and Operations Officer of the Second Wing.

After graduating from the one-year course at the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1937, Major Waller returned to Langley Field for duty. His total flying time exceeded 3600 hours.

Lieut. Burke, a native of the State of Montana, where he was born October 25, 1912, and whose home was in Helena, graduated from the U.S. Military Academy, West Point, N.Y., June 12, 1936, when he was commissioned a second lieutenant and assigned to the Infantry. Ordered, at his own request, to the Air Corps Training Center for flying training, he graduated from the Primary Flying School at Randolph Field, Texas, June 23, 1937, and from the Advanced Flying School, Kelly Field, Texas, on October 6, 1937, on which date he was rated as "Airplane Pilot." He was slated for duty in the Philippines. His untimely death shortly after finishing his flying training and when he was on the threshold of his new career in the Air Corps, one which from all indications he was looking forward to with a great deal of interest and enthusiasm, is sad to contemplate.

Like Lieut. Burke, Lieut. Charles William Field graduated from the Advanced Flying School at Kelly Field, Texas, on October 6, 1937. He was commissioned on that date as a second lieutenant in the Air Reserve and assigned to active duty with the 13th Attack Squadron at Barksdale Field, La. Lieut. Field was 23 years of age and his home was at Rocky Face, Ga.

Private Bolton, who enlisted in the Air Corps on February 3, 1937, and whose home was at Beinville, La., was born on September 10,

1918. He was assigned to duty at Barksdale Field, La., with Base Headquarters and 6th Air Base Squadron.

Major Moon, a World War veteran, who was 45 years of age, enlisted in the Aviation Section, Signal Corps, in October, 1917. A sketch of his military career was published in the issue of the News Letter of October 1, 1937, in connection with the announcement of his retirement from active service. Major Moon was particularly well versed in Bombardment Aviation.

The Air Corps deplores greatly the loss of these men who died in the service of their country and extends its deepest sympathies to the bereaved relatives and friends.

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THE HAWAIIAN ISLANDS (Continued from Page 15).

back to Upolu Point and a well earned and much needed rest.

The return flight to Luke Field was made the next day, following the same route, in reverse order, as that employed on the outward journey. We arrived, dirty and sun-burned, but possessing sufficient information to entertain our families and friends for several days.

There is so much interesting detail concerning the Island of Hawaii, which was but lightly mentioned in this article, that another article will follow, devoted more or less exclusively to an expository treatment of some of the outstanding points.

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RETIREMENT OF MASTER SERGEANT DONOHOE

Special Orders of the War Department recently issued announced the retirement from active service on November 30, 1937, of Master Sergeant Michael J. Donohoe, 8th Attack Squadron, Barksdale Field, La.

A few Air Corps officers now in the service, but many middle-aged men in civil life, upon hearing this announcement, would harken back to World War days when they were cadets attending the Ground Officers Training School at Kelly Field, Texas, and their memories would drift to that colorful figure of the Ground School Drillmaster, Sergeant Michael J. Donohoe, who caused them many an anxious moment during drill periods, whose ready wit and humorous sallies made them forget for a time the hard grind they were undergoing in order to secure that much coveted commission in the Aviation Section, Signal Corps, and whose kindly interest in their welfare gained for him their admiration and respect.

New classes for the G.O.T.S. were formed each week, the length of the course being some ten weeks. The "old-timers" - those who had had an opportunity to become pretty well acquainted with Sergeant Donohoe and to learn that his "hard-boiled" characteristics were limited to the drill field only, took keen delight in telling the new arrivals in considerable detail the extremely tough time in store for them with the Drillmaster.

Just a few words with the kindly Sergeant, without even knowing his name, removed all doubt regarding his native land, for if there was anyone who more adequately fitted one's conception of a typical representative of the Emerald Isle, the writer has not known such.

It was customary for each class of the Ground School at graduation time to hold a banquet at one of the San Antonio hotels, and Sergeant Donohoe was invariably the guest of honor. Also, he was remembered by each class, as evidenced by the many mementoes at his quarters at Kelly Field.

After the first few weeks, when the rookie students had gotten the hang of marching straight and executing the various formations, the Sergeant introduced a new figure in the set up, an assistant instructor, equipped with a notebook and pencil. Said assistant instructor's principal duty was to jot down names. That dreaded notebook became the bane of every cadet's existence, but not until graduation time did it leak out that that the little book was a fake. Be that as it may, its moral effect was real, and when a cadet's name was called out for record therein he just had something more to worry about in connection with his chances of obtaining a commission.

In the closing days of the course, individual cadets were singled out to drill the company for brief periods. Here is an example of just one of the many humorous incidents which occurred on the drill field. One temporary commander of the company got along fine until he followed the maneuver of "To the Rear" with the command "Squads Right."

"Halt the coompany! Halt the coompany!" shouted Sgt. Donohoe, running up to the flustered cadet. "And what's yur name? Goode, is it? Well, Goode, that was very bad!"

Master Sergeant Donohoe was born in Galway, Ireland, May 18, 1884. He attended public school in his native city, and later was a teacher. Following his arrival in the United States, he enlisted in the Marine Corps, serving a four-year period. He then enlisted in the Army, serving with Company L, 28th Infantry, in the grades of Private, Corporal and Sergeant for over four years before joining the 112th Aero Squadron at Kelly Field.

Following the suspension of the Ground Officers Training School at Kelly Field, he served for a brief period as drillmaster at the School of Military Aeronautics, Atlanta, Ga., and was then transferred to Garden City, L.I., New York. In September, 1919, he was transferred to Carlstrom Field, Arcadia, Fla. For several months he was on detached service at McCook Field, Dayton, Ohio. He next completed a course of instruction in engine mechanics at the Air Service Mechanics School at Kelly Field. He received appointment as Master Sergeant on July 1, 1920. Sergeant Donohoe continued duty with the Primary Flying School at Carlstrom Field and later at Brooks Field, to which this school was subsequently moved. In June, 1925, he was ordered to the Hawaiian Department, and after a 3-year tour there, he was stationed at Langley Field a similar period, and from January, 1931, until his retirement he served with the 3rd Attack Group.

Kelly Field, Texas, December 8th.

Six officers and six enlisted men in six A-17A airplanes, under the command of Major L.C. Mallory, from the First Wing, GHQ Air Force, March Field, Riverside, Calif., arrived at Kelly Field, via El Paso, Texas, on November 20th, and remained at the field until the 22nd, on which date the flight departed for their home station along the same route. While at Kelly Field, Major Mallory renewed old acquaintances.

First Lieuts. Delmar T. Spivey, pilot, and David N. Crickette, co-pilot, departed from Kelly Field on November 27th for March Field, Calif., on temporary duty for approximately seven days, for the purpose of receiving instruction on B-18 type airplanes, and then to ferry an airplane of this type to Kelly Field along the best available air route.

During the period of temporary duty at March Field, Lieuts. Spivey and Crickette made such round trips as required, by air, from March Field to the plant of the Douglas Aircraft Corporation, Santa Monica, Calif., for the purpose of receiving ground instructions from the Air Corps representative at the factory. They returned in the new airplane on December 5th.

Langley Field, Va., December 4th.

Lieut. Colonel Robert Olds, 2nd Bombardment Group, just returned from a short leave of absence, during which time he attended the annual Army and Navy gridiron classic.

Captain John H. McCormick, Hq. and Hq. Sqdn., 2nd Bombardment Group, is back at work as Group Adjutant after a month's vacation and a pleasant visit in the West Indies.

First Lieut. Edwin L. Tucker, also of the Hq. and Hq. Sqdn., 2nd Bombardment Group, is on leave in North Carolina enjoying some small and large game hunting.

First Lieut. Ford J. Lauer, 20th Bombardment Squadron, returned from a very enjoyable leave on November 26th.

Second Lieut. Thomas C. Musgrave, Jr., 36th Pursuit Squadron, has heeded the advice of the wily ducks, and his search for sunnier climes will keep him in San Antonio for the next 30 days. Not to be outdone, 2nd Lieut. Glenn C. Thompson, also of the 36th, took a six-day leave to recoup from a heavy Thanksgiving.

Corporal Powers and Private Utley, 36th Pursuit Squadron, returned last week from Chanute Field, having graduated from the courses in Instrument Specialist and Airplane Engine Mechanics, respectively.

Privates Hooks and Taylor, 36th Pursuit Squadron, were assigned to the Air Corps Technical School, Chanute Field, to pursue the course of instruction in armament.

"Those wedding bells are breaking up that old gang of mine" is the song that has been sung recently by many of Lieut. Harcos' companions, who have the idea that remaining single is far better than that of matrimony. The good news came on Thanksgiving Day, when he and Miss Elizabeth Vaughn, of Lynchburg, Va., said "I do," in order to become Lieut. and Mrs. B.A. Harcos.

49th Bombardment Squadron: The Squadron wishes to announce the addition of two officers to its membership, Lieuts. John A. Samford, Air Corps, and James H. Rothrock, Air Reserve.

Lieut. Samford, whose home is in San Antonio, Texas, came to this Squadron after a two-year tour of duty at France Field, Panama Canal Zone. Previous to this assignment, he attended the Air Corps Technical School at Chanute Field, Ill.

Lieut. Rothrock has also seen active duty in Panama - at Albrook Field, where he was stationed after graduating from Kelly Field in 1932. After two years' active duty there, he secured employment in Colombia, South America, as a government flying instructor. He continued in this work for a year and a half, arriving in the States in 1936. From that date until the present, Lieut. Rothrock worked as a news photographer in Washington, D.C.

Bolling Field, D.C., December 4th.

Brigadier General George H. Brett, accompanied by 1st Lieut. T.J. Meyer, stopped at this station for several days enroute to Panama, ferrying an airplane to Albrook Field.

Among other distinguished visitors at this field recently were Brigadier General Henry C. Pratt, U.S. Army; Major General Frank M. Andrews and Brigadier General A.W. Robins, Air Corps.

Maxwell Field, Ala., November 19th.

Hqrs. and Hqrs. Squadron, A.C. Tactical School: We welcome to our Squadron 2nd Lieut. Clinton U. True, Air Corps, who graduated from the Advanced Flying School, Kelly Field, Texas, on October 6th, and was assigned to duty at this station. Lieut. True took advantage of a leave of absence and reported for duty on November 15th. He graduated from the U.S. Military Academy, Class of 1936, and his home is New Orleans, La. He was appointed Squadron Athletic, Supply Officer and Squadron Adjutant.

We regret that Lieut. Aring was transferred from this Squadron to the 91st School Squadron. This was effected on November 15th.

Upon securing a position with the Department of Commerce, Private Oliver B. Anderson applied for and was discharged by purchase on November 4th. His new duties in the field of radio are at Smithville, Tenn.

We had a few changes in enlisted personnel between this station and Eglin Field, Fla., during the past week, as follows: Sergeant Vandergrift and Pvt. Dunn were detailed to duty at Eglin Field for a period of two months with the Engineering Section as replacements for Corporal Melton and Pvt. Vereen, who returned to this station for duty.

Pvt. William J. Brooks was transferred from this Squadron to Air Corps, Unassigned, Hawaiian Department, and departed on a 60-day furlough on November 10th, prior to sailing from New York City.

Since the announcement by the Supply Officer that sporting type shotguns were available in

the Squadron Supply for issue to enlisted personnel for hunting purposes (providing they have a State license), the nimrods have come forth in such numbers that you almost have to get on the waiting list in order to secure one of the trusty old Winchesters. "Thar must be game in them thar hills." The News Letter Correspondent deemed it the part of wise policy for the nimrods to stay at home on the opening day of the hunting season, as there's always a rush here to kill off all the birds on that day and, as usually is the case, some wild shooting will be taking place.

From the looks of the Thanksgiving Menu the Mess Sergeant of this Squadron prepared, it appeared evident that there were to be very few absentees on pass or on furlough over the Thanksgiving holiday. He had about everything possible on the menu here for that day. The men here, of course, always enjoy a big spread. Turkey occupied the principal place on the menu, with all the accessories to match.

13th Air Base Squadron: Normally, there is nothing complimentary about the expression "Just another guy named Joe." In this instance the reverse is true. Sergeant "Joe" Rocklin is the only one from the Squadron who passed the examinations for entrance to Chanute Field which were recently conducted.

Hoffman and Frucci are now the junior sergeant and corporal, respectively, in the squadron. Frucci was grinning from ear to ear when last seen and also limping. One weisenheimer said he acquired the limp hurrying to the tailor shop to get his chevrons sewed on.

Now that the elastique slacks have been issued, the boys are surely giving the mirrors a workout. They seemed to be admiring themselves from all possible angles. I imagine that brown gravy will look the same on the elastique slacks as on the serges.

About 55 troopers from the Squadron applied to take the A.M. examination scheduled for the early part of December. Looks as though the study room is due for a siege between now and then.

Tech. Sgt. William H. Van Matre and Staff Sgt. Norvelle Chaudron are soon to depart for a tour of service in "Wahoo."

Staff Sgt. Y.B. Kuykendall recently joined the Squadron for duty. He came from Bolling Field, D.C., and was assigned in the Engineering Department.

What's this we hear about Pvt. "Fireman" Fleemin standing outside the emergency crew's office one night and giving such a realistic imitation of a plane landing that the soldat on duty turned on the floodlights?

After the "buckers" in the Squadron had worn blisters and callouses on their digits from shining brass, the Armistice Day parade was called off "on account of wet grounds." No squawks were heard because rain checks weren't issued.

Privates Brandes and Tillery returned from Chanute and are "telling the tale."

Private Jarrett is all smiles. The stork brought just what was ordered - a bouncing baby boy.

Selfridge Field, Mich., December 6th.

94th Pursuit Squadron: Two officers of the Squadron left December 6th on a trip to the West Coast and sunshine. Twice yearly, officers of the GHQ Air Force are allowed, but not required, to go beyond the provisional 1,000 miles radius for the purpose of training in long range navigation. One of the pilots, Captain Leo H. Dawson, commanding the Squadron, took off for his destination, Southern California, via El Paso, Texas, in the new P-36 type airplane, and he anticipated covering the distance in a comparatively short time. The other pilot, Lieut. Edward W. Anderson, took off in a P-26 for Long Beach, Calif.

Flights of this type require a great deal of initiative on the part of the pilot. Accurate flight plans have to be submitted in accordance with the Department of Commerce traffic control system, and weather data must be studied carefully. In short, there is no better training innavigation than a flight of this nature. Good Luck to Captain Dawson and Lieut. Anderson.

Congratulations to Staff Sgt. Pung, Sgt. Kick and Corporal Earnest Bonham on their recent promotions.

Much to our regret, we are losing Staff Sgt. Kingsley, who is taking over the Supply Office in the 17th Pursuit Squadron.

We wish to bid a fond farewell to Staff Sgt. Arthur Hagemire and family, who are leaving for the Philippine Islands on December 28th on the U.S.A.T. REPUBLIC from New York.

Air Base Hqrs. and 3rd Air Base Squadron: Calling Major Seversky! How's about them swell new peashooters you promised us for Xmas, huh? We are just about fresh out of peesixes and the Pride of the Boeings. Honest now,- aint there no Santy Claus?

Calling Santa Claus! Please bring me and the other fellers for Christmas (or as soon thereafter as possible)--

Seventy-seven new airplanes (model 1935)
One Gymnasium, with the following attachments:
- Four squash racquet courts.
- One swimming pool.
- Six bowling alleys.
- Basketball court
- Badminton court
- Some station wagons not so tough on false teeth.

Note: If you can't get a P-35 in my stocking, please take the strings off the BT-9 and put in a foot-warmer).

Luke Field, T.H., November 20th.

5th Composite Group: Lieuts. Richard C. Lindsay, Paul E. Ruestow, Samuel S. Mitchell and Sgt. Dooney returned on October 30th after spending the previous week with the Naval Patrol Squadrons of the Fleet Air Base. In spite of the high winds encountered, reports indicate an interesting and instructive trip. All personnel were impressed with the spaciousness and comforts afforded in the big "Boats." Hot coffee at any time and fairly comfortable bunks are the major attractions.

72nd Bombardment Squadron: Last week the Squadron was mugged by a local photographer,

and the result was most gratifying. The cement haversack goes to the photographer who doubled for the "Little Birdie" and gave such a fine performance that everyone possessed a "photo" smile. Incidentally, it was pay day.

The Squadron anxiously looked forward to the Thanksgiving Dinner, having been assured that it would be "Tops." The Squadron Menu Booklet is one of the finest we have seen. Hawaiian scenes are used to great advantage, plus the added feature of the Squadron picture, which makes it doubly valuable to the Squadron and immediate friends.

Lieut. Callish just returned from the rest camp on the Big Island and reported that he had a much needed rest and was feeling fine. Lieut. and Mrs. Thomas left for the rest camp. We understand they left their young son with Lieut. and Mrs. Johnson. Lieut. Johnson says he and Mrs. Johnson have had no trouble with Master Thomas so far. He must be a model baby.

San Antonio Air Depot, December 7th.

A group of six officers from Fort Riley, Kans., headed by Lieut. Colonel Wm. E. Shipp, Cavalry, while returning from Barksdale Field, La., paid a visit to this Depot on November 30th for the purpose of viewing the Engineering Shops. They arrived in a C-14, piloted by Lieut. Murchison of Barksdale Field.

About 100 members of the Circulation Department of the Dallas, Texas, TIMES-HERALD, while on a recent visit to San Antonio, came to the Depot and were greatly interested in viewing the workings thereof.

Lieut. Colonel Lester T. Miller, Commanding the 3rd Transport Squadron at this Depot, departed on December 7th for an extended navigation flight to Washington, D.C., and return, via Barksdale and Maxwell Fields, Atlanta, Pope and Langley Fields.

Recent visitors at thus Depot by air included Major H.H. Carr and Lieut. M.E. Glaser, Nov. 28-29, returning to the Rockwell Air Depot after ferrying two B-10B's to Randolph Field; Captains D.W. Watkins and C.S. Thorpe, of Phillips Field, Aberdeen Proving Ground, Md., enroute to their home station in a B-18, Nov. 26-28; Captain R.H. Clark and Lieut. O.E. Henderson, of Chanute Field, Nov. 26-29, for minor repairs to their B-18; Lieut. J.C. Kilborn, of Chanute Field, Nov. 29, stopping for repairs to his B-5A on return to his home station; Major J.D. Corkille, Air Corps Representative with the Boeing Aircraft Co., Seattle, with 10 passengers, December 6-7, en route ferrying the new giant XB-15 from the Boeing Plant to Wright Field.

Recent interdepot transport service trips by personnel of the Depot were as follows; Major C.F. Horton and Lieut. Max H. Warren to the Fairfield Air Depot and return, Nov. 29 to Dec. 1; Lieut. L.P. Kleinoeder and Staff Sgt. Tyler to the Rockwell Air Depot and return, Nov. 29-30; Lieut. Col. Lester T. Miller and Lieut. M.H. Warren to the Rockwell Air Depot and return, Dec. 3-6; Lieuts. T.B. McDonald and T.K. Dorsett to the Fairfield Air Depot and return, Dec. 2-4; Lieuts. C.B. Collier and P.S. Blair to the Fairfield Air Depot and return, Dec. 5-6; Major E.D. Perrin and Mr. Sgt. C.P. Smith, leaving Dec. 7th for the Fairfield Air Depot and return, with Major R.V. Ignico, of Mitchel Field as passenger and who was returning to his home station from a visit in this vicinity.

Fairfield Air Depot, Patterson Field, Ohio.

Major R.H. Cooper, Assistant Depot Supply Officer, and his Chief Clerk, Mr. H.L. Morgan, flew in a C-33 Transport, on its regular interdepot trip, to San Antonio and Rockwell Air Depots for the purpose of coordinating supply matters. Many advantageous comparisons were made, mutually benefiting all concerned.

A service test is in progress to eliminate the Local Issue Section of the Supply Department. All the stock formerly stored in the Local Issue Section has been returned to the Main Warehouse. Small doors have been made in the large rolling doors of each stockroom where stores charges slips . left on the prior trip and delivered to the Engineering Department stock tracing unit. Trips are made to each storeroom and the Engineering Department at frequent intervals. Advantages over the former system of maintaining a Local Issue Section are the reduction of inventory effort and location of stock in one place.

Six new visible bookkeeping machines have been received for use in the Accounting Section of the Depot Supply Office. Postings on this machine are visible, in addition to many other improvements over the old machines.

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MATERIEL DIVISION NEWS

Tractors:

Since the tugs used for towing airplanes do not have sufficient weight and power to tow the large airplanes, such as the Type B-17, a number of commercial companies agreed to submit tractors for test at Langley Field, Va., on November 18 and 19, 1937. From these tests the requirements for service equipment will be determined.

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It is estimated that about 10,000 people were present at Adams Field, Little Rock, Ark., on October 31st, to witness the dedication of the new hangar and administration building for the 154th Observation Squadron, Arkansas National Guard. Aviation officials from Washington who were present on this occasion were Messrs. A.B. McMullen, Chief of the Airport Section, Bureau of Air Commerce; Fred L. Smith, of the National Aeronautic Association; E.M. Haight, regional supervisor of the Bureau of Air Commerce, and Col. Sumpter Smith, principal aeronautical engineer of the WPA Administration. These officials were led by Mr. Corrington Gill, Assistant National Administrator of the WPA, in charge of aeronautical development, accompanied by his secretary, Mr. J. Frank Roberson. Major Lotha A. Smith, Air Corps, of Maxwell Field, Ala., was present as official observer for the War Department. Approximately 100 national, state and municipal officials attended a banquet that night.

Mitchel Field — The 97th Squadron basketball team began the season with full gun and headed into the wind for rapid take-off toward a championship cup in the Mitchel Field Air Base League. They won the first two of their games, doubling points on the strong Base Squadron team at 24-12, and out-tossing the 8th Photo Section (last year's Champs) to the tune of 28-12.

The squad has been divided into two distinct sections. The first team includes a number of outstanding stars, with Ettinger, member of Hawaiian Department champions at Fort Kamehameha in 1935 and 1936; Doty, former star of Army and civilian basketball at Scott Field and Belleville, Ill.; Duncan, Kozel and Richmond filling out the team. With Elliott, Knapp, Giordano, Dygas, Whalen and Blackowski in the line-up, the second team is fast enough to provide the regulars plenty of competition. Second Lieut. Richard E. Ellsworth is the Squadron coach, and he is assisted by 2nd Lieuts. Wallace C. Barrett and Ralph W. Catlin (Air Res.).

The 97th team, in fact, has made such a good showing that efforts are now under way to enter the team intact in the New York City Harbor League. This seems a logical move in view of the fact that the 97th is 1st Division Aviation. Supporters believe the Squadron team has more than a fair chance in competition with the Base Team and other Harbor League squads.

Kelly Field — On Saturday, November 27th, the newly organized Kelly Field Enlisted Men's Service Club held its seventh dance, and from all indications was a great success, as there was a record crowd which seemed to have an enjoyable time.

Colonel Arnold N. Krogstad, Commanding Officer of Kelly Field, accompanied by Colonels E.A. Lohman, R.M. Jones, Major A.W. Pitts, 1st Lieuts. A.W. Kissner and C.A. Clark, Jr., expressed their pleasure at being present at the presentation of sweaters to the 1937 baseball team. Colonel Krogstad stated that he was well pleased with the efforts and sportsmanship displayed by members of the team and regretted that seasonal participation came to an end so early, but that he would like to see more volleyball played on the field, since it is an excellent form of exercise and affords diversion for a larger number of players at one time. The men who received sweaters were Capt. A.R. McConnell, Manager, and C.L. Summers, L. Frey, R. Nick, Hqrs. and Hqrs. Squadron; B. Morris, T.E. Hawkinson, S.E. Anderwald, D.H. Van Houten, U.G. Jackson, 61st School Squadron; D.B. Lumpkin, F. Drobina, O.L. Klapp, J.R. Garet, 12th Air Base Squadron; F. Ponzniak C. DeFee, E.E. Hertel, A.P. Parker, 64th School Squadron; E.W. Griffin and R. Higginbotham, 62nd School Squadron.

Sweaters will be forwarded to E.J. Towle and A. Vielock, who had been transferred to the Hawaiian Department. Following the presentation of the sweaters to members of the team, with individual commendation from Colonel Krogstad, dancing was resumed and the merriment continued past midnight.

Bolling Field — The Intersquadron Basketball League finished a very successful season on November 19th, when the 1st Staff Squadron, winners of the second half of the series, defeated the 1st Platoon of the 14th Air Base Squadron, winners of the first half. Both games of the play-off series were hotly contested. The 1st Staff took the long end of two games 52-39 and 41-28. Zwisle and Urasek starred for the 1st Staff Squadron, while Govedich worked to keep the championship in the Air Base. The Intersquadron League this year aided materially in conditioning and selecting the players for the post team. It also afforded plenty of competition and exercise for all men who participated.

Immediately after the close of the Intersquadron League, Coach McKinney began weeding out the thirty candidates for the Post Team. This proved a difficult job, due to the large number of excellent players who were outstanding in the squadron games. A hard schedule was arranged for the season. The team entered the Government League of Washington, D.C., and the 3rd Corps Area Army League. In addition to the above, Bolling would like to play games with all Air Corps Post Teams in the eastern section of the country.

With the Bureau of Engraving Band playing at the gala opening of the Government League at Bolling Field, a large gathering saw Bolling win its opening game against the Engravers by a score of 32 to 27. After trailing at the end of the first half, 17-12, Zwisle led the Bolling team in an uphill fight in the last half to win. Two days later, Bolling won its second game, 38-26. These two successive victories places the team in the league leadership and starts off a very active season. The entire squad is pointing for the 3rd Corps Area League games which begin in January.

Selfridge Field — The majority of the members of the 94th Pursuit Squadron are participating in Badminton, but the controversy over the advantages of cork-tipped or rubber-tipped shuttle cocks remains unsettled. The majority seem to favor the rubber-tipped one in the belief that it makes for a much faster game. Anyone who thinks he can play Badminton should contest Sgt. Grossman.

Langley Field — The "pencil-pushers" from the Administrative section of the 1st Air Base Squadron had a difficult job on hand on the evening of November 29th before being able to nose out the Canary and White jerseymen of the Flight Section, 32 to 31, for an undisputed possession of the sectional two conference championship. Orchids to Major Paul J. Mathis for his splendid pep talk prior to game time, which may be greatly responsible for that extra do or die spirit which was noticeably displayed by the "clock-like" aggregation of the Headquarters Section.

At a recent meeting of the Base wrestling squad, Pvt. Jesse Davidson, 37th Attack Squadron, was elected captain of the team for the coming season, with Pvt. Edward G. Westberg, V-7578, A.C.

2nd Photo Section, managing secretary. The team will start its season against the Norfolk Central YMCA team, at Norfolk, on January 10th, and a return match will be held in the Base Gymnasium on January 27th. Meets with several teams are pending.

Luke Field — At this writing we find the 72nd Bombardment Squadron basketball team right on the heels of the leading 4th Squadron. A crucial game is ahead, and victory from the 4th will give us a tie with them, and the boys feel they can deliver.

Maxwell Field — The Hqrs. and Hqrs. Squadron, A.C. Tactical School, bowling team is holding its own by some very close margins. Our opponents in the tussle on November 10th were too close for comfort, and victory was in doubt until the last pin stopped toppling. All three games were very uncertain until the last frame, but through the kindly smiles of "Lady Luck," we managed to edge out a few pins in the lead in each of the games. The team had another tough assignment with the 91st School Squadron, similar to the contest with the 13th Air Base Squadron, but again struggled through somehow to win all three games. This can't always last, however, and the team is bound eventually to get all the splits and flats out of their system and settle down to some real 200 bowling.

Moffett Field — Athletic activities were stimulated into life when Lieut. Robert Alan arrived and took over the job of Post Athletic Officer. The Post is fast becoming "sports minded." Tournaments, smokers, awards of prizes and such are the usual thing. More and more entrants compete in new events, and the rooting sections are more crowded.

The "I told you so" fellow was overheard to say that Moffett Field will turn out a champion basketball team for 1937-38. He is betting on a sure thing.

We have a coach who has the knack and reputation of turning out champs. He is Captain Patient, who was coach of the Division Champions, 2nd Medical Regiment, Fort Sam Houston, for 1935-36, and of the champion team of the Spanish-American Civilian League for the same year. Thanks to the Navy and the WPA, we have one of the finest gymnasiums and basketball courts this side of the Atlantic. To the Navy we give thanks for the heritage of the balloon hangar they left us, and to the WPA for the labor furnished in installing a hardwood floor. The lighting effects are perfect; court space and ceiling are unlimited.

December 20th is the big night for this month. The 82nd Observation Squadron Blue team will play the 9th Air Base team in the deciding game in the inter-squadron tournament, and the White Team will play the Officers. Following this will be the award of prizes for the Horseshoe Tournament and a Smoker.

STEPS TAKEN TO ESTABLISH NORTHWEST AIR BASE

Under Special Orders of the War Department, recently issued, Lieut. Colonel Frank W. Wright, Air Corps, is relieved from duty at Wright Field, Dayton, Ohio, and assigned to duty at McChord Field, Tacoma, Wash., in connection with the establishment of the Northwest Air Base, and assume command of McChord Field upon the formal acceptance of that air base by the War Department.

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WAR DEPARTMENT ORDERS
Changes of Station

To Mitchel Field, N.Y.: Captain Richard Cobb, from Boston Airport, Mass., for duty with the Organized Reserves of the 2nd Corps Area; Major Clayton L. Bissell, from the Hawaiian Department.

To Chanute Field, Ill.: Major Winfield S. Hamlin, from duty as Assistant Air Officer, 8th Corps Area, Fort Sam Houston, Texas.

To Maxwell Field, Ala.: Major James C. Cluck, from the Office of the Chief of the Air Corps, Washington, D.C., effective April 24, 1938.

To Randolph Field, Texas.: Major Joseph W. Benson, from Fort Bragg, N.C., for flying training with the class beginning March 1, 1938.

To Wright Field, Ohio: 1st Lieut. Alfred R. Maxwell, from the Philippines.

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AIR RESERVE OFFICERS TO EXTENDED ACTIVE DUTY
Second Lieutenants

Frederick Reese Freyer, of Savannah, Ga., to Barksdale Field, La., to January 1, 1941.

Sterling Samuel Tatum, Siluria, Ala., to Lawson Field, Fort Benning, Ga., to December 2, 1940.

John Cushman Doherty, Los Angeles, Calif., to March Field, Calif., to April 6, 1940.

Laurel Jesse Gephart, Morrill, Kansas, to Langley Field, Va., to November 10, 1940.

LeRoy Alex Rainey, Oak Park, Ill., to Randolph Field, Texas, to December 23, 1940.

Clarence Paul Dittman, Aurora, Ill., to Selfridge Field, Mich., to December 16, 1940.

Gerard Francis Mulligan, Bath, New Hampshire, to Mitchel Field, N.Y., to December 16, 1940.

John Harold Cheatwood, Ruston, La., to Bolling Field, D.C., to December 9, 1940.

James Harvey Rothrock, Arlington, Va., to Langley Field, Va., to November 14, 1940.

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