

# AIR FORCES NEWS LETTER

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FEBRUARY 1942





# THE AIR FORCES NEWS LETTER

HEADQUARTERS ARMY AIR FORCES

WASHINGTON, D. C.

VOL. 25

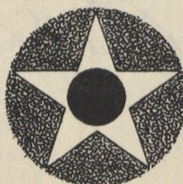
FEBRUARY, 1942

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Art Work By James T. Rawls





# *A War Message to the Air Forces*

THE DECLARATION OF WAR BY THE CONGRESS OF THE UNITED STATES ON DECEMBER 8 WAS A RINGING WARNING TO THE WORLD THAT THE ARMY AIR FORCES IN COOPERATION WITH OUR GREAT AIRCRAFT INDUSTRY WOULD STRIVE FOR AERIAL SUPREMACY IN EVERY THEATER OF OPERATIONS.

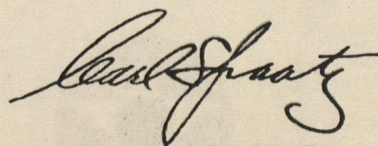
OUR COMMANDER-IN-CHIEF PROMISED THAT NO MATTER WHERE THE ENEMY WAS FOUND DEVASTATING WARFARE, PARTICULARLY IN THE AIR, WOULD BE BROUGHT TO HIM. WE OF THE ARMY AIR FORCES ARE DETERMINED TO ATTAIN THIS OBJECTIVE--WE SHALL ATTAIN IT.

NO DECISIVE OFFENSIVE OR DEFENSIVE ACTION OF THIS WAR HAS BEEN EXECUTED SUCCESSFULLY WITHOUT AERIAL SUPERIORITY OR AT LEAST SUFFICIENT AIR STRENGTH TO CHALLENGE THE SUPERIORITY OF THE ENEMY.

THE JAPANESE ATTACK ON PEARL HARBOR AND IN THE PHILIPPINES STARTLED A COMPLACENT AMERICA OUT OF ITS HABIT OF PASSIVE THINKING. THESE LIGHTNING STABS AT OUR VITAL DEFENSES CONVINCED EVERY REAL AMERICAN THAT WE MUST GO INTO THE AIR WITH SUFFICIENT STRENGTH TO DESTROY THE ENEMY.

OPERATIONS OF THE ARMY AIR FORCES OVER THE PHILIPPINES, MALAYA, MACASSAR STRAITS AND DAVAO HAVE DEMONSTRATED THE SUPERLATIVE QUALITY OF OUR COMBAT TEAMS AND AIRCRAFT. VETERANS OF OUR AIR FORCE CONTINUE TO EXCITE THE WORLD BY THEIR EXPLOITS OVER RANGOON AND THE BURMA ROAD.

WE HAVE JUST BEGUN--MUCH REMAINS TO BE DONE. TEAMWORK IS THE ANSWER TO SUCCESSFUL AERIAL WARFARE. THE ENTIRE ARMY AIR FORCES MUST OPERATE AS A TEAM SMOOTHLY AND EFFICIENTLY--WITH MINDS, HEARTS AND HANDS.



CARL SPAATZ  
Major General, U.S. Army  
Commanding General  
Air Force Combat Command



## Ten For One

# U. S. Tigers Claw Japs

AMERICAN pilots in the Chinese Air Force are giving Japanese airmen their worst licking of the war. Trained in new and devastating pursuit tactics by a former acrobatic ace of the U.S. Army Air Corps, the American Volunteer Group in China is knocking down more than 10 Jap planes for every loss of its own.

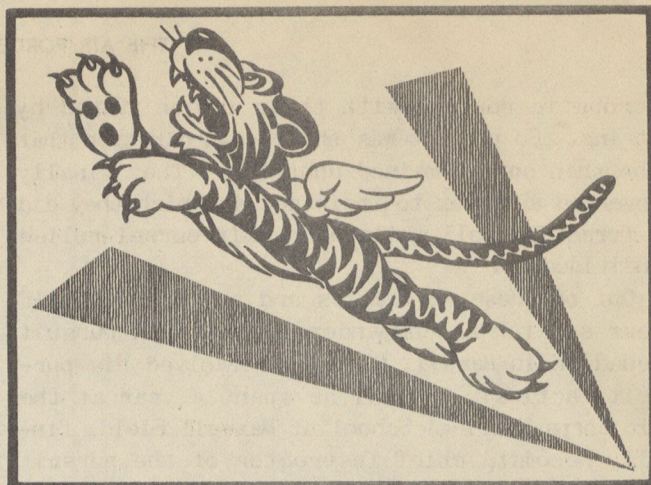
In less than two months they have driven Japanese bombers from the vital Burma road, parried heavy aerial thrusts at its chief port, Rangoon, and blasted Jap air bases in Thailand and Indo-China. At January's end these American pilots had destroyed at least 135 Jap planes in the air and wrecked another 50 on the ground, and had lost only 11 of their own pilots. They have become national heroes of the oft-bombed Chinese who hail them as "The Flying Tigers".

### All Former U.S. Flyers

The story of the Flying Tigers is one of the strangest sagas of American aviation—a saga of American planes and young American pilots touched off by a spark of military genius in a battle 6,000 miles from home. The pilots were fresh from American military flying schools. All of them resigned commissions in the U.S. Army, Navy and Marine air forces to fight the Japs over China. Their fighter planes came from American factories that had already learned to make more potent pursuits. The spark of genius came from a tall, taciturn, Texas school teacher, Claire L. Chennault, retired U.S. Army Air Corps captain and now a brigadier general in the Chinese Air Force.

Chennault and his planes and pilots got together in China last summer. Six months later they celebrated Christmas together by clawing 48 Jap planes from the sky over Rangoon in the most spectacular victory of the Asiatic air war.

Sixty Jap bombers roared toward Rangoon at 15,000 feet the day before Christmas. A Tiger squadron of 18 planes sped up to 18,000 feet, swooped down to make the interception and send their first victims spinning into the jungles and rice paddies around Rangoon. The Tigers darted at the heavier Japs in wide weaves from above and below instead of making the conventional side approach. The Jap formations broke



and fled with Tigers hunting them far into Thailand.

On Christmas Day the Japs came back for more and got it. Formations totalling 70 planes made the attack and again 18 Tigers went up to meet them. In this fray the Tigers brought their two day score to 48 enemy planes against a loss of three of their own planes and two pilots. Instead of climbing to 18,000 feet as ordered, both of the American pilots lost mixed with a British squadron, apparently became confused and met the Japs on their own level at 15,000 feet. There they were caught in heavy cross-fire from an enemy bomber echelon.

The tactics that enabled the Tigers to hang up this remarkable record were developed by Chennault during 18 years as one of the hottest acrobatic pilots ever to kick around an Air Corps pursuit ship and four years of observing the Jap air force in action.

The first World War jolted Chennault from a career as a business college teacher and high school principal. He joined the Aviation Section of the Signal Corps in 1917 as a ground officer and stayed with it to become one of its greatest pilots. But throughout his aviation career he never lost interest in teaching and seemed imbued with a deep seated desire to pass on the knowledge he had accumulated.

As leader of the "Three Men on a Flying Trapeze", he originated, taught and performed formation acrobatics that have never been equalled. In the early 1930s Chennault, then a captain, and his companions—first, Lieut. H.S. Hansell (now a lieutenant colonel) and Lieut. J.H. Williamson, and later Williamson and Lieut. W.C. McDonald kicked their P-12 pursuits around in incredible formation acrobatics at all of the major air shows.

They flew as if a single hand controlled the sticks of the three planes. They did spins in perfect unison and once flew through an entire



acrobatic routine with their ships linked by string. So perfect was their co-ordination that the thin cord remained unbroken. They finally invented a climax to their act in which they did a formation roll while each ship barrel-rolled individually.

Out of these acrobatics and a two and a half year stretch as commander of the 19th Pursuit Squadron in Hawaii, Chennault evolved his pursuit tactics. In 1931 he spent a year at the Air Corps Tactical School at Maxwell Field, finally becoming chief instructor of the pursuit section and writing a text on pursuit tactics.

Maj. Gen. John F. Curry, then commandant of Maxwell Field reported that Chennault was "one of the outstanding authorities on pursuit aviation, a fearless pilot and an able air leader." Chennault was frequently called to Air Corps headquarters for expert opinions on new pursuit designs and supervised many service tests of new equipment in the field.

In 1936 his two partners on the Trapeze team, Williamson and McDonald, left the Air Corps to run Chiang Kai-Shek's Central Aviation School in Hangchow, China. But Chennault's flying days seemed over in 1937 when he was retired for physical disability incurred in line of duty.

But Williamson and McDonald persuaded Chennault to join them and he arrived in China shortly after the outbreak of the Sino-Japanese war to teach pursuit tactics to the Chinese Air Force. The Chinese air effort waned as the war continued but Chennault stayed on, studying Jap tactics and helping organize an air raid warning system, now so efficient that Chinese headquarters are warned of raids while Jap bombers are still warming up at their bases. Chennault also set up air bases in the interior, preparing for the day when China could strike back.

Last summer Chennault was made a brigadier general in charge of Chinese Air Force combat units and became responsible only to Chiang Kai-Shek. The American Volunteer Group was formed, with its main task to drive Jap bombers from the Burma road and insure delivery of American war supplies to the Chinese armies.

Chennault spent six months moulding his planes and men into as fine a fighting force as had ever left the ground, despite a shortage of spare parts, ammunition and fuel. In spite of minor miracles performed by the ground crews, many of their plane losses have been due to overworked engines rather than Jap bullets. To conserve ammunition, the Tigers were trained to get their Japs with their first burst. Combat



*Brigadier General Claire L. Chennault  
of the Chinese Air Force*

reports show that about 8 of every 10 Japs downed fall during the first "squirt" from the Tigers' guns.

Chennault trained his men like a college football team. He quartered them in special hostels where American food and drinks were served and American chocolate and tobacco were available. Every Tiger carries a bottle of alcohol to sterilize eating utensils and be used on minor injuries in the field.

The Tigers were whipped into perfect physical condition with daily calisthenics and plenty of baseball and football. In addition to tactical maneuvers, Chennault taught them all he knew about the Jap airmen until they were able to anticipate almost every enemy tactic and maneuver and always keep one jump ahead.

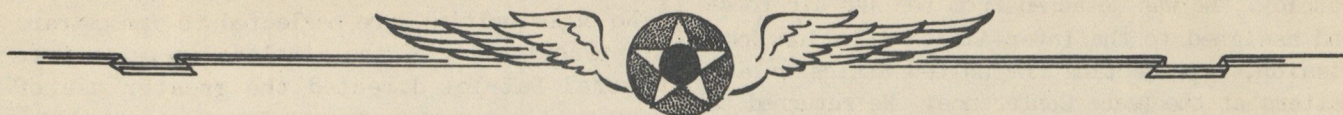
They finally went into action in the middle of December and by December 27 the Burma road was free of bombs. The wrecks of 47 Jap bombers east of the road marked the limit of Jap aerial

*(Continued on Page 8)*



## First Air Corps Chief Dies

# Gen. Patrick Waged Early Fight for Air Power



DEATH came to Major General Mason Mathews Patrick at a time when the United States was engaged in building the most powerful military air machine ever conceived.

This gigantic air structure will serve as a living memorial to General Patrick, who as the first Chief of the Army Air Corps laid its foundation.

As Chief of the American Air Service in France during the first World War, he foresaw air power's potential importance in any future conflict. As first Chief of the Air Corps he waged a peacetime struggle preparing a framework for the aviation expansion he knew must come.

He was 78 when he died. But age meant little to General Patrick. At the age of 60 he became a qualified airplane pilot—the first major general and the oldest Army officer ever to receive that rating. Exacting, punctual and studious, it was typical of the General. At a banquet commemorating the event, he explained to fellow airmen that he had taken up flying, not in search of personal glory, but to gain a clearer conception of the skill required of a pilot. (His instructor was Major General Herbert Dargue, then a major, who has been unreported for several months after an official flight while commanding the First Air Force at Mitchel Field, N.Y.)

Becoming a pilot was more than an outstanding personal feat for General Patrick. By insisting on being a flying air chief, General Patrick built up the morale of the Corps; in his constant emphasis on flying as an essential mode of transportation he did much to convince the public of its great usefulness in time of peace.

### Followed Aviation Developments

Active until about a month before his death on January 29 at Walter Reed General Hospital in Washington, General Patrick had kept in touch with recent aeronautical developments. Following his six-year administration of the Air Corps ending in 1927, he carried on his fight for aviation progress as an expert on air traffic, lecturing on this subject before military and private audiences. From 1929 to 1933 he served as a member of the Public Utilities Commission

in Washington, where he made his home. His wife, the former Grace Cooley of Plainfield, N.J., died in 1938. Their one son, Capt. Bream C. Patrick, is now on duty with the Headquarters Army Air Forces.

General Patrick's genius was organization. It was organization that was needed when he became Chief of the American Air Service in France, and organization was demanded in setting up the post-war air program. A trained engineer, he applied his construction skill to aviation. General Patrick had graduated from the United States Military Academy at West Point in 1886 as number two man in a class of 77, and was commissioned in the Corps of Engineers. At the close of the Spanish-American War, he was named Chief Engineer Officer with the Army of Cuban Occupation.

### Fine Showing In World War I

By 1917 he had reached the rank of colonel. He sailed for France that year in command of the First Engineers. After a few months overseas he was promoted to brigadier general and placed in charge of all construction and forestry in the AEF. Only soldiers who knew the vast camps, great cantonments and vast docks which sprang up almost overnight can appreciate the magnitude of that task. For six months General Patrick served as Commanding General of the Line of Communications. Then seeking a man with vision and a strong hand, General John J. Pershing, his classmate at West Point, appointed General Patrick Chief of the Air Service.

The success of General Patrick's administration is a matter of record. American airmen shot down 776 German planes while losing only 290 of their own. Within the short space of a year America had turned out 7,118 airmen from her flying schools, built up an air force of 149,000 men and produced 11,760 planes and 30,630 engines. The air force thus created was more than twice the size of America's entire army before the war.

But General Patrick's work in aviation had just begun. Following the Armistice he was assigned the job of tearing down the tremendous edifice he had built up overseas—the job of re-



turning the men to civil life, disposing of surplus property and building for peace.

There was no settling down for General Patrick. He was detached from the AEF air force and assigned to the Inter-Allied Aviation Commission, representing the United States on air matters at the Peace Conference. He returned to this country in July, 1919. For his war service he was awarded the Distinguished Service Medal, the French Legion of Honor, the Italian Order of St. Maurice and St. Lazurus, the Belgian Certificate of the Order of Leopold and the Order of the British Empire.

After serving as commanding officer of the Engineer School at Fort Humphreys (now Fort Belvoir, Va.) for two years, General Patrick in October, 1921, was appointed Chief of the Air Service. The Air Service became the Air Corps in 1926, and he served as Chief until reaching the retirement age of 64 on December 13, 1927.

#### Reorganized American Air Power

These were aviation's formative years in the United States and one of the most crucial periods for military aviation. General Patrick's task was the complete reorganization of the Air Corps. Having already been subjected to several investigations, Army aviation was ultimately placed under scrutiny by some 13 separate boards and commissions appointed by the Executive Branch or by Congress to examine its structure and make recommendations for changes. To many, General Patrick is best known as the firm, far sighted air leader and orator who appeared before committee after committee on Capitol Hill, sending home his message of progressive thought on aviation. The record of his testimony reads like prophecy of what has now come to pass.

While conducting the fight for adequate legislation, General Patrick was putting his words into action. He saw the great need for building up the American aircraft industry. But faced with the necessity of operating with the greatest possible economy, he had to make maximum use of the equipment at hand and the large stock of war-built planes which could be rebuilt and reconditioned at about half the cost of new ships.

To stimulate aircraft production and air-mindedness on the part of the public, General Patrick built up a new interest in aviation by fostering spectacular but scientifically valuable air exploits. The public soon sensed the future in store for aviation by such achievements by Army flyers as the around-the-world flight, the good will flight around South America, the flight to Puerto Rico, the non-stop

flight across the American continent, the dawn to dusk cross-country hop, and the flight from Oakland, Calif., to Honolulu, Hawaii.

No opportunities were neglected to demonstrate the practicality of the airplane in peacetime. General Patrick directed the greater use of planes in spotting forest fires, patrolling flooded areas and directing rescue operations, dusting cotton and other crops to eliminate insect pests, and in aiding in mapping areas inaccessible by foot.

#### Supported Technical Developments

Building up what finally became the Materiel Division, located at what is now Wright Field, Dayton, Ohio, General Patrick fostered the production of new planes and the standardization of types into pursuit, attack, bombardment, observation and cargo ships. In the six years from 1921 to 1927 work was intensified on air-cooled and water-cooled engines and on numerous instrument aids to aerial navigation; the parachute and other flying safeguards were perfected and wearing of a parachute by Army flyers made mandatory; a network of landing fields and airways was begun; air navigation maps were developed on a new status, and aviation medicine and radio came into being on a modern scale.

Training kept pace with technical advancement. General Patrick directed the establishment of Randolph Field, Texas, and the coordination of courses of instruction at primary and advanced flying schools. Every effort was made to turn out airmen accomplished in aerial gunnery and bombardment, and competition in bombing among tactical squadrons was fostered. Impetus was given to the training of Air Corps Reserve Officers, and aviation training applied to National Guard and R.O.T.C. Officers. In 1926, summer training camps for Reserve Officers were held at virtually all Air Corps fields.

The persistent efforts of General Patrick to secure an increase in Air Corps personnel culminated in the appointment by the Secretary of War, in 1923, of a board of officers known as the Lassiter Board to make recommendations on reorganization of the Air Corps. The program formulated by this body contemplated a minimum peacetime strength of 4,000 officers, 2,500 flying cadets, 25,000 enlisted men, 2,500 airplanes and some lighter-than-air equipment, all to be secured by progressive development over a 10 year period. Although the Secretary approved the proceedings of the Board in principle, no

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## Air Power Recognized War Changes High Commands



THE first two months of war brought a series of promotions and transfers to Army Air Forces senior officers, and again emphasized the increasingly important role of air power in the grand strategy of the United Nations.

Maj. Gen. Henry H. Arnold, Chief of the Army Air Forces, was promoted to the grade of lieutenant general. Maj. Gen. George H. Brett, Chief of the Air Corps, was named Deputy Supreme Commander of the Allied Forces in the Southwest Pacific with the rank of lieutenant general. Lieut. Gen. Delos C. Emmons, former Chief of the Combat Command, was appointed military commander of the vital Hawaiian area. Brig. Gen. Joseph T. McNarney was made a member of the board investigating the Japanese attack on Pearl Harbor and promoted to major general.

Maj. Gen. Millard F. Harmon, former commander of the Second Air Force, was appointed Chief of the Air Staff succeeding Brig. Gen. Carl Spaatz who was promoted to major general and made chief of the Combat Command. Maj. Gen. Walter R. Weaver left his post as commander of the Southeast Air Corps Training Center at Maxwell Field to become Acting Chief of the Air Corps.

Maj. Gen. Frederick L. Martin was given command of the Second Air Force in the vital Western Defense Command on the Pacific coast. He was relieved as commander of the Hawaiian air force to testify before the Pearl Harbor investigation board. General Martin was succeeded by Brig. Gen. Clarence L. Tinker, former commander of the Third Interceptor Command, who was promoted to major general.

### Arnold's Rise Rapid

General Arnold's elevation to lieutenant general climaxed a series of promotions from brigadier general commanding the First Wing of the GHQ Air Force at March Field in 1938 to the post of Chief of the Army Air Forces, Deputy Chief of Staff for Air and represented American air power at the important Anglo-American military conferences held in Washington during the visit of

*(It is interesting to note that the Roberts' report covering the investigation at Pearl Harbor gave no intimation of dereliction of duty on the part of any Air Forces personnel.--Ed.)*

British Prime Minister Churchill. General Arnold is also president of the Air Council.

General Brett several months ago began an extended tour of the world war fronts and flew General Wavell, British Commander of India and Supreme Commander of the Allied Southwest Pacific forces, to the conference at Chungking where plans for the unified command were formulated.

### Brett A Specialist

General Brett learned to fly in 1915 after service as a lieutenant of the Philippines Scouts. He has been a specialist in air supply service and administration and has also served as commander of several tactical units and air bases. In October, 1940, he was promoted to major general and the following month was designated Assistant Chief of the Air Corps. He succeeded General Arnold as Chief of the Air Corps last May.

General Emmons served as Chief of the Combat Command (formerly GHQ Air Force) since 1939. He returned to familiar territory in taking over the Hawaiian command for he served a tour of duty in Hawaii as commanding officer of the 18th Composite Wing shortly after his graduation from the Command and General Staff school at Fort Leavenworth, Kansas, in 1933.

### Harmon Served In Philippines

General Harmon came to AAF headquarters with a long record as a commander of tactical units. A West Point graduate, General Harmon began his army service in the Philippines with the infantry. He was assigned to the Aviation Section of the Signal Corps in 1916, served with the First Aero Squadron on the Mexican border and accompanied a special expedition into Mexico. A month before the United States entered the first World War, General Harmon sailed to France on an observation mission and attended French aviation schools. He was assistant chief of the Air Service Advance Zone in AEF headquarters for six months, and later served as a pilot with a French combat group near Soissons, where he won the Croix de



Guerre with a bronze star. In April, 1918, he returned to AEF headquarters to select airdrome sites and types of motors for American equipment. After the war he served a year as a member of the Air Service Advisory Board. He graduated from the Command and General Staff School and the Army War College and served on the War Department general staff before being appointed as commandant of the Air Corps Primary Flying School at March Field, California, in 1927.

General Harmon also served as an instructor in the Command and General Staff school and assistant commandant of the Air Corps Tactical school at Maxwell Field, Alabama. Among the tactical units he has commanded are the 3rd Attack Wing at March Field, California, the 20th Pursuit Group at Barksdale Field, Louisiana, the 7th Pursuit Wing, Mitchel Field, Long Island, and the Fourth Interceptor Command, Riverside, California, and the Second Air Force, at Fort George Wright, Washington.

#### Tinker Holds Medal

General Tinker wears the Soldier's Medal, awarded with the following citation:

"For heroism on Sept. 21, 1926, in rescuing Commander Robert Burg, U.S.N., from a burning aeroplane near Kenley Aerodrome, London, England. Although injured and in a semi-dazed condition due to the crash, Major Tinker was able to get clear of his burning plane, but when he realized that Commander Burg was still in the cockpit, he rushed back into the flames in an attempt to rescue his passenger. He was driven back by the intense heat, but returned to the other side and after repeated and determined efforts, being badly burned in the attempt, he extricated Commander Burg and dragged him, unconscious, to a place of safety."

General Tinker spent many months in English and American hospitals recovering from the injuries he suffered in the crash. After his recovery he served as assistant commandant of the Advanced Flying School at Kelly Field, Texas. He subsequently commanded Mather Field, California, and then began a series of tactical unit commands. He was in charge of Route 18 from Oakland while the Army Air Corps flew the air mail and then commanded pursuit and bombardment units at March and Hamilton Fields. After a tour as Chief of the Aviation Division of the National Guard Bureau and Chief of the Supply Division of the Office of the Chief of the Air Corps, he again resumed command of tactical units, leading the 27th Bombardment Group at

Barksdale Field, the 3rd Bombardment Wing at MacDill Field, Florida, and finally the Third Interceptor Command at Drew Field, Florida. General Tinker began his military career as a second lieutenant in the Philippines Constabulary in 1908 and learned to fly in 1920.

General Weaver comes to the Office Chief of Air Corps from the command of the Southeast Air Corps Training Center at Maxwell Field. He was assigned to the Air Corps during the World War after 10 years service in the infantry. General Weaver learned to fly in 1920 and has since specialized in Air Corps administration. Among his notable achievements in this field was his handling of flood relief in southern Alabama during the Mississippi River flood of 1929 during which 28 tons of food and medical supplies were delivered by air to stricken communities. General Weaver has also devoted much time to the development of aircraft radio.

General McNarney learned to fly in 1917 and spent nearly two years in France with the Air Service of the AEF. He commanded the Observation Groups of the First Corps in the Chateau Thierry offensive, the Fourth Corps in the St. Mihiel drive and the Fifth Corps in the Argonne operations. After the Armistice he remained in Paris for several months writing a manual on observation techniques. Since the war General McNarney did several tours of duty in the War Department and commanded various flying schools and tactical bombardment units. He was appointed to the joint Army and Navy Planning Committee in 1939.

General Eaker is another colorful veteran of the Army Air Forces with a reputation as an author as well as a pilot. He collaborated with General Arnold in writing "Winged Warfare" and "This Flying Game", and was decorated by three foreign governments for his participation in the Pan American Goodwill Flight in 1927. He also wears the Distinguished Flying Cross with an Oak Leaf Cluster. He was chief pilot of the "Question Mark" which set a world endurance flight record in 1929, and made the first blind flight from coast to coast. He commanded the 34th Pursuit Squadron and the 17th and 20th pursuit Groups. His present permanent station is with the First Air Force at Mitchel Field, Long Island.

General Olds, 45-year-old chief of the Ferry Command, is one of the youngest generals in the Army. He is a pioneer in the field of heavy, long range bombardment and commanded the famous Second Bombardment Group at Langley Field, which service tested the original B-17s. He commanded



## AIR FORCES GENERALS IN WAR SPOTLIGHT



GENERAL HENRY H. ARNOLD



GENERAL GEORGE H. BRETT



GENERAL DELOS C. EMONS



GENERAL CLARENCE L. TINKER



a group of six B-17s on a Goodwill Flight from Langley Field to Buenos Aires and return and a year and a half later participated in another mission under the command of General Emmons which took seven B-17s on a round trip to Rio de Janeiro. For his South American flights, General Olds received the medal of the International League of Aviators, the Mackay Trophy, the Distinguished Flying Cross and decorations from Latin American countries. General Olds served as an air traffic expert for the Army Air Forces shortly before his assignment to organize the Ferrying Command. Originally organized to speed bombers to Britain, the Ferrying Command is now the largest air line in the world, girdling the globe to supply the combat units of the AAF and of its allies with planes, parts and equipment.

#### DEPOT EMPLOYEES COOPERATE

All of the employees of the Waco Sub-Depot Supply, Waco, Texas, signed a letter addressed to the commanding officer of that Air Service Command activity, reading as follows:

"During this period of extreme emergency, we, the undersigned employees of the Waco Sub-Depot Supply, Waco, Texas, volunteer to work as many hours per day, seven (7) days a week, if and when necessary, as the Sub-Depot Commander may direct, with the understanding that no compensation will be derived."

Employees who signed the letter are: George W. Whitlock, Amos D. Alley, John H. Mack, Alvis T. Barkley, Elroy C. Untermeyer, David Comb, Joe B. Reed, Harry P. Ankerson, Jr., Earline Carpenter, Carmon F. Beavers, Maurice Cole, Martin J. Arnold, Elmer Cunningham, Wynell L. Woodall, Marie Helen Adler, Catherine Camp and Francis Collis.

"Wings" were recently presented to the first group of Royal Air Force cadets undergoing instruction under the American flying training program. These cadets graduated from the Advanced Flying School at Turner Field, Ga., which is under the jurisdiction of the Southeast Air Corps Training Center. Colonel John B. Patrick, commanding officer of Turner Field, delivered the graduation address, and Major Norris B. Harbold, the director of Training, presented the "wings" to the Englishmen.

A 30-minute coast-to-coast radio broadcast featured the graduation exercises, and the program was sent to England over short wave.

U.S. TIGERS... (Continued From Page 2)  
operations. The world knows now how the pilots from Texas, New York, California, Ohio, Florida and a dozen other states routed the Japs again in the blazing holiday battle over Rangoon; how they carried the war to the enemy by escorting Chinese and British bombers to burn and blast the big Jap air bases at Hanoi, in Indo-China and Raheng, Tak and Mesod in Thailand and a half dozen other fields.



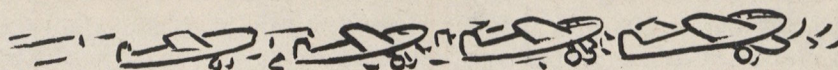
Civilian pilots between the ages of 21 and 45, who possess 500 certified flying hours, of which 250 hours have been on aircraft of 400 h.p. or better, are eligible for employment in ferrying aircraft for the U.S. Army Air Corps Ferrying Command. They will receive temporary employment under the Civil Service for an initial period of 90 days, beginning at a salary of \$3,600 per annum. A per diem expense allowance of \$5.00 will be paid on all domestic ferry trips away from home station, and \$6.00 on trips outside the United States.

Advancements may be effected at the end of each 90-day period, upon the recommendation of the Control Officer of the Air Corps Ferrying Command, who may at that time also recommend ferry pilots for reserve commissions, grades of rank being dependent on age and experience.



## The Setting Sun

# A German View of Japanese Air Power



IT is difficult to get an exact picture of the air power of the land of the Rising Sun, for everything that concerns its military power is concealed behind a heavy veil of secrecy.

Japan has no separate, independent air power. All planes are divided between the Army and the Navy. The highest estimate of the total number of Japanese planes is 4,500. The British magazine *Aeroplane*, in the March 7, 1941, number, places the total at 3,000 or less. The German *Handbuch der Luftfahrt* of 1939 estimates 2,600 planes, training planes and reserve material included, with a total personnel of 33,000 men. These are divided between the Army and the Navy at a ratio of two to one.

### French and German Influence

Originally the air arm of the Army was influenced strongly by the French and Germans, both in planes and instructors. French and German influence are still plainly noticeable in Japanese plane construction. Only in recent years has American influence made itself felt. The Japs have no originality either in plane construction or in the field of tactics.

In the Army air force the regiment is the highest tactical unit. The regiment has its own flying fields, ground service and training schools. The regiment consists of two to five squadrons of about 10 planes each. The planes are of the same type, although squadrons appear in China which have three heavy bombers and six planes of a lighter type which are also scouting planes. Among the planes in the first line is an approximately equal number of bombers, pursuit planes, and scouts. The Army has six training schools for its air power: a flying and technical school at Tokorozawa, and air fighting school at Akeno, an observers' school and specialist training school at Shimoshizu, bomb-dropping training school at Hamamatsu, a flying school at Kumagi, and an air defense school at Inagemachi. There are said to be 3,000 Army flyers. The Navy is supposed to have 2,100. The training schools produce a bare 700 a year.

In the field of warship construction Japan patiently followed and imitated the great West-

ern Powers for many years. Neither did she do any pioneer work in the field of aviation. Before 1914 only a few officers of the Army and Navy had voluntarily dedicated themselves to the air service and had gotten training as flyers abroad, particularly in France. After the World War Japan began to use planes more generally in its military operations in Siberia. In 1919 the systematic building up of the air services was begun. The first flying field for the Navy was at Kasumigaura, and for the Army, at Tokorozawa. Just as once under the shoguns and at the beginning of the Meiji period between 1845 and 1875 foreigners were called in to organize the Army and the Navy, so now also foreign instructors were taken in to organize the new war weapon.

In the spring of 1919 an English commission of 40 men under Lieutenant Stempthill arrived to organize the naval flying service, and a French commission of 60 men under Lieutenant General Faure for the Army air service. Interest in flying clubs and aeronautical companies was stimulated. Now Japan stands among the great powers in respect to its air force.

### The Naval Air Force

After the first Navy flyers returned in 1912 from training in France and the United States, a training field was constructed at Opama near Yokosuka. English officers shared in this training from 1919-22. During this period the Japanese air weapon thrived and an extensive construction program was set up. In 1923 there were already 9 squadrons with 8 machines each, a few reserve planes at the land bases, together with a number of planes for the ships. From 1927 on this naval air force grew quickly. In that year a special bureau for the Naval Air Force was set up in the Navy Department. In 1937 there were 19 naval bases with 33 squadrons. These bases were in the bay of Tokyo: Opama (Observers' School), Tateyama, and Kisaruzo; to the north was the large flying school Kasumigaura; on the inland sea; Kure, Hiro, Saeki, and Kishimoto; on the west coast of Kiyushu: Sasebo, Omura, Kagoshima and Kanoya; on the west coast of Honshu: Kuritza near Mazaru; in Korea: Chinkai; in the north: Ominato and



Namuro; in the south: Chichima on Bonin Island together with Saipan and Palau. In addition there are bases in all larger cities of the main islands growing steadily.

According to the latest information, the Navy has 39 squadrons with between 1,000 and 1,500 planes. The greatest number of these planes are shore-based. These planes have an active share in the war on land in China. The ships which carry planes are the carriers, the battleships, cruisers, and plane tenders. The carriers are the Hosho with 26, the Kaga with 80, the Akagi with 60, the Ryujo with 24, the Soryu, Hiryu, and Koryu, each with 40 planes. The tenders are the Noto, Kamoi, Chitose, Chiyoda, and Midzuho. These ships have no flight deck, but carry a number of seaplanes. The nine battleships, modernized after 1928, have a catapult and three planes aboard. The 37 cruisers over 5,000 tons have one or two catapults and one to four planes. No information is available on newly constructed warships.

#### The Planes

The negligible pioneer work in the Japanese airplane industry has already been pointed out. A closer view of the types of planes shows that the Japanese are far behind their contemporaries abroad. This is true at any rate for the machines designed in Japan. In addition there is much construction under license, which furnishes good copies of original machines and plane motors. The airplane industry has to fight against various difficulties. First of all there is little cooperation in the air field. There is no central organization that regulates development and production. The military air service is under the Naval Ministry; the civilian service under the Department of Commerce; whereas aeronautical research belongs to the Ministry of Instruction. Furthermore, the air service industry lacks, in spite of its privileged position, trained workers, modern machinery, and above all the necessary raw materials. In the field of raw materials, machinery and technical workmen, Japan is dependent on other countries. German technicians are now trying to supply the necessary schooled personnel. Estimates concerning the output of Japanese airplane industry vary. Insiders consider it to be from 1,500 to 2,500 planes a year from the 40 or more factories. This means that Japan will not be able to supply its own needs if it becomes involved in a war against the United States or even in a War against the Russian air power in the Far East. According to reliable

information the construction of 1938-39 was little more than 1,000 planes.

The great airplane firms are Kawanishi, Kawasaki, Mitsubishi, Nakajima, and Tatikawa. These are the factories from which the Army and Navy draw almost all their planes and supplies. In addition, in the last years Japan has been able to import a great number of foreign planes or to build them under license. These are the Junkers G 38, 86, and 87, the Heinkel 112, the Fiat CR 42 and BR 20 M, the Koolhoven FK 58, the Hawker Nimrod, the Lockheed 14, the North American 16, the Seversky P 35, and the Martin 166. Kawanishi builds among other kinds Short seaplanes and Rolls Royce motors under license for the Navy. Kawasaki furnishes pursuit planes and bombers, and has licenses from Dornier and B.M.W. Mitsubishi builds for the Army and the Navy, has licenses for Blackburn scout planes and torpedo planes, Curtiss pursuit planes, Junkers dive bombers and Hispano Suiza, Sydney and Junkers motors. Nakajima builds its own designs, has licenses from Douglas and Fokker for commercial planes, and for Lorraine and Bristol motors.

The Navy and Army air power both operated in the Chinese conflict. The Naval Air Force seems to have specialized more on bombings behind the front, insofar as one can still speak of fronts here. The distribution of the naval air fields along all the Japanese coasts and over the captured islands in the mandated territory shows, however, that the real task of the shore-based naval air power is the guarding of the coasts and adjoining seas in collaboration with the other naval units. The Japanese Naval Air Force combines, like the Dutch East Indies Naval Air Service and the U. S. Naval Air Force, the tasks of the British Coastal Command and the British Fleet Air Arm. The main task of the Japanese Naval Air Force is not much in evidence in the Chinese conflict, for China has no sea power, and the sea war can be limited to a blockade.

#### Something About Japanese Tactics

Four years of war in China have shown a few things about the methods of the Japanese air force. Japanese bombers are assigned the following activities: Bombing of enemy plane bases; operations against railroads and shipping (coastal and river); bombing of enemy military forces on the battlefield and behind the battle lines; and bombing of large industrial and political centers.

The Japanese air force precepts prescribe as first task of the air arm the annihilation of



the enemy air forces in their bases. As a rule, the Japanese bombers undertake flights up to 250 miles past the front, accompanied by fighters, with which they frequently assemble along the route. Raids on flying fields are carried out by large groups (30-40 planes), and seldom by less than one squadron. Preliminary reconnaissance flights over air fields without simultaneous bombardment are never made. The accompanying fighters (15-30) fly in groups of three, echeloned at two or three levels, above, behind, right and left of the bombers, at a distance of 3,000 — 6,000 feet. The bombers usually approach at a height of 6,000 — 12,000 feet with the sun behind them, in formations dependent on the number of bombers. If they come upon enemy fighters, the bombs are immediately dropped from this formation. If there is no active air defense, a run is made over the objective, and finally test bombs are dropped. After that the flight is divided into groups of three or into squadrons, which attack separately their own assigned objectives. The bombs are dropped in horizontal flight.

#### Planes First Objectives

The objectives are first of all planes on the ground, then hangars or buildings. For the first target small fire and fragmentation bombs of 25 to 50 lbs. are used. These bombardments do not have much success. There are cases known where 40 Japanese bombers have let more than 200 bombs fall on a certain terrain, after which the Chinese could still use the field for taking off and landing. The return trip is often divided into groups of three (two bombers and one fighter). These return along different routes, thus making reconnaissance flights.

Night bombardments are little used. They had little success and were not made necessary by great Japanese losses in day attacks. The daylight attacks on flying fields, however, seldom caused the Chinese great losses, for they could spot the approach of the enemy and move their planes to a place of safety in plenty of time.

Railroads and ships are attacked with small formations of several planes and often in dive bombardments from 2,000 to 2,500 feet. Hits on railroad bridges are the greatest damage they can cause although this seldom occurs. Seldom do they cause a delay of more than 24 hours. Many river craft are sunk, however.

Against land military forces one-motored bombers are used exclusively. They attack by diving with fragmentation bombs of 25 lbs. Thirty to forty bombs are carried in one plane

along with machine gunners. They seldom come lower than 300-400 feet. The cooperation with the Army must be very good for this.

#### Incendiaries Used

In industrial and political centers the Japanese have a preference for bombing the Chinese quarters of cities, universities, government buildings, and hospitals. Against Chinese quarters they use incendiary bombs. In European quarters they use bombs of 500 to 750 lbs. When the Chinese air defense was still in a chaotic state, these massacres took place from low altitudes and were accompanied by formation demonstrations. Later when the Chinese had anti-aircraft protection and fighters, the Jap bombers flew at 10,000 to 12,000 feet, and a protecting screen of fighters was taken along.

In a defensive fight the Japanese bombers keep a closed formation for mutual firing support. The Japanese flight precepts prescribe: "Don't fire on the one whom you attack by chance, but on the one whom your comrade can't fire against." With a view to bringing all machine gunners into the firing, the Japanese groups change their formations during the air battle, and go above and below the pursuing planes to get them away from their leader. When once in battle the Japanese squadron as a rule attempts no dodging maneuvers which might result in the separation of a plane and its certain destruction. In other words, the defense of the squadron is such that the expedition continues, with mutual fire support, while transfers can be made within the group. Mutual firing support is considered to have little value in a squadron group when the planes are too far apart. The Japanese prefer a short firing distance (50 to 200 yards) for all types of planes.

- Reprinted from *Seemacht (Sea Power)*, a German magazine published in Berlin.

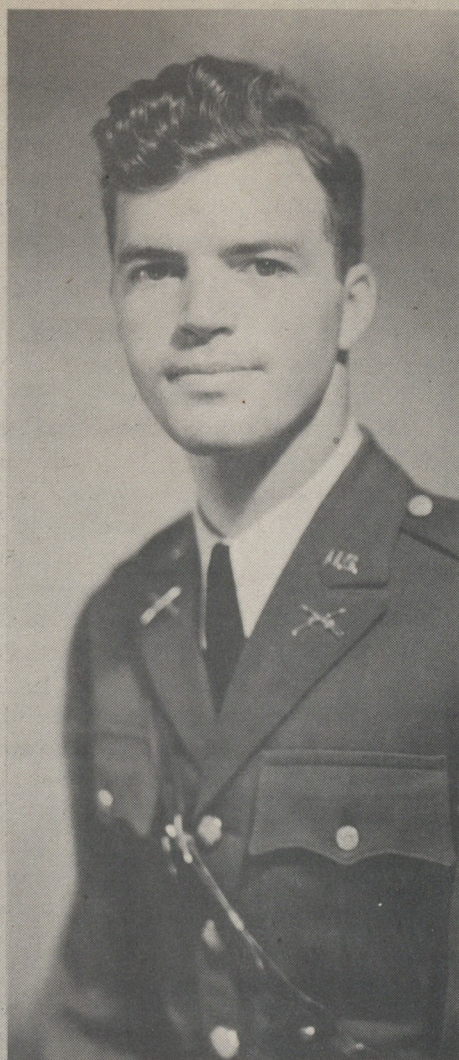
Lost during a cross-country flight, an aviation cadet made a forced landing in a plowed field near a Nevada town when his fuel supply became exhausted. Since the town residents had only once before seen a plane at close range—a Cub during a county fair, the cadet was accorded quite a reception, especially since the picture "I Wanted Wings" was shown that night at the local theater.

Negotiating with one of the citizens to guard the airplane during the night, the cadet was surprised to see that individual reappear shortly with a rifle, a pistol and two dogs. But, then, everyone in town carried a gun.

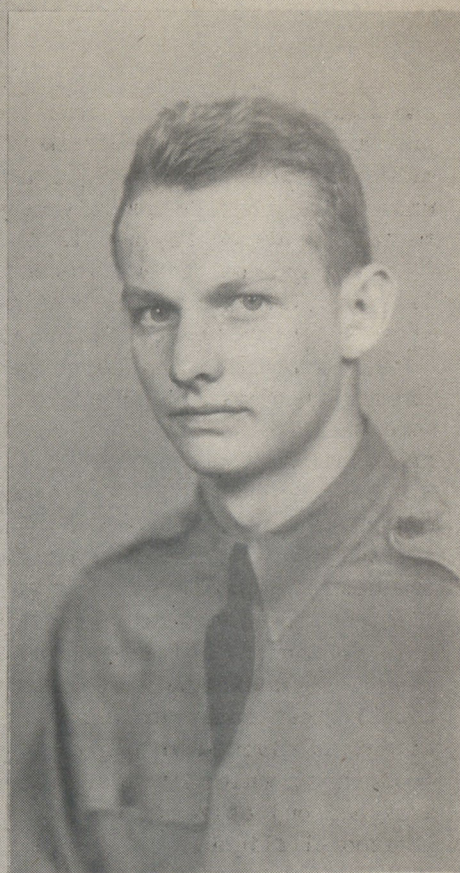




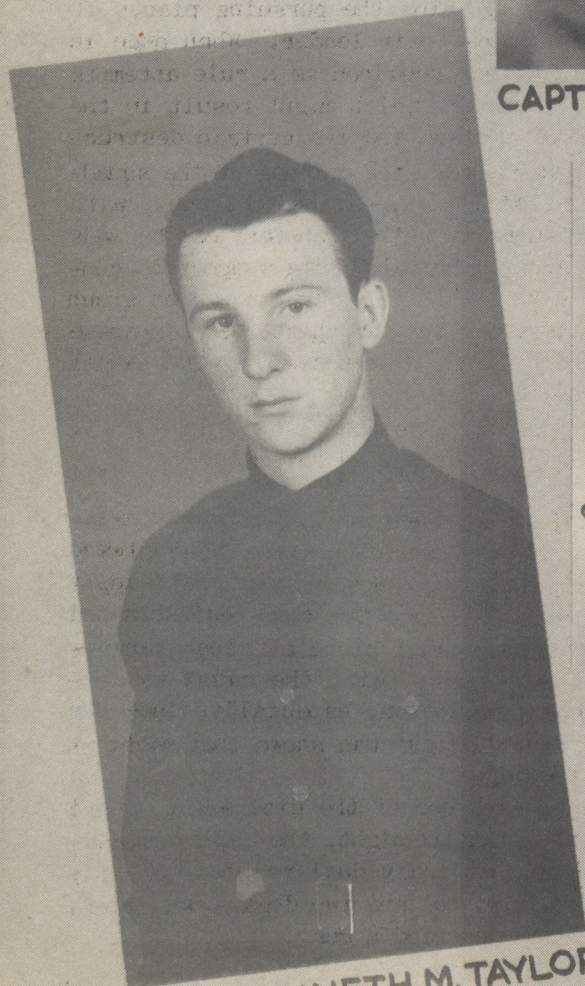
LIEUT. BOYD D. WAGNER



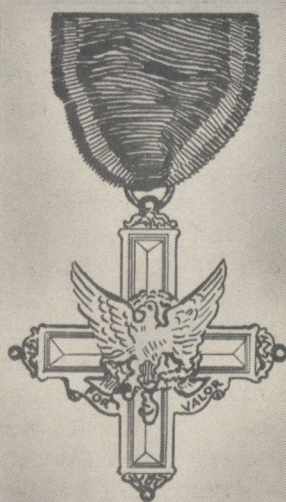
CAPT. COLIN P. KELLY JR.



LIEUT. GEORGE S. WELCH



LIEUT. KENNETH M. TAYLOR

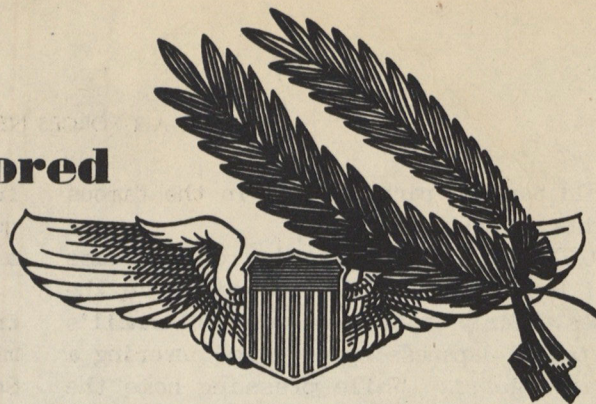


LIEUT. J. D. DALE



# Airmen Awarded DSC's First War Heroes Honored

By Lieut. Robert Hotz



ARMY airmen are writing a new chapter in the Annals of winged warfare. The tradition that began more than 20 years ago over the fields of France has been transplanted to Pacific skies where American air power stands astride the Japanese path to conquest.

Surprised and outnumbered during early phases of the battle, the pilots, gunners, bombardiers, and navigators of the Army Air Forces fought a magnificent action against swarms of Japanese attackers. Ground crews did a superb job to "keep 'em flying". After more than six weeks of bitter battle against superior enemy forces, AAF pilots were still in the air over Luzon and P-40s were still knocking down Jap bombers. Over the Indies, AAF bombers are pounding Japanese sea power with ever increasing violence.

Battle confusion and overloaded cables make it impossible to single out all the heroes of the AAF's baptism by fire. The names of many a young lieutenant who plunged his P-40 into a formation of enemy bombers and of many a bomber crewman who came through in a pinch are missing from the dispatches. To these unsung heroes is due a share of the formal honors given to airmen whose spectacular deeds have been recorded. All possess the skill and valor that is the invisible badge of the AAF.

## Captain Kelly A Symbol

The story of Capt. Colin P. Kelly, Jr., has been indelibly engraved in public prints and the hearts of his six fellow crewmen. Together Captain Kelly and his crew brought their big B-17 across Pacific wastes from Hawaii to the Philippines as part of the most spectacular trans-oceanic formation flight ever made by land planes. Flying a circuitous and uncharted route to avoid Jap patrols, they arrived in the Philippines less than two months before the outbreak of war.

Together at 23,000 feet, Captain Kelly and his crew found, bombed and sunk the 29,000 ton Japanese battleship Haruna off the northern tip of Luzon. Homeward bound, their mission completed, they were attacked by a pair of Jap fighters. Their bomber was badly hit and began to burn.

Captain Kelly, as pilot and commander, ordered his six companions to bail out and held the ship steady as one by one each crewman dove to safety. Captain Kelly vanished with his flaming ship. To the American people Captain Kelly has become more than a hero. He is a symbol of American air power victorious in combat.

Captain Kelly was awarded the Distinguished Service Cross posthumously at a ceremony which saw General MacArthur pin the Cross on Capt. Jesus Villamor of the Philippines Air Force and Lieuts. J.D. Dale and Boyd Wagner of the AAF. Captain Villamor was credited with knocking down a trio of Japs while leading his squadron of Filipino pilots. Lieutenant Wagner was the first AAF pilot to officially shoot down five enemy planes in World War II and was also credited with destroying a score of enemy planes in a daring ground strafing of a Japanese airfield near Vigan. Lieutenant Dale was credited with sending a pair of Japanese planes down in flames during the early days of the battle of Luzon.

Lieut. Marshal J. Anderson was described by General MacArthur as "one of the most intrepid pilots in the Philippines." The General personally decorated Lieutenant Anderson with the Distinguished Service Cross at a Luzon airfield almost immediately after his return from a foray in which he led his squadron to attack and disperse a strong formation of Japanese dive bombers and then strafed an enemy truck column. Lieutenant Marshal shot down a Japanese observation plane during this attack and several days later sent a Jap fighter down in flames. His own ship was damaged during the latter attack and Lieutenant Anderson bailed out. Two Jap fighters followed his parachute and shot him to death while he dangled helplessly in mid-air.

Col. H.H. George and Maj. Emmett O'Donnell have been singled out for special mention in heavy bombardment operations. General MacArthur recommended Colonel George for promotion to brigadier general as a result of "distinguished leadership and gallantry in action". A veteran in heavy bombardment, Colonel George won the Distinguished Service Cross as a pilot in the



first World War and participated in the famous B-17 flights to South America.

Major O'Donnell was the leader of the mass flight of B-17s from Hawaii to reinforce the Philippines. Early in the war Major O'Donnell's bomber attacked Japanese naval units covering a landing at Legaspi. While pressing home the attack, a squadron of Japanese carrier-based fighters attacked the AAF bomber. Continuing the attack on the naval units, the crew of the bomber shot down five Jap fighters and arrived safely at its base after Major O'Donnell made a perfect landing despite a pair of flat tires on his landing gear.

#### Others Cited For Bravery

Other fighter pilots cited in dispatches from the Philippines include: Lieut. Randolph Preator, credited with being the first AAF pilot to knock down an enemy plane over the Philippines; Lieut. Joseph Moore, who destroyed two of five Japanese planes engaged in machine gunning an AAF pilot who had bailed out, and Lieut. Samuel Merrett, who was killed leading his squadron in an attack on Jap naval units.

Outstanding heroes of the attack on Hawaii were Lieuts. George S. Welch and Kenneth W. Taylor. Both were awarded Distinguished Service Crosses for "extraordinary heroism over the island of Oahu on December 7, 1941".

Surprised by the early morning Jap attack on Oahu, Lieutenants Welch and Taylor drove 10 miles under fire from Wheeler Field to Haleiwa Field where their P-40s were stationed. They took off on their own initiative without making an effort to determine the number of Jap raiders. Over Barbers Point they sighted a formation of 12 planes 1,000 feet below and 10 miles away. They closed to attack, Lieutenant Welch shooting down a dive bomber and Lieutenant Taylor a pair of Jap planes. Lieutenant Welch broke off the attack after his guns jammed and an incendiary bullet passed through his plane just behind his back. Clearing his guns in cloud cover, he returned to the attack and shot down another Jap plane. Both AAF pilots returned to Wheeler field for more fuel and ammunition. While still on the ground another Jap formation attacked the field. Lieutenant Welch took off with three Japs on his tail and went to the assistance of another AAF pilot who was being attacked from the rear. Lieutenant Welch shot the Jap off the AAF plane's tail and pursued another Jap plane five miles out to sea where he shot it down. Lieutenant Taylor took off despite the fact that his guns were not

fully loaded and escaped into the clouds with a quick take-off ending in a chandelle. He eluded a formation of eight enemy planes.

Four other AAF pilots were cited for heroism under fire by Lieut. Gen. Walter Short, Hawaiian military commander. They were Lieut. Lewis M. Sanders who destroyed a Jap plane that had just sent an AAF ship down in flames; Lieut. Gordon Sterling, who attacked a Jap formation of six planes and destroyed one of them; Lieut. Phillip Rasmussen, who engaged a Jap pursuit over Schofield barracks and shot it down after a furious battle, and Lieut. Harry Brown, who suddenly found himself in the midst of a Jap formation and shot his way out after destroying one plane without damaging his own.

No story of the Pacific air war would be complete without mention of Marine Fighting Squadron 211 of Marine Aircraft Group 21 and its commander Major Paul A. Putnam. The initial Japanese attack on Wake Island by 24 bombers knocked out eight of the squadron's 12 Grumman Wildcats but it took weeks for fantastically superior Jap formations to knock the other four from the air. During that period Marine flyers shot down five Jap planes, sank one ship and one submarine. Never were there more than four Marine planes in the air at a single time and never did the Jap formations number less than 27 bombers.

Lauding the work of his ground crews, Major Putnam wrote in his last report: "Since the first raid, parts and assemblies have been traded back and forth so that no airplane can be identified. Engines have been traded from plane to plane, have been junked, stripped rebuilt and all but created. I wish to comment particularly on the indefatigable labor, ingenuity, skill and technical knowledge of Lieutenant Kinney and Technical Sergeant Hamilton. It is due solely to their efforts that the squadron is still operating."

The Japanese actually shot down 13 Marine planes, since Marine mechanics fashioned a new plane from the parts of the planes wrecked in the first bombing attack. The last Marine planes were knocked from the air on December 22, exactly 14 days after the first Jap attack. They were flown by a captain and a second lieutenant against a force of more than 60 Jap carrier and land based bombers. The captain was forced down, wounded, his ship a total wreck. The lieutenant was reported "lost". Thus ended the epic of Marine airmen over Wake Island, a performance that will stir toasts from AAF men everywhere.

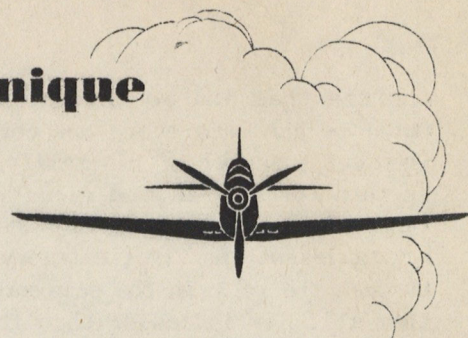


## Spotting the Enemy

# British Reveal Observers' Technique

By Air Commodore H. Le M. Brock

Vice Commander, Royal Observers Corps



THE man who has, so to speak, been brought up with aircraft will have no difficulty in distinguishing the peculiar features of the various types. He knows the whys and the wherefores of the constructional details, he knows the function of each type, he is interested in engines and performances, and notices new features. His knowledge is always up-to-date and he seldom fails to recognize anything he sees, or, if he does, he wants to know what it is. He is in much the same position as the countryman who has known all the common birds of the countryside since childhood and notices the rarer species that occasionally visit his neighborhood.

The novice in aircraft recognition is in a very different position. He will, no doubt, know by now that there are fighters and bombers, that some alight on land and others on the sea, or on the decks of ships, that some have only one engine and others two or more, that there are monoplanes and biplanes; but he will know the names of only a few that have been much written about in the press, and he will not know how to start distinguishing them in the air. It is the novice that we are considering in this short article, and one who cannot afford the time to attend courses, but must acquire the knowledge and skill at home.

### Silhouette Is Basic

It is now generally accepted that the silhouette is the foundation of all instruction in recognition. Silhouettes are easy and quick to produce on paper, they can be accurate and up-to-date, and can be distributed easily. They can be studied in the home and carried about in the pocket, in the form of books or, better still, as packs of cards.

Three views of the aeroplane are essential, the plan, the side and the head-on-view. If a three-quarter front view can be supplied as well, all the better.

There is no need, to start with, for any description of the aircraft, but only for their names, which should be printed on the backs of the cards. Alternatively, the cards can be num-

bered and a key of the numbers printed on a separate card.

The silhouettes should not be all-black for learners. White continuous or dotted lines should be used to show the constructional details of the aeroplanes, such as the flaps, rudders, undercarriage, engine nacelles, etc. Although some of these features may not be visible at a distance against the sky, they are of great assistance in learning to distinguish the silhouettes, and also for instilling into the mind of the learner an incipient interest in the parts of an aeroplane.

### Novice Should Learn 50

The number of types presented to the novice to learn in the first instance must be limited. Fifty is a convenient number. Three silhouettes of each will make a pack of 150 cards. Someone with full and up-to-date knowledge of the most common or important types, i.e. those that every observer ought to know, must compile the list. This is a very important part of the proceedings and must receive careful consideration. Biplanes should be omitted from the first 50 aircraft, and seaplanes and flying-boats can be omitted from the packs made for inland observers.

The pack of 150 cards can then be presented to the observer. It has been found that complete beginners can learn to recognize and name every card in a pack of 150 in 10-12 hours study.

A learner should start by dividing the pack into categories. A convenient division of the aircraft is those with:-

- (a) Single radial engines.
- (b) Single engines in line.
- (c) Twin engines with single fin and rudder.
- (d) Twin engines with twin fins and rudders.
- (e) Three and four engines.

By this means he can work up from the simplest and fewest to the more complex.

All he need do is to sit in his chair, lay out the cards on a table, starting with category (a), and note their names and distinguishing features. Then he should pick up the cards,



shuffle them and go through them repeatedly until he can name every one correctly. He may then get a member of his family to display them in turn for him to name *aloud*. This is important. He must learn to say the names quickly. Having learnt the first category, he can proceed through the pack in the same way until he knows them all. It is easier than it seems at first sight.

#### Takes "Screen Test"

He is then ready, along with others, to be put through a test with a prescribed number of the silhouettes projected on to a screen for, say, 10 seconds each, each competitor writing the names down on a piece of paper. When he has passed the prescribed test he has completed the first and most important stage of his career as an observer.

It is worth while saying here that not every observer has started in this way, yet the silhouette must be the foundation on which every beginner has had to base his learning. No doubt, if accurate scale models were available of every type, they would be of great value, but they are not easily produced in large numbers and they are apt to become obsolete rather quickly.

So far, the observer has only an arm-chair knowledge of silhouettes. This alone will not make him a good observer in the field, but he will have gone a long way towards becoming one. First of all, he will have become interested in aircraft, and, secondly, he will have begun to learn exactly in what way aircraft vary in their appearance or construction. He will also have learnt a lot of names, many of which are likely afterwards to be coming constantly to his notice in the picture papers. He will see photographs of them from different angles and come to know their uses, and who makes them. He has reached the stage when he feels he ought to be able to recognize them in the air.

#### Total Depends On Circumstances

Unfortunately, a difficulty immediately arises here, in that the number of types seen in any locality is usually very small, and very often they may be just those which are not on the list of the first 50. This brings us to the necessity of further lists and further packs of cards. The total must depend on the circumstances. In the tests of the R.O.C. Club there are 65 in the 3rd Class list, 55 in the 2nd, and 80 in the 1st Class list, a total of 200. The

2nd and 1st class lists include a number of Italian and French types which might be seen over Britain, as well as the less likely German types. The 3rd class list includes, of course, all the more important German types. It is reckoned that the total of British, American, German, Italian, Russian and Japanese types is at least 650.

The observer should now be in a position to learn to recognize at sight everything that he sees every day from his post and to notice and name new types whenever they appear. The assistance of an expert at this stage will be invaluable. The novice will discover quickly that in spite of near resemblances of many types, nearly every aeroplane has its peculiar 'sit' in the air. After a time it will often be the 'sit' that is recognized and not any particular feature, though an observer should never allow himself to take anything for granted in this respect. First sights are very often deceptive and there are too many "catches" in recognition for anyone ever to be certain of first impressions. The use of binoculars is often essential.

At this stage the observer must begin to seek practice. He must not only go on with the additional packs of silhouette cards, but he must study photographs and be shown films. A keen interest must be maintained amongst observers by the perusal of periodical literature dealing with aircraft, especially with new types coming into the service of the several countries. Interesting descriptions of aircraft, their performances, armament and functions will help to impress on their minds their salient features. Very often neither silhouettes nor photographs will be available of new enemy types. Odd bits of information about them may be picked up which, if remembered, may help an observer to recognize an aeroplane as soon as he sees it. He may know that it cannot be anything else.

#### Films Are Valuable

The use of films, with commentaries, may be a very valuable method of teaching the elements of recognition, and might, if there is the opportunity, form the ground-work of instruction. Their development in this country has been slow, but they take time and care to make and require the facilities to show, which may not exist in country districts.

Lastly, competitions of all sorts should be arranged with silhouettes, photographs, models, etc., and even with parts of silhouettes, such

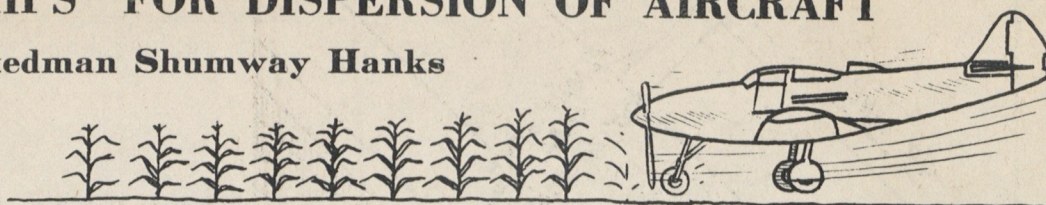
(Continued on Page 39)



Landing 'Em Important, Too

## "FLIGHT STRIPS" FOR DISPERSION OF AIRCRAFT

By Lieut. Col. Stedman Shumway Hanks



**A**N important contribution to National Defense can now be made by State and County highway departments in the construction of "Flight Strips" in highway rights-of-way or roadside development areas near main and secondary roads. Under sections 8, 9 and 14 of the Defense Highway Act of 1941, \$10,000,000 has been authorized at the present time from Federal funds for the construction of "Flight Strips."

The entire project is to be carried out in cooperation with the Army Air Forces and the Commissioner of Public Roads is authorized to make the necessary engineering surveys and plans, and also to enter into agreements with the various State highway departments to acquire such new or additional rights-of-way, or lands, which may be required.

### Primary Importance

In signing the Defense Highway Act, the President sent a letter to Congress in which he stated that the Secretaries of War and Navy regard the authorization for the construction of access roads to military and naval reservations and defense industry sites to be of primary importance and urgency.

"The Secretary of War also places in the same category the authorization for the construction of "Flight Strips" for the landing and take-off of aircraft. Under these authorizations, estimates of appropriations may be provided, in such amounts and for projects in such areas as will best meet our defense needs."

The accepted definition for a "Flight Strip" is "a landing area not less than 200 feet in width and not less than 1,800 feet in length (the area could be as large as 800 by 8000 feet) with clear approaches, located in a highway right-of-way or adjacent to a public highway, on public land, developed with State and/or County funds, including Federal aid."

### Idea A Sound One

In testimony before the Senate in connection with the Defense Highway Act, General Arnold stated that he felt the "Flight Strip" idea was

a sound one in that it was believed by using a minimum amount of money, by taking straight stretches of road pointing generally in the prevailing wind direction, that the Air Forces would be able to get landing areas with the least possible expense. He said they could also be used for parking of military convoys.

When General Brett appeared before the House Committee on Roads he stated that the Air Corps was primarily interested in "Flight Strips" from the standpoint of coordinating with the people who do the work in connection with the actual location of the "Flight Strips", as well as the actual specifications to be used, such as surface width, construction and length of the "Flight Strip" area.

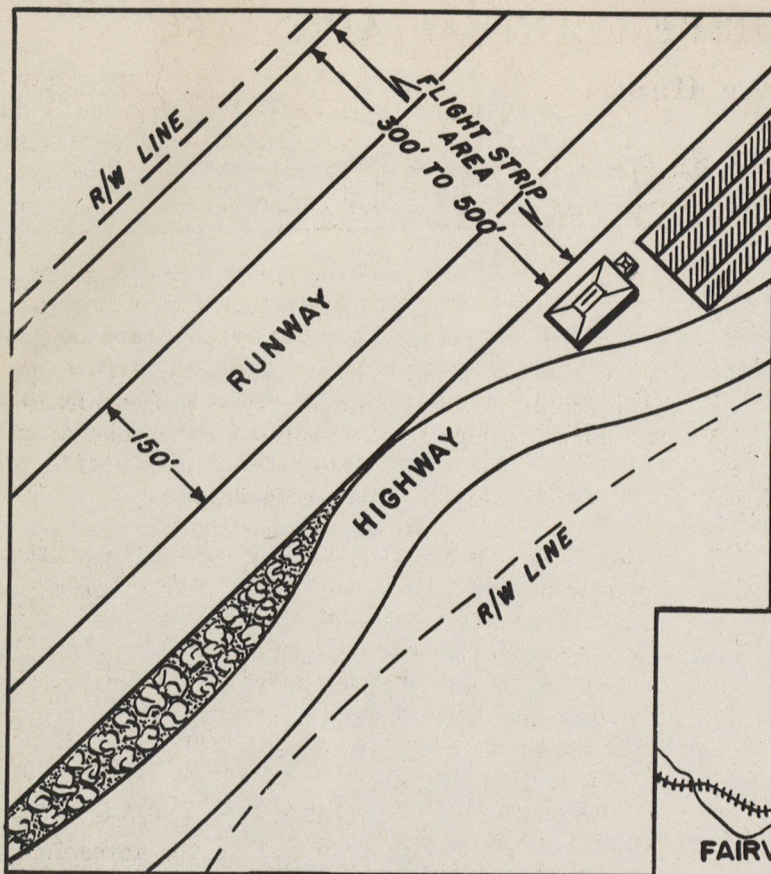
General Brett pointed out the extreme importance of the "Flight Strips" in the movement of large numbers of airplanes from one part of the country to another, and also as making it possible for the Air Forces to disperse their airplanes so as to prevent their loss on the ground in case of attack.

### Will Be Auxiliaries To Bases

Each Air Force commander will cooperate in the selection of "Flight Strip" areas, and the regional managers of the Civil Aeronautics Administration will be consulted regarding the general location of these areas in relation to other landing facilities. In general, military "Flight Strips" will be located within a radius of from 5 to 50 miles from air bases and will serve as auxiliaries to those bases.

In modern warfare air bases and airports are the first targets of bombing operations by enemy planes. For this reason it is better to avoid concentrations of bombers and fighting planes at the central air bases, and have them serviced and stored by squadrons scattered from the main base. Properly camouflaged "Flight Strips" provide a good part of the strategic answer to this problem. Using rubberized cement, such things as fences, stalks of corn, tobacco plants, brooks, trees, etc. can be outlined on the "Flight Strips", while the operation offices may easily be disguised as farm buildings.



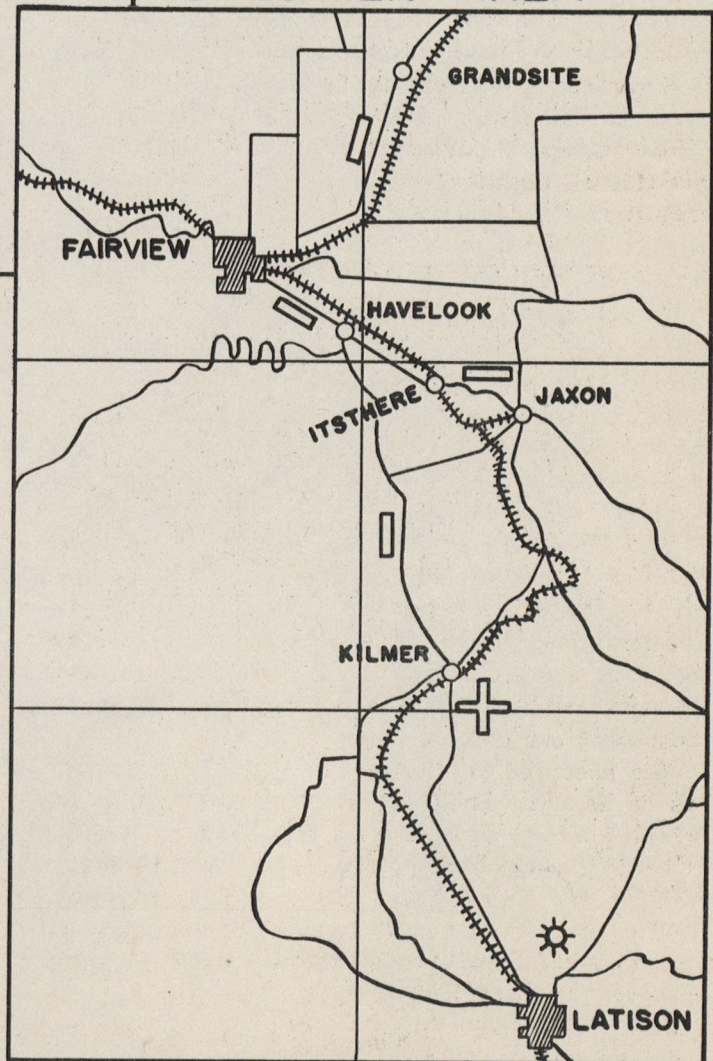


← DIAGRAM shows how "flight strip" can be laid out beside highway "right-of-way" line.

R/W INDICATES BOUNDARIES OF RIGHT-OF-WAY.

DRAWING of specimen area. This illustrates how flight strips should be located near airports and auxiliary landing fields. →

## SPECIMEN AREA



### SYMBOLS:



Auxiliary Field



Municipal Airport

Flight Strip Locations

Railroads

Roads and Highways



Complete servicing and repair facilities must necessarily be located at the main air base, but airplanes may be flown easily to the base for these overhauling operations from nearby "Flight Strip" areas and thus prevent a heavy concentration of planes at one point at any given time.

The question of maintenance is of great importance. All "Flight Strips" must be maintained by some responsible authority. If and when the Army should require these areas for their permanent operation, then the "Flight Strips" should be maintained by the military authorities.

#### First Thing Is To Build Them

On the other hand, if and when the civilian authorities are to use these "Flight Strip" areas, then the Federal Government, through Congress, may have to pass further legislation and appropriate funds for their maintenance, or the States affected may wish to do so.

The first thing is to get some actual "Flight Strips" built. When the Federal authorities realize how effective these areas are, the Federal Commissioner of Public Roads and the Chief of Army Air Forces will be in a position to know more about the provisions that will be necessary to take care of their maintenance, and appropriate recommendations can be made then.

When it is found that a hard surface is difficult to obtain without considerable expense, due to a lack of granular soil, etc., it may be necessary for the Army's aviation engineers to place portable airplane steel plate runway mats on the "Flight Strip" area. The cost of maintaining such a runway would be negligible and would probably be assumed by the Army Air Forces as long as these mats remain on the ground. These runway mat installations proved highly successful during the recent "Battle of the Carolinas".

Already many States have planned for the construction of "Flight Strips". Now that Federal legislation has been enacted and funds are available, speedy action may be expected in view of the recognition on the part of the President and highest military authorities of the primary importance of "Flight Strips".

Air Corps officers recently detailed as members of the General Staff Corps with troops were Lieut. Cols. Emil C. Kiel and Robert E. Douglass, Jr. Detailed as members of the War Department General Staff and assigned to the Office of the Chief of Staff in Washington were Majors Leonard H. Rodieck and George F. Schulgen.

## AIR SERVICE COMMAND

A new Air Service Command has been established to supply, maintain and store materiel and equipment and provide essential services for the Army Air Force. With headquarters at Dayton, Ohio, the new Command replaces the old Air Corps Maintenance Command.

Although the Maintenance Command operated as a part of the Materiel Division, the new Air Service Command will function as a separate organization. This change has been made because under the expanded Air Corps program the Materiel Division is concerned primarily with experimental work and the procurement of new aircraft.

#### General Miller Is Chief

Chief of the Air Service Command is Brig. General Henry J.F. Miller. His organization will be equal in importance to the Materiel Division, which operates directly under the Chief of the Air Corps, Major General George H. Brett.

Slogan of the command is "We Keep 'Em Flying". This is an accurate description of its duties, which are to keep every airplane of the Air Force ready to fly. Specifically the command is charged with supply, maintenance, warehousing and air transport between stations, and is responsible for the adequate stocking, proper cataloging and rapid distribution of supplies and equipment.

For the purpose of executing these functions the Command has divided the United States and its possessions into seven divisions, four in the United States and three in outlying territories. Mobile units will operate in these areas for the purpose of maintaining and supplying field operations. These regions were formerly served by the nine corps areas, but in July all service elements and functions were placed under the control of the Chief of the Air Corps.

#### \$2,500,000 Building

Now under construction on a government-owned tract of land located near Dayton, Ohio, is a \$2,500,000 building which will house the headquarters of the Air Service Command. It is expected that construction will be completed sometime in the spring.

In addition to the 800 civilians now employed by the command, approximately 2,400 will be added before staffing is complete. A large number of prospective employees are now in training at air depots for supervisory jobs.



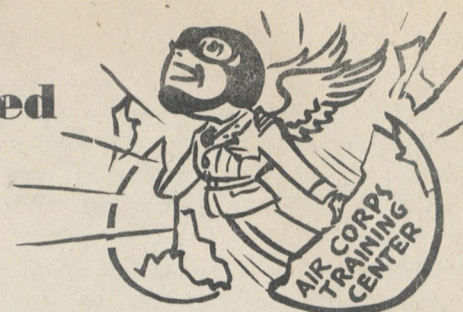


.. HERE are three aviation cadets on the way to their positions in a bomber. Together they constitute one of the many "Three Musketeer" combat teams of the Air Forces. Left to right, they are a navigator, a bombardier and a pilot.



# More Musketeers Combat Crew Eligibility Extended

By Oliver Townsend



THE "Three Musketeers" of the Air Forces—bombardiers, navigators and pilots—can now be recruited from an eligibility list increased to approximately 2,000,000 by the lowering of the age limit for aviation cadets to 18 years, the extension of eligibility to married men and the abolition of formal educational requirements.

Under the new rulings any male citizen of the United States between the ages of 18 to 26 inclusive, including Army enlisted personnel, may apply for training. If married, the applicant must furnish an affidavit that his wife and family have adequate independent means of support.

## Immediate Appointment

As part of the overall changes in Air Corps recruitment and training technique the procedure for enlistment has been changed so that appointment as an aviation cadet immediately follows enlistment. This has been made possible through the establishment of an increased number of Cadet Examining Boards in each of the nine Corps Areas.

Under the new procedure applicants apply directly to the nearest Cadet Examining Board, where they must present three letters of recommendation signed by citizens of established standing in the community, and a birth certificate or other documentary evidence of date of birth and proof of at least 10 years' citizenship.

At the local Cadet Examining Board the prospective cadet is given a preliminary physical examination (Type 63), and a mental "screening" test, designed to determine the applicant's fitness to pursue successfully Air Corps courses of instruction.

Physical requirements are similar to those of Reserve Officers called to active duty, except that the prospective flying officer must have "20/20 eyesight" and normal color perception. The "screening" test is designed to test the applicant's aptitude for Air Corps training, not his knowledge of certain academic fields. The "screening" test is a "multiple choice" type of examination, in which the examinee chooses the

correct answer from a list of five possible answers for each question. The Local Examining Board also holds formal proceedings to determine whether the applicant possesses the required moral and character qualifications.

If successful, the applicant is enlisted at once, appointed an aviation cadet, and sent immediately to one of the Three Air Corps Replacement Centers. There he is given additional tests to determine the type of training he is to receive, including a Type 64 physical examination for flying duty.

Depending upon the results of his aptitude tests at the Training Center, and provided he passes the physical examination for flight duty, he is assigned for aircrew training as either a bombardier, navigator or pilot. All aircrewmembers who successfully complete the Air Corps training program, which includes 10 weeks at a Replacement Center, 10 weeks at a primary training school, 10 weeks at a basic school, and 10 weeks at an advanced single or twin-engine school, will receive commissions as second lieutenants. In addition all aviation students who have applied for but not yet begun enlisted pilot training may apply for cadet status. During the training period aircrew cadets receive \$75.00 per month, plus \$1.00 per day subsistence. They also receive necessary clothing, equipment, medical care, and a \$10,000 life insurance policy during the period of training. On assignment to active duty they may continue the policy by paying the premiums. Upon graduation each cadet receives an initial uniform allowance of \$150 cash. On release from active duty in the Air Corps Reserve, he receives \$500 for each year of active service.

## May Be Ground Officers

New aviation cadets who fail to pass the advanced Type 64 physical examination at a replacement center are immediately considered for training as Air Forces ground officers.

Ground courses offered by the Air Forces and leading to commissions as second lieutenant are in the fields of armament, engineering, meteorology, communications and photography. Eligibility for armament training is extended to



civilians, aviation cadets, and to former aviation cadets now in civil life—preferably to those who have had training in engineering or physics. Aviation cadets and former cadets must be recommended by the commanding officer of the Air Corps training detachment for armament training for their mechanical aptitude, and may not have failed any ground school subject.

Candidates for engineering training must have completed at least three years of engineering studies at an accredited college or university. Communications training is open to aviation cadets who have completed either two full years of engineering studies or have had two years of college and hold an amateur radio license.

#### Many Ground Courses

Those eligible for meteorological training are college graduates who have specialized in science, engineering or similar technical subjects. They must have satisfactorily completed courses in mathematics, including differential and integral calculus, and physics, including heat and thermal dynamics.

Applications for photographic training are not being accepted at present, but when they are needed only applicants who have had at least three years of chemistry or geology in an accredited college will be accepted. Preferably, applicants should also have had some professional or considerable amateur experience.

In addition to the many courses leading to commissions open to aviation cadets, the Air Corps also offers many other technical and professional courses leading to non-commissioned officer appointments for new applicants and for aviation cadets who do not take flight training or a ground-officer's training course.

#### Generals Transferred

In connection with the revised and expanding Air Corps training and recruitment program three general officers of the Air Forces have been ordered transferred to new stations. These are Major General Barton K. Young, who has been assigned to the Office of the Chief of the Air Corps from the West Coast Training Center; Brig. Gen. George E. Stratemeyer, who has left the Office of the Chief of the Air Corps to go to the Southeast Air Corps Training Center as Commanding Officer; and Brig. Gen. Ralph P. Cousins, who has been relieved of duty as chief of the A-1 Division of the Air Staff and ordered to command the West Coast Air Corps Training Center.

## AUTOMATIC CLOUD COPS

THERE are no cloud cops at Randolph Field, but night flying traffic probably couldn't be controlled more efficiently even if there were—thanks to a cleverly devised system which enables instructors to maintain close watch from the ground over all students aloft.

Needless to say, safety is paramount. Each ship must have a definite place in the field pattern and each student must know where and when he is to make an approach for a practice landing. This problem of traffic control in night flying has become even more involved with the aviation cadet training program now nearing its peak.

By dividing areas on the east and west sides of the field into quarters, this system makes it possible for as many as sixteen planes to be in the air at once. It's accomplished by stacking two planes in each zone, of course, at different levels.

One flies at an altitude of from 1,000 to 1,500 feet, while the other circles at from 2,000 to 2,500 feet. White blinking ground lights spaced at five-mile intervals clearly define the boundaries of each quarter and eliminate the possibility of ships flying into zones other than their own.

Night flying is inserted into the cadet course beginning with the fourth week of the ten-week basic training program here, or after the embryo pilot has had approximately 25 hours of dual and solo daytime flying in his basic trainer. On his first night flight, the student is accompanied by the instructor until he has mastered the trick of after-dark landings. After that, which usually requires about 30 to 40 minutes of instruction, he's on his own.

Normal communication is by radio, but often light signals govern landings. Of these, there are two types—bar signals and circle lights atop a hangar, and the spotlight. The bar signals are used to indicate that the plane in a certain zone is to land. One bar of light indicates the first zone, two the second, and so on.

#### One Bar For First Zone

If it is desired to bring in the ship in the lower section of the first zone, one bar appears in bright red lights. The student in that zone flashes his landing lights to indicate he has received the signal. He drops down to 600 feet where he enters the traffic pattern and lands.

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## Ferry Command Routine

# The Cruise of the Arabian Night

By Lieut. Col. Caleb V. Haynes



EARLY in June I was ordered to Washington for sixty days duty with the Atlantic Division of the Air Corps Ferrying Command. After three months, in which I made North Atlantic Trips No. 1 and No. 4 to England, I was discussing my return to Puerto Rico with Colonel Robert Olds, Chief of the ACFC, when my phone rang. A trip to Africa and the Middle East was in the offing, to transport Maj. Gen. George C. Brett, Chief of the Air Corps, and staff on an inspection trip.

General Brett asked me to suggest an itinerary and smiled when I told him we might expect motor trouble in the vicinity of Borinquen Field, P.R. as this is my home station. A relay cutout did catch fire just out of Borinquen, and forced a lay-over of two days. At that point, the General said, "C.V., I knew we'd have a layover at Borinquen Field, but I didn't think you'd have to set the plane on fire to do it!"

### Picked Crew

However, I'm getting ahead of my story. I was very fortunate to secure a picked crew for our mission. Navigator was Major Curtis E. LeMay, copilot and assistant navigator Capt. Carlos J. Cochrane. Special credit is due to our enlisted men. M/Sgt. A. Cattarius, the air engineer; M/Sgt. B.R. Martin, assistant air engineer; M/Sgt. J.E. Sands, radio operator, and Mr. H. Parker, British assistant radio operator, performed all the functions usually performed by a combat crew of five men, plus all ground maintenance necessary on our trip. Ground maintenance for a ship of this type, the Consolidated B-24, normally takes twelve to eighteen men.

We left Bolling Field (at 9.18 A.M. EST) on August 31. After an uneventful trip we reached Miami at 1.20 P.M. that day. We were there joined by General Brett, his aide, Lieutenant Jack Berry; Colonel Ray Dunn, and Colonel H.B. Newman, of the Office of the Chief of the Air Corps, and Mr. H.C. Short of the Middletown Air Depot.

The following day we proceeded to Borinquen Field, P.R., where the relay cut-out fire mentioned above occurred and was repaired.

We left Puerto Rico (at 13.20 GMT,) reached

Port-of Spain, Trinidad, at 16.55 GMT, September 3.

### Gassing Done By Hand

Pan American Airways weather facilities, radio and maintenance were used from Trinidad to Belem, Brazil. Belem lacks hangars. Gassing was done by hand pumps from drums, and we took forty-five minutes to service. The same day (September 4th) we flew on to Natal, arriving there at 19.55 GMT.

We were greeted at Natal by Colonel White, the American Attache, who boasts a most unusual collection of tropical fish. One fish could swim as well backwards as forward. Due to a shortage of transient accommodations, our party spent the night in the Catholic hospital.

Our ship departed Natal at 00.28 GMT the night of the 6th. Although we had considered landing at Bathurst, Sierra Leone, decision was reached enroute to land at Free Town on the Gold Coast. Weather was poor on the West, Southwest Coast of Africa. We spent the night with the governor of the colony, continuing on to Takoradi on the seventh.

### Warned About "Gypsy Tummy"

On our arrival in Africa we were warned against a disease known as "Gypsy Tummy." A particularly painful and vicious form of stomach-ache, the only treatment seems to be doses of whisky and aspirin. Some times the aspirin is deleted from the prescription. Major LeMay was to suffer a very severe attack of it in Cairo. (He was advised to consult a certain Dr. Hamilton, who is conceded the East's leading authority on this malady, but on further inquiry learned that the good doctor himself was in bed with "Gypsy Tummy"!)

With permission of the Liberian government we flew over Liberia enroute to Takoradi. We remained over night at Takoradi.

In order to avoid passing over Vichy-French territory, we flew to Kano via Lagos. An exotic village where the jungle meets the desert, Kano is the junction of a railhead and several important caravan routes. There are no hotels, and



most of the buildings are conical mud huts. The town is very old. It has some remarkable primitive dye works which are still in operation. These are mentioned in the Bible. Here our party bought a supply of fine leather goods, learned the art of African bargaining—never pay more than one-fourth the first price asked by the seller.

#### Natives Curious

The native chief and some two hundred villagers were out to see our plane land. Their presence proved fortunate, as our wheels broke through the runway. At a signal from the chief, the natives started to push us off. At first all pushed in different directions, but they were finally straightened out, and to the thump of tom toms rolled us to firmer ground. We deflated our tires to 45 pounds and had no further trouble of this kind.

The face of the engineering officer at El Fasher dropped when we mentioned our gas requirements. He had what we needed, he hastened to explain, but almost every gallon was brought 425 miles in small drums on truck or camel. El Fasher also is a caravan center whose markets offer elephant tusks and strange animal hides. Giraffes and other big game are plentiful. It was near this point that General Brett carefully photographed a herd of "gazelles", only to learn on developing his negative that the gazelles were the common garden variety of goats.

Colonel Perrin asked permission to join our party at El Fasher, but Colonel Dunn protested vigorously. I wondered why, until I realized that Perrin would make the thirteenth passenger. Fortunately a British official also wished to go to Cairo. His presence made fourteen instead of thirteen and Colonel Dunn was happy.

The governor, who had entertained us hospitably, urged us not to fly to Cairo direct, as a forced landing in the Sahara desert would be most dangerous. Accordingly we took off on the morning of the tenth in the direction he advised.

#### Use Secret "Corridor"

Flying over the ruins of the Nile valley, we approached Cairo along the secret "corridor" which must be used by all friendly aircraft in that area, giving the signal of the day when required. In Cairo we were met at the airport by Mr. Kirk, American Minister; Colonel Burwell, Lieutenant Atkins, Major Nick Craw and several British officials. Major Craw has had many exciting experiences including Greece, Crete and

so forth. He was a prisoner for several days on one occasion.

On our third day in Cairo we were advised by British Intelligence of an expected air raid and advised to move our ship. However, we felt that with its conspicuous markings the B-24 was safer in the hangar. The raid came off on schedule, and thirty-nine people were killed, some ninety injured.

While in Egypt we had an opportunity to visit several advanced British outpost air units in North Africa. Most of the men are Colonial troops: Australians, New Zealanders, South Africans. Their morale appears high and they are doing a wonderful job in face of almost incredible hardships.

#### Dust Worse Than Heat

Dust is more of a problem than heat, yet mechanized equipment appears to function in spite of it. I talked with several British officers who were enthusiastic about the quality of such American equipment as they had received.

On September 23 several members of our party, accompanied by British Air Marshall Dawson, flew to Basra, Iraq. On the way we were requested to fly low and give the signal of the day at several desert outposts. Bagdad has a fairly well-developed airport which still bore some scars of a recent Iraq uprising. Basra, at the head of the Persian Gulf, was the most easterly point of our travels.

After a night spent in Habbaynia, Iraq, we returned on the morning of the twenty-fourth to Lydda, Palestine. Weather facilities and maintenance appear excellent through the part of the Middle East covered. Following a day of sight-seeing the party, with the addition of Wing Commander Brown, who had entertained us royally in Jerusalem, departed for Cairo. Commander Brown flew the "Arabian Knight" (as we had unofficially dubbed her) about a hundred miles and expressed himself well pleased with her performance. In Iraq we had been promised the chance to fly a captured German ME-110, but were told it was out of commission when we accepted the offer. We reached Cairo on the twenty-fifth.

General Brett and Lieutenant Berry left us at Cairo. They were replaced on the return trip by Colonel Burwell and Wing Commander Harris, whose brother is at present stationed in Washington.

#### Food Plentiful

Food is quite plentiful in Egypt, but far more expensive than it is in London. Accommodations,

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## New Army Record

# 180 Miles Without a Motor

By Lieut. Claude L. Luke

*Several months ago Lieutenant Luke established a distance record for Army glider pilots when he flew a soaring plane from the Army Glider School at Elmira, N.Y., approximately 180 miles to a farmer's field near Fort Dix, N.J. Recently he told the story of the flight to Corporal George Eckels, editor of the Middletown Air Depot publication, "Wings Over Olmstead."*

*Last November Lieutenant Luke was killed in the crash of an Army Air Forces glider at Patterson Field, Ohio. His was the first fatal glider accident to be recorded since The Army Air Forces began its experimental program in the use of powerless aircraft for military operation.*

IT was clear and bright the morning of the flight. The United States Weather Bureau's meteorologist, Barney Wiggins, attached to the Army School at Elmira, forecast that this would be an excellent day to soar cross-country.

My plane was a Wolfe, produced in Germany by Wolfe-Hirth. It has a wingspread of fifty-two feet and weighs about three hundred pounds. In soaring circles the Wolfe has a good name for speed and lightness. It has very sensitive controls and heel-action pedals. Most United States gliding airmen are familiar with toe-action. Flying the Wolfe must be very like flying one of the earliest type motor-driven ships. It is unstable and requires constant attention to keep it in flying position.

I had been away from the Army School at Elmira for about forty-five days. Having flown nothing but transports during this interval, I admit that I felt no little trepidation in preparing to fly cross-country in a plane I still found somewhat foreign and unfamiliar.

But the officials smoked a barograph and after checking it installed it in the Wolfe. They handed me a chocolate bar and a wide necked bottle filled with orange juice. It was 10.30 A.M. I was towed off Harris Hill and as the tow line reeled out to the end I reached an altitude of some six hundred feet. For a while I soared up and down the slope in front of a thirty-five



Lieut. Claude L. Luke

mile wind blowing out of the north. I nosed around for some thermals. I found one or two but my turns in a plane so strange to me caused much grief. Each one felt like an incipient spin. (Some of you may wonder what a 'thermal' is. A thermal is a mass of moisture-laden air that rises from spots on the ground heated by the sun, until it reaches the inversion point - or where cold air turns the thermal into a cloud. The logical indication of a thermal is a cloud, although not always. When clouds build up over a widespread area, 'lift' results.)

Other gliders had taken off, some before and some after me. They all seemed to climb much higher than I could. For about ninety minutes I slope-soared over Harris Hill. Time after time, the Wolfe's nose nuzzled the warmth of a goodly thermal. I would rise several thousand feet. Each time I believed there were not enough thermals to permit me to leave the air over Harris Hill. And each time I came back to slope-soar and wait. I was intent on staying up five hours at least, to qualify for the Silver-C award, granted by the Federation Aeronautique Internationale. (Other requirements: Altitude, 3000 feet; distance, 30 miles.) I hoped I could meet some of these qualifications by slope-soaring alone.



From time to time I headed back to the field after riding thermals to several thousand feet and had several very close calls. About noon-time I hooked on to a strong thermal that shot me upward to four thousand feet in two and a half minutes. This was encouraging. For the first time I believed I really had a good chance to take off cross-country. Overhead the sky had begun to form into small cottony cumulus clouds. I found enough lift, hopping from cloud to cloud, to gain altitude little by little. Circling to stay in the area of lift I began to drift down wind. In the next five minutes I would have to decide whether to shove-off, or go back to Harris Hill. The wind decided for me. I was too far to "get in" to Harris Hill. So I was on the way!

The simplest way to fly cross-country in a glider is to go down wind. You must circle to hold altitude because the cross-section of a thermal is very small. Sometimes they are only "bubbles." These drift with the wind. If your objective lies down wind, that much distance is gained. In other words, it is logical that a cross-country gliding flight is no more than a series of spirals, while flying with the wind.

#### Senses Chance At Record

When I left Elmira I chose Middletown Air Depot as a tentative goal. It was almost due south. I would have liked to land there at my home station. But the wind was coming out of the northwest now - it must have been one o'clock - and progress was so rapid that I felt I had an outside chance to establish some kind of record if I continued on a straight down wind course. The upper Susquehanna river was my compass.

Northwest of Scranton I was down to 2000 feet and losing altitude rapidly. There was a range of mountains to cross if I were to go on. I circled to gain altitude. A thermal picked me up under a cloud and soon I was half across the mountain ridge. I had to go on. In this region I put to practical use a bit of information given us by instructors at Elmira. I watched hawks wheeling over the mountain tops and crowded one of them out of his own thermal. I gained altitude on hawk-course just south of Scranton's excellent airport.

There are many mountains between Scranton and Allentown. Scranton looked tempting. Besides, I was hungry! To go up or come down, that was the question. But clouds, gleaming in bright sunlight, were favorable to staying up. Lift was good up to the inversion point at the base

of the clouds - almost constant at 8000 feet - but no higher.

#### Upward 500 Feet Per Minute

Many times during the flight I got down to one thousand feet or even less and picked out tentative landing fields to come in on if the sky gave out on thermals. But again and again I found one of these up-currents to ride. They were well-defined, if not numerous. When I did find one my rate of ascent was well in excess of five hundred feet per minute. Visibility was excellent. I had no compass and was sitting on my map. I had to depend on memory for local geography. With relief I found towns turned out to be what I had guessed they were.

After crossing another range of mountains north of Allentown, where I found no emergency fields within range of my gliding angle, I got hungry again. Now for that chocolate bar, I thought! But my heavy winter flight jacket pressed too snugly against the sides of the cockpit and I couldn't reach the candy - or the map I was sitting on, when I wanted it badly. Another handicap was the hood that fitted over my head like a cowl. I must have looked like a turtle, sitting up there in the cockpit with only my head showing! While juggling for the chocolate bar I dropped a thousand feet of precious altitude and actually dragged out by my shoe tops.

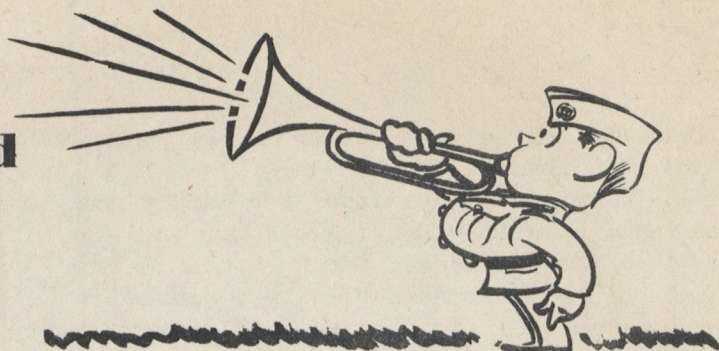
Somehow I arrived over Allentown, down very low. I looked overside for a spot to land on. There were the fairgrounds enclosed in a race-track and packed with people! I circled the field several times. Surprised fairgoers looked upward and began to clear the field. I saw a plane on the grounds. I suppose the pilot gave the sign to clear the field.

Suddenly my variometer indicated a thermal and I soared upward again, almost a mile. I could come in at Allentown airport now if I wanted. I was hungry enough to want to. But warm air from the city held me comfortably aloft. Far off I could see the gap where the Musconetcong river cuts through the hills to reach the Delaware. I saw smoke rising from a factory stack and headed off to ascend its artificial thermal before wind dispersed it. But I came too late. Still, I got on another hawk's beam. But this time I didn't crowd him and we shared the useful warmth of his thermal! Round and round we soared, up to eight thousand feet - enough to cross the mountains. Trenton, New Jersey was in sight!

(Continued on Page 40)



## Important Changes Made Air Corps Reorganized



IN a sweeping reorganization, the old division breakdown of the Office of the Chief of the Air Corps has been revised and a new organization under a series of "assistants to the chief" has been set up.

The reorganization was made in order to meet the demands of full-scale aerial combat called for by the President in his war message to Congress. The biggest step in the adjustment of the internal organization of the Air Forces since their creation as a semi-autonomous part of the War Department last June, the new plan provides for closer coordination of effort both within the Office of the Chief of the Air Corps, and with the Headquarters Army Air Forces and Air Combat Forces.

### Will Speed Up Procurement

Instituted soon after the appointment of Major General Walter R. Weaver as Acting Chief of the Air Corps, the reorganization for the first time gives the Air Corps an Adjutant General, Judge Advocate General and a Fiscal Officer. These and the other changes are expected to speed up the procurement of equipment, the training of personnel and the delivery and maintenance of combat aircraft in theaters of operation—the primary functions of the Air Corps in its place in the Air Forces.

Serving directly under the Chief of the Air Corps under the new organization is an Executive Assistant. The Adjutant General performs the normal duties of such an officer, the Judge Advocate General performs those functions formerly charged to the Chief of the Legal Division, and the Fiscal Officer performs those duties formerly charged to the Chief of the Fiscal Unit.

Another newly created office is that of the Inspector General, who performs those functions formerly charged to the Chief of the Inspection Division.

The series of assistants to the Chief of the Air Corps provided for in the new organization includes an Assistant for Procurement Services, an Assistant for Supply and Maintenance Services, an Assistant for Personnel and Training Services, an Assistant for Ferrying Service,

and an Assistant for Army Air Traffic Services.

The Assistant for Procurement Services replaces and performs the duties formerly charged to the Chief of the Materiel Division. The Assistant for Supply and Maintenance Services replaces and performs the duties formerly charged to the Commanding General of the Air Service Command, the Chief of the Building and Ground Division, and the Chief of the Ammunition Unit and the Airplane Unit of the Operations Division.

The Assistant for Personnel and Training Services replaces and performs the functions formerly charged to the Military Personnel Division, the Civilian Personnel Division, Training Division, the Intelligence School Section, and the Medical Division—less those functions transferred to the Air Staff. The Assistant for Ferrying Services replaces and handles the functions formerly charged to the Commanding Officer of the Air Corps Ferrying Command.

### Intelligence Remains

The Assistant for Army Air Traffic Services will take care of the Administrative Regulations of Army Flying, the operation of the Army Airways Communication Service, the Weather Service, Bolling Field, the duties now charged to the Map Section of the Intelligence Division, the functions of the old Operations Division, and the allocation of aircraft to activities and agencies under the control of the Chief of the Aircraft.

Under the new organization the Intelligence Division will be continued for as long a time as is necessary, until the absorption of its activities is accomplished by other agencies.

Executive Assistant to General Weaver, under the reorganization, is Lt. Col. L.S. Smith; Assistant Executive for Administrative Planning and Coordination is Lt. Col. Byron E. Gates; Assistant Executive for Technical Planning and Coordination is Lt. Col. James G. Taylor; the Air Corps Adjutant General is Col. William F. Pearson; the Judge Advocate General is Lt. Col. E. H. Snodgrass; the Fiscal Officer is Lt. Col. A.W. Martenstein, and the Inspector General is Lt. Col. G.H. Beverley.



Brig. Gen. Oliver P. Echols is the new Assistant for Procurement Services, Brig. Gen. Henry J.F. Miller is the Assistant for Supply and Maintenance Services, Brig. Gen. Robert Olds is the Assistant for Ferrying Services, Col. Walter F. Kraus is the Assistant for Personnel and Training Services, and Col. Oliver S. Ferson is the Assistant for Air Traffic Services.

Lt. Col. J.G. Taylor remains as Chief of the Air Corps Intelligence Division.

## FLIGHT REQUIREMENTS

**M**AINTENANCE of piloting skill will be given first consideration among the duties assigned to personnel holding flying ratings, according to a new Army Air Forces Regulation listing the minimum annual flight requirements for Air Corps pilots.

Under the new Regulation commanding officers are directly charged with the responsibility for seeing that regular and frequent flights are made by all personnel holding flying ratings, and by all non-rated officers placed on flying status by the Chief of the Air Corps.

Commanding officers are further held responsible for assurance that pilots are thoroughly qualified to "pilot", and that they have sufficiently demonstrated familiarity with the various aircraft types before they are permitted to fly them.

### Flight Requirements

The minimum annual flight requirements which must be met by all personnel holding flying ratings, and by all non-rated officers on flying status, are as follows:

1. One hundred hours of flying time. Not less than 40 of these hours must be accomplished during each six months' period of the fiscal year.
2. Ten hours of night flying. Not less than four of these hours must be obtained in each half of the fiscal year.
3. Twenty hours of instrument flying. Not less than eight of these must be accomplished during either six months' period.
4. Two instrument tests. Pilots of limited status whose limitations do not prohibit instrument flying must meet these instrument tests as "pilots". At least one of the tests is performed in an airplane if possible. Rated pilots assigned to duties involving piloting who pass this test are furnished a certificate showing they have qualified as instrument pilots. This applies alike to Regular Army, Reserve and National Guard officers.

Officers and men rated as pilots but not technically qualified to fly the planes with which their units are equipped, due to lack of flying hours, are given credit for co-pilot time in meeting the annual flight requirements.

Other rulings instituted by the new regulation are that personnel placed on a limited flying status must meet all requirements in conformity with their duties, ratings and limitations; and that non-rated officers on flying status must meet requirements similar to those of "unlimited" pilots.

It was also provided that personnel on flying status for only part of a fiscal year must meet a proportional amount of the requirements.



## CLOUD COPS... (Continued From Page 22)

The circle lights atop the hangars are used in conjunction with the bar signals to bring in the upper zone planes. After the plane in the lower zone has landed, a combination of one red bar and a green circle is the signal for the plane in the upper section of Zone 1 to drop down into the lower zone and make his landing approach. Planes in other quarters are handled in similar manner, the number of bar lights indicating the zone.

Spotlights are used as an auxiliary to the regular bar light control, but take precedence when used. They are used in three colors—green to indicate that the plane is cleared for take-off or landing, red to warn that something is wrong and that the pilot about to land should return to his zone, and white for identifying ship numbers, to assist the pilot in parking. When flashed intermittently, it's a signal to taxi into the line.

The student is drilled in three phases of night landing. First he must set his plane down with all the field's floodlights on, then with only his ship's landing lights and the boundary markers of the field. Third phase is on a small runway outlined only by small beams of light shining parallel to the thus improvised runway and visible only from a point directly opposite the entrance to the runway area.

This last phase of training needs a portable lighting system and generator recently invented and developed at Wright Field, Ohio, which can be set up and in operation in from 30 to 40 minutes and enables the operators to transform into an airdrome what a few moments before had been a cow-pasture. Thus are simulated actual conditions encountered by pilots engaged in tactical problems.



## Yanks in the R. A. F.

# Airacobras Strike for Britain



A Squadron Leader who won the Distinguished Flying Cross in the Battle of Britain and has had eight confirmed victories over enemy aircraft, now commands a famous fighter squadron which has recently been equipped with the Bell Airacobra fighter aircraft. He is very proud of the distinction, and so are his pilots; they include men from all parts of Great Britain, from three of the great Dominions, several Czechs, and recently there was also a Singalese pilot. To a representative of *Flight* the Squadron Leader explained that the Airacobra is in some ways the most modern aircraft in the world, at any rate the most modern fighter. It is a specially designed machine, full of new ideas. Its outstanding features are the position of the liquid-cooled Allison engine (of 1,150 h.p.) behind the pilot, with shaft drive to a tractor airscrew in the nose, and a nose-wheel undercarriage.

### Pilot's Back Is Safe

Naturally, two questions which the Squadron Leader was asked were whether the nose-wheel stood up well to rough landings, and whether the engine showed any tendency to move forward into the small of the pilot's back. To both he was able to give satisfactory answers.

The Airacobra was designed to work off runways, and the aerodrome where his squadron is stationed is far from resembling a croquet lawn, but all the same the nose-wheel has stood up well. It ought to do so, for its strut looks very solid, not to say heavy; and, as a matter of fact, the machine altogether is heavier than British standard single-seater fighters. The squadron has had one breakage of this member from an unusually heavy landing at night, and three other cases of damage, which were not serious.

There have been no serious accidents, but in some landings which might have been better the engine did not move from its bed, and showed no sort of inclination to do so. The squadron feels no anxiety on that point.

### No Trouble From Engine

As for maintenance of the engine, it was treated with the same care as the Merlins in

British fighters, and the squadron did not know what its flying life would be before it had to be taken out for a major overhaul. Up to the present it has given no trouble.

Few facts can be stated about the performance of the Airacobra, but in the U.S.A. it has been published that the top speed is in the neighbourhood of 400 m.p.h. The pilots say that air combats now are decided by speed and fire power. The Airacobra certainly has the first, and it excels at its own favourite height. Its armament likewise is formidable. Several versions are possible. The machines of this squadron have one 20-mm. cannon firing through the airscrew hub, two machine guns in the nose which fire through the arc of the airscrew, and four machine guns in the wings. The amount of ammunition carried is impressive, and no doubt the enemy would like very much to know the precise figures.

The Airacobra as built for the R.A.F. is in some particulars different from the form in which it is used in the United States. Our men, too, after receiving their machines, have themselves introduced some modifications. These will be notified to the manufacturer and will be incorporated in future deliveries.

### Spares A Little Late

It was mentioned also by the squadron that all the spares did not arrive with the machines, and this was a bit of a nuisance. But R.A.F. aircraftmen are ingenious, and the machines have not been kept aground by the non-arrival of the spares. The squadron presumes that the said spares had been dispatched, but had gone astray somewhere on the way. We may recall that something of the same sort happened in the case of machines delivered to the Russians, who had to manufacture the necessary tools before they could erect the aircraft. But things will sometimes go astray in time of war, and it is not suggested that the Americans were careless in the matter. Everyone knows how anxious they are to help the Allies.

One very good point about the Airacobra is the splendid view which the pilot gets behind him by simply turning his head. It is a very important



matter in a dogfight, and this American machine is about the best of the lot in that respect. The entrance to the pilot's cockpit is through a side door, not through the opening at the top. In fact, the top of the transparent cover does not open, and this means that very tall pilots can hardly be comfortable inside.

#### Short Pilots Best

It is preferable to pick pilots of not over 5 ft. 10 in. The Americans also suggested putting a limit on the weight of the pilot, but so far this squadron has not found it necessary to stick to the limit which the designers suggested. When a pilot has to do a "brolley hop" (it has not yet been necessary) there is a quick release of a door in the side, and the pilot rolls out on to the wing, and then off that into open air. That obviates the manoeuvres which are found advisable when a man has to quit a Hurricane or Spitfire.

Of the flying qualities of the Airacobra nothing but high praise was heard from the pilots, even though some of them who had been before in Hurricane squadrons had got so attached to their old machines, as pilots will, that they felt rather homesick for them.

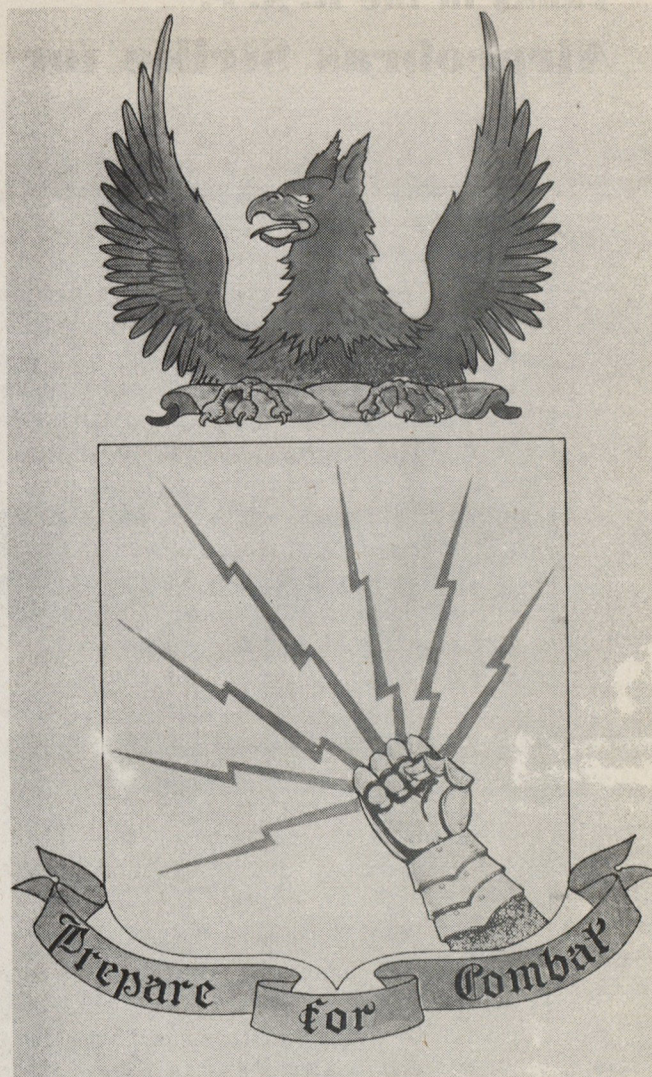
*Condensed From FLIGHT*

Eleven-year-olds may still be a little young for enlistment as aviation cadets, even under the newly lowered age limits, but that didn't stop Thaddeus Schultz of Manoa, Pa., from applying. Thaddeus wrote the 33rd Pursuit Group at Philadelphia and said: "I would like to join the Army Air Corp. My father was a fighter in a boxing ring and I would like to be in the Air Corp. I am 11 years of age and in good health. P.S.—I am a Polish decente not a German decente."

Thaddeus was told the Air Corps appreciated his "fine spirit and willingness to serve", but that he'd have to wait a few years, under present regulations, before he could take flight training.

There is quite a sprinkling of so called "G-Men" and "Bobbies," the British equivalent of American policemen, "Cops," "Flat Feet," or what have you, among the Britishers undergoing flying training at the Southeast Air Corps Training Center. The majority of 66 former representatives of the law are patrolmen, the remainder being ex-detectives and special investigators who were associated with Scotland Yard.

## NEW S. E. T. C. INSIGNIA



THIS is the new official insignia of the Southeast Air Corps Training Center. The image on the crest is that of a Griffin, mythological half-lion, half-eagle which could never be taken by an enemy. The clenched fist directly below stands for defensive action, and the seven shafts of lightning symbolize the seven phases of instruction—elementary, basic, advanced, bombardiering, navigation and gunnery—which prepare cadets for aerial combat. The background of the shield is azure, and represents the clear skies of the States included in the Southeast Training Center.

Approximately 10,000 persons were present at the dedication recently of Gardner Field in Taft, Kern County, Calif., one of the four basic flying schools in the West Coast Air Corps Training Center.



## New Combat Teams

# Support Commands Provide Lightning Punch

By Col. William E. Lynd



AIR support aviation has been developed to provide ground forces with the close air support essential to their success in combat.

All designated air support units are contained in the Air Force Combat Command. A staff section exists in headquarters of this command, with an Air Support Officer as chief. As the functioning of air support aviation is in close conjunction with the operations of ground forces, the Air Support Section has been located at the Army War College, the location of the General Headquarters of the Army.

Five Air Support Commands are organized, one within each numbered Air Force and the fifth directly under the Combat Command to work with the Armored Force.

### Works With Ground Forces

The function of Air Support Commands is to handle all types of aviation working in direct connection with and support of ground forces. This type of aviation includes light and dive bombardment, observation, photographic, and other elements such as tow target, and transports for air-borne and parachute troops.

Before the war there were eleven observation groups, including forty observation squadrons. Additional group headquarters and observation squadrons are now being authorized by the War Department. There is now one photographic group of four squadrons with new authorization for still more. Observation organization is designed to provide a group for each corps, containing one squadron to support each division, and one for corps use. In addition to corps groups, one observation group is being provided for the support of each army.

One of the major changes being made in observation aviation is the utilization of two-engine bombardment and pursuit type planes for assignment to observation squadrons. The war has proven rather conclusively that the medium speed ordinary two-engine observation airplane cannot live in modern combat. The old theory of continuous observation or surveillance of an enemy area can no longer be employed. Observation beyond the enemy lines will now consist principally of going in to observe a particular point

or some particular activity and returning as soon as that information is obtained. Either speed or defensive fire power or both must be depended upon to obtain this information. The information or verification ordinarily will be secured by photography. A considerable number of the light type un-armed liaison planes is also being provided to observation units for courier and messenger service.

### Provides Close Support

One of the principal functions of Air Support Commands is to provide both close and direct combat air support. Combat support is provided by light and dive bombardment. Light bombardment groups of four squadrons each with one additional squadron, are now included in the five Air Support Commands. It is hoped to provide light bombardment for air support in the ratio of two squadrons per each Armored Division, and one squadron per each infantry and motorized division. The present light bombardment airplane is the A-20-A fast two-engine horizontal bomber. Dive bombers now being used are the A-24 type, the same as the SBD-3 in use by the Navy. Much attention has been paid to the tactics and technique of combat air support of ground troops. Several exercises and maneuvers have been held in this connection, particularly with armored forces.

Signal communication plays an important role in air support, as ground organizations must be able to contact their supporting air unit and ask for the destruction of a certain objective or for the reconnaissance of an area. The commander of the air organization must then be able to contact his various squadrons either on the ground or in the air. For this purpose, Signal Companies Aviation are included in the Air Support Commands.

In order to furnish aviation for the towing of targets for antiaircraft artillery fire, tow target detachments are included in the Air Support Commands. These detachments are to be equipped with airplanes and equipment for towing and tracking missions to assist the antiaircraft artillery in their training.



Transport aviation for the movement and conveying of both parachute and air-borne troops will be provided by Air Support Commands. One transport squadron was utilized for this purpose in the Louisiana maneuvers and a transport group of three squadrons was used during the Carolina maneuvers.

#### Practice At Maneuvers

The Air Support Commands of the different Air Forces support and assist in the routine training of the army with which the Air Force is associated. Air Support Commands as such have participated in maneuvers only during the GHQ control portion of the Carolina maneuvers. All aviation operating during this phase of the Carolina maneuvers was included in the First and Third Air Support Commands supporting the First Army and Fourth Corps respectively. The results obtained from this first maneuver employment of Air Support Commands were very gratifying. It developed the conclusion, as expressed by several high commanders, that the air support organization is sound and logical. Of course there are many details yet left to be worked out and adjustments made, but the fact that air support as now organized is functioning along correct lines, augurs well for the future development of aviation support of ground forces.

## News Letter Changes

**N**O AIR FORCES NEWS LETTER was issued for the month of December or January because of the extra pressure of work placed on the Headquarters Army Air Forces by the war.

Conditions have so been adjusted however, that it is expected publication on a regular monthly schedule can now be resumed. In the future the NEWS LETTER will be published on or about the first of each month so long as publication does not interfere with necessary war business.

A number of changes have been made recently in the instructions covering the preparation of material for the NEWS LETTER and in the method of distribution of the publication. Potential contributors and officers assigned as local NEWS LETTER correspondents should familiarize themselves with these changes, which are outlined in detail in Army Air Force Bulletin No. 41-8; Army Air Force Regulation No. 5-6 and Army Air Force Policy No. 5-1.

Distribution of the NEWS LETTER no longer is on a personal basis. With the exception of a few general officers, active and retired, no individuals receive the publication as individu-

als. Distribution to the field is on the same basis as Army Air Forces regulations, except that Wright Field, like Washington, receives one copy "for each headquarters or division and one additional copy for every four officers and key civilian personnel assigned thereto." Requests from individuals to be placed on the mailing list cannot be granted.

#### Personal Items Not Wanted

The bulletin outlining the type of material desired and the method of preparation states specifically that "personal items are no longer wanted" and that public relations officers and other contributors "should not send information on such matters as squadron picnics, dances, the promotion of enlisted men (unless the circumstances were unusual) or of officers, descriptions of athletic events, etc." It says further that news releases ARE NOT SUITABLE as a substitute for material prepared especially for the NEWS LETTER.

The bulletin states that material considered appropriate for publication includes stories on technical developments in the Materiel Division, changes of policy with respect to aviation, descriptions or discussions of new airplanes, outstanding flight achievements, articles discussing in detail innovations of military technique worked out by Army Air Forces personnel, and detailed accounts of maneuvers, including descriptions of the problems encountered and how they are solved.

Contributors may save themselves and the personnel in charge of the NEWS LETTER a great deal of trouble by reading the bulletin, policy and regulation governing publication of the NEWS LETTER before sending material to Washington. Articles of the sort carried in the current issue are wanted. Provided he knows what he is talking about, the author may be of any rank or from any organization.

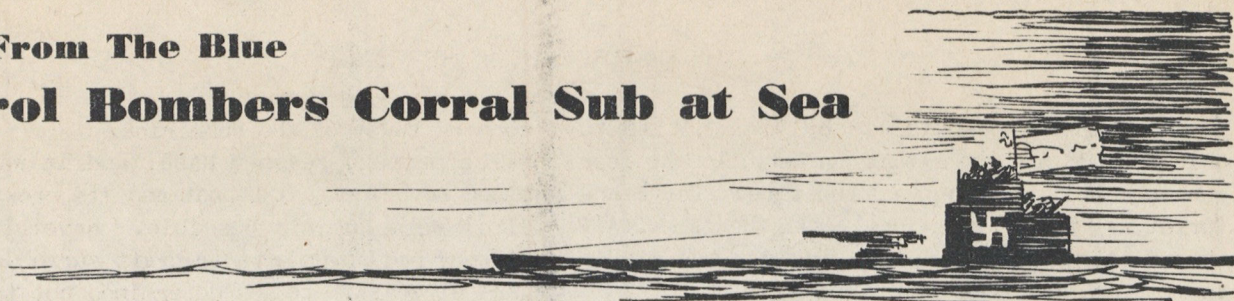
With the establishment of sub-depots in Merced and Lemoore, Calif., a total of eight subsidiary depots of the Sacramento Air Depot have been established during the past year in California and Nevada.

Training aviation cadets in night cross-country and formation flying is an experiment started at Goodfellow Field, San Angelo, Texas. Heretofore such training was conducted only at advanced flying schools. If successful, it is possible that this type of flying will be inaugurated at the various other basic flying schools.



## Bolt From The Blue

# Patrol Bombers Corral Sub at Sea



**A**N aircraft of the R.A.F. Coastal Command has captured a German U-boat—the first time a land aeroplane has forced a submarine to surrender outright.

They fought out one of the strangest duels in history, with one adversary in the sky, the other beneath the sea. The sky won. After the aircraft, a Lockheed Hudson bomber, had attacked the U-boat the crew of the submarine came tumbling out of their conning tower, waving a white shirt as token of surrender.

The Hudson, completely unaided, held the U-boat prisoner for nearly four hours. A Catalina flying-boat of the Coastal Command then arrived, to relieve the Hudson. The Catalina acted as gaoler, assisted by other Hudsons and Catalinas of the Coastal Command, for nearly ten hours more.

### Ship Takes Over

One of His Majesty's ships was able to arrive, just as daylight was fading, to take over from the aircraft. By then the U-boat had been held prisoner from the air, without any actual contact except the threat of machine-guns, for nearly thirteen hours.

The Hudson took off early in the morning, and headed out over the Atlantic. Visibility was poor, frequent rainstorms swept across the sea. The water below was angry and rough, covered with white caps.

They were "toddl[ing] along with George (the automatic pilot) doing most of the work," when suddenly there was a shout from the navigator's cabin in the nose of the aircraft.

"There's one just in front of you," shouted the navigator. The pilot gazed out where the navigator was pointing, at the same time pulling out the automatic pilot and taking control. There, about 1,200 yards away on the port bow, was a U-boat.

### Navigator Watches

The pilot thrust the nose of the aircraft down, and dived. The navigator stood with his face pressed to the cockpit window, keeping the submarine in sight.

"Let me know when its time to drop, Jack," called the pilot quickly.

The navigator nodded, and a few seconds later yelled "Now!"

The rear gunner, who had been hastily winding in the aerial, popped his head into the astro-dome just in time to see a column of water shooting high into the air.

Then the pilot turned the Hudson steeply, and climbed. Below him he could see the wide area of churned waves. As he watched there was another shout from everybody in the aircraft. The U-boat had come to the surface. The gunner, who had rushed into the rear-turret, had the best view. He saw the U-boat surface rapidly, on an almost even keel. She came surging up through a mass of foaming water.

The navigator reached for his camera and called to the rest of the crew.

"Machine-gun them, let's machine-gun them."

The wireless operator dropped to the floor and rapidly wound down the belly-gun. Then the aircraft dived across the U-boat, all guns blazing tracer bullets—front guns, rear-turret and belly-gun.

### Crew Tumbles Out

As the Hudson dived, the U-boat's conning tower hatch was thrown open, and about a dozen of the crew tumbled out and dropped on to the deck. The Hudson crew thought they were manning the guns so they kept their own guns firing hard. The red streaks of the tracer were peppering into the conning tower and kicking up little spurts of water all round the U-boat.

This was too much for the Germans. Those who were already on the deck turned and ran back into the conning tower, those who were coming up from below still tried to push outwards. For a few moments there was "an awful shambles" in the conning tower, as the Hudson pilot afterwards described it. The U-boat crew were all mixed up together, some struggling to get in, others to get out. All the figures seemed to be capless, and they were distinctly visible from above, for they were all wearing bright yellow life-saving jackets.

Four times the Hudson roared over the U-boat,



guns streaming, banking steeply each time to swing round into the attack again while the rear guns and belly-gun kept up the fire. The rear-turret was firing practically all the time. All the pilot remembers hearing, besides the din of the firing, was the navigator muttering:

"I've lived all my life to see those baskets scrambling out of a conning tower."

#### U-boat Surrenders

As the Hudson was coming round for the fifth attack the U-boat surrendered. One of its crew held a white shirt up from the conning tower, waving it violently. The airmen ceased fire but continued to circle with guns trained, watching suspiciously. The Germans followed them anxiously round with the shirt, and then to make their intentions quite clear, held up what appeared to be some sort of white board.

"They've shoved a white flag up," called the wireless operator triumphantly.

The Hudson then flew right over the U-boat at about 50 feet, to see what it was all about. By then the entire U-boat crew had crowded into the conning tower, some thirty to forty of them. They were packed so tightly they could scarcely move.

"And a very glum lot they looked," the pilot said afterwards. "We were quite close enough to see their faces, and not a smile anywhere!"

The U-boat now lay stopped in the water, slightly down by the bows, with the waves breaking over her decks, and sometimes right over the conning tower, drenching the crew.

#### Holding Them A Problem

Then, for the first time, the Hudson crew realized with jubilation that the U-boat really had surrendered to them. The problem remained, how to hold them prisoner, and get them taken into custody.

The navigator prepared a message for base and the wireless operator's hand rattled up and down on the key.

All this time the pilot was circling the U-boat, keeping his eyes glued to it. He did that for three and a half hours. Had he lost sight of it for one second he might easily have lost it altogether. When at last he stepped on to his home aerodrome, his neck was so stiff he could not turn his head.

All this while too, as the navigator and wireless operator were working away at their signals, the rear-gunner kept his guns trained ceaselessly on the U-boat crew huddled into the

conning tower of the submarine.

The message reached base, and it was determined to bring that U-boat and its crew to shore if it were humanly possible. Never before in history had an underwater craft surrendered to a land aircraft. It was determined not to let the U-boat get away. A Catalina was at once sent off to relieve the Hudson, and all the other aircraft in the vicinity were diverted over the U-boat from time to time, to demonstrate to the crew that there was a big striking force ready if they tried to escape. Hudsons, Catalinas, on patrol—they all flew over the U-boat from time to time.

#### Catalina Arrives

The relief Catalina arrived in the early afternoon.

When the Hudson crew saw the Catalina approaching they were afraid it might bomb and sink the U-boat. So they signalled anxiously to it.

"Look after our, repeat O U R, submarine which has shown the white flag."

"O.K." signalled back the Catalina.

Then the Hudson crew, satisfied, dived twice more over "their" U-boat to have a last look at it. One or two of the Germans, who had got down on the deck, waved mournfully to them. The pilot waved cheerfully back, and set course for home.

Then it was the Catalina's turn to circle endlessly, the blister guns trained on the U-boat crew. They kept it up for eight hours, without having to fire a single shot. Surface craft were steaming towards the spot as quickly as possible, but they were a long way off yet. The question was, could they get there before night-fall?

The hours dragged by, in those interminable circles. Some of the U-boat crew, now and then, walked out on to the deck from the conning tower, in spite of the waves—they were all drenched as it was, so what did the waves matter? The Catalina took the precaution of frequent dives over the U-boat to ensure that the hatch was still closed. Other aircraft came periodically to add to the threat—but still no surface craft.

#### Ship Arrives In Time

The weather was growing worse, daylight was fading. There was every chance of losing the U-boat during the night, and the Catalina crew were growing desperate. (Continued on Page 39)



## Lost on West Coast Flight

# Gen. Dargue Missing Since December 18

By Maj. Falk Harmel

**M**AJ. Gen. Herbert A. Dargue, commanding the First Air Force, Mitchel Field, N.Y., has been missing since December 12, 1941, when he departed on a transcontinental flight in an Army transport plane, accompanied by Col. Charles W. Bundy and Lieut. Col. George W. Ricker, of the War Department General Staff; Major Hugh F. McCaffery, Capt. J.G. Leavitt, 1st Lieut. Homer C. Burns, Staff Sgt. Stephen Hoffman and Pvt. 1st Cl. Samuel J. Van Hamm, Jr., Air Corps.

General Dargue belonged to the small group of officers who were affiliated with Army aviation practically from its inception. His contribution to the development of this branch of the service during a period exceeding a quarter of a century has been of an exceptional character, and his untimely end has left a void in the ranks of the Army Air Forces which will prove exceedingly difficult to fill.

### Taught By Lahm

General Dargue learned to fly in an old hydroplane at Fort McKinley, P.I., in 1913, his instructor being no less a personage than Maj. Gen. Frank P. Lahm, Retired, who was then a lieutenant of the 7th Cavalry serving a detail with the Aviation Section, Signal Corps.

While a member of the First Aero Squadron, General Dargue saw service with the Punitive Expedition into Mexico in 1916, where he did a considerable amount of flying in the early Wright biplane and where, amidst natives extremely hostile to Americans, he encountered many thrilling experiences and extreme privation.

Forced landings in his fragile plane necessitated long and hazardous treks on foot, without food or water, through alkali deserts and mountains, and often he reached a condition bordering on thorough exhaustion before he finally arrived at localities occupied by friendly troops.

During World War I, General Dargue was on duty for several months with the A.E.F. in France and England, making a study of the training of pilots, observers and mechanics. He then returned to the United States for duty as Assistant Chief of Training in the Office of the Director of Military Aeronautics.

After graduating in 1920 from the one-year



General Herbert A. Dargue

course at the Air Service Engineering School at McCook Field, Dayton, Ohio, General Dargue served on staff duty in the Office of the Chief of the Air Service, Washington, D.C., until August, 1928, occupying responsible positions in the Operations Division, the War Plans Division and the Training and Operations Division. These staff duties were interrupted in 1924-1925, when he attended the Command and General Staff School at Fort Leavenworth, Kans., and from which he graduated with distinction.

From December 21, 1926, to May 2, 1927, he commanded the flight of four Army planes on a goodwill tour around South America, during the course of which he narrowly escaped death following a mid-air collision with one of the other Army planes in the flight. After he released his safety belt and jumped from his violently spinning plane, his parachute became entangled in the wreckage. Fortunately, his parachute broke away from the wreckage and he escaped injury, although he struck the ground violently. In recognition of his organizing ability and leadership of this flight, General Dargue was awarded the Distinguished Flying Cross.

(Continued on Page 39)



## A. N. C. Aircraft Types Coordinated NEW COMMITTEE DEVELOPS DESIGN CRITERIA



**A**N Army-Navy-Civil Committee to coordinate the development of aircraft design criteria has been established by the Secretaries of War and Navy, and the Administrator of Civil Aeronautics. The new committee works under the supervision of the Aeronautical Board.

Membership of the committee includes the senior Army and Navy members of the Aeronautical Board's working committee; three members designated by the Assistant Chief of the Air Corps Materiel Division; three members designated by the Chief of the Navy Bureau of Aeronautics, and four members designated by the Administrator of Civil Aeronautics.

Air Corps members of the committee are Lt. Col. D.G. Lingle, Army member of the Aeronautical Board's working committee, who is chairman; and Lt. Col. H.Z. Bogert, Lt. Col. Orval R. Cook, and Major C.K. Moore, of the Materiel Division, Wright Field.

### Committee Functions

The functions of the committee, as outlined in the precept, are as follows:

(a) To develop aircraft design criteria governing: imposed loads, structural design, allowable stresses, methods of analysis, methods of testing, performance calculations, etc., and recommend the adoption of these criteria by the three member branches of the government.

(b) To arrange for such studies, tests, investigations, and conferences as may be necessary for the development of these criteria.

(c) To arrange means for exchange of technical information related to these criteria between responsible personnel in the member branches of the government and for maintenance of effective liaison.

(d) To arrange for promulgation, including publication, of criteria adopted by the member branches of the government, in the form of ANC Bulletins.

### 12 Sub-Committees

The ANC Committee holds meetings when deemed desirable in order to arrange for 12 technical sub-committees, operating as part of the ANC design criteria program, to carry out assign-

ments, and in order to report progress and the results of investigations to the member branches of the government.

Structural design problems of the Committee, in general, fall into three classifications: external loads, internal stresses, and allowable loads. These general classifications are further broken down into projects, each handled by a technical sub-committee. Projects of the ANC Committee are sponsored by either the Army Air Force, the Navy Bureau of Aeronautics, or the Civil Aeronautics Administration.

First publication issued by the ANC Committee is a Ground Loads Handbook, issued on ANC Project Number Two. The handbook is divided into three sections covering the strength requirements for tail wheel type landing gear, tricycle type landing gear and emergency landing and handling structures. The booklet will be distributed among the services and the industry in order to standardize and coordinate the design of aircraft.

**A** new civil contract glider-training school has been opened at Twenty-Nine Palms, a small desert community 60 miles from Palm Springs, California. Successful completion of the glider-pilot training courses given last summer at Lockport, Illinois, and Elmira, New York, has led to the establishment of the new school.

Students will be volunteers selected from the ranks of Air Forces officers serving as instructors at airplane pilot-training centers. Instruction will be provided by the contractor, the Twenty-Nine Palms Air Academy.

The first class, of 12 students, began training early in January, with subsequent classes entering at two-week intervals. The second class began training about January 14. Later classes will each include approximately 24 students. Pre-war plans called for the training of 126 glider pilots at the school.

Students, all trained power-plane pilots, will be given an average of 30 hours instruction in gliders of the two-place TG-1 and TG-2 types. These gliders were both used successfully in earlier glider-pilot training programs.

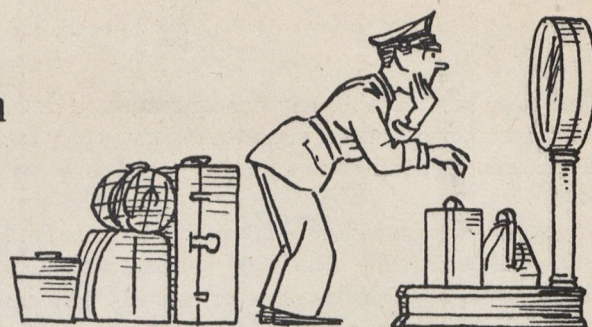


# For Duty Abroad

## How to Bundle for Britain

### By Lieut. Bruce Buttlers

American Embassy, London



WHETHER assigned for permanent or temporary duty, Air Force personnel traveling to the United Kingdom this winter should plan their clothing and equipment with utmost care. Every article must be studied, and the advantages of each garment carefully weighed, to determine the best possible selection within prescribed baggage limitations.

These are 40 pounds for the Air Corps Ferrying Command and 20 kilos (44 pounds) for British Overseas Airways Corporation—the two most likely gateways for passengers in a hurry. It is true that Pan American Airways permits some 20 pounds more on the route from New York to Lisbon, but this generosity is of no advantage when BOAC restrictions apply beyond. Neither minimum includes an overcoat on the arm or articles tucked into pockets, and this loophole is often a helpful escape for bulky travelers.

#### What The Traveler Can Take

The actual situation is, however, that one can travel light and still have plenty of essentials if he exercises a reasonable choice. Naturally, the exact selection will depend upon type and place of service, but by using the Air Corps issue flight bag, the 40 to 44 pounds should provide, roughly, for the following or equivalent articles:

One civilian suit (two suits for service in London) a complete field uniform with an extra pair of slacks (dark shades are best), two O.D. cotton and one O.D. woolen shirts, six civilian shirts, two suits of heavy underwear, some changes of light underwear, and extra pair of good heavy shoes, warm slippers and a bathrobe, ties, handkerchiefs and the usual toilet articles, plus a modest reserve of razor blades, matches, lighter flints and fluid, chocolate bars and flashlight batteries. Extra insignia and jewelry are essential.

In addition the wise traveler probably will include a few gifts for British friends if he can spare the weight and space. The ideal selection will vary from time to time, but currently cigarette lighters, safety matches, silk hosiery, cosmetics and miniature flashlights are

highly prized. Such articles are valuable in repaying inevitable social obligations to British subjects and their wives.

#### What To Wear

Personnel of the Air Force customarily wear mufti in London and the uniform elsewhere. That makes two overcoats essential in winter unless a combination garment is adopted. This may be a heavy trench coat with removable lining and shoulder straps. In selecting both civilian and military apparel, it is important to note that even in London cleaning requires much longer than in the United States and sometimes cannot be done at all. Usually garments will not be returned within a week and some articles (such as leather gloves) currently require three months. Laundry facilities are also slow. As a result, dark materials are popular. Neither the blue uniform nor civilian dinner dress is worn. Flying clothing is issued on this side.

Persons permanently assigned should send a small trunk by water freight. But in view of the uncertainty of shipping, it is unwise to expect delivery in less than two months, and the possibility of complete loss should be considered from the start.

Although clothing is severely rationed in the United Kingdom, arrangements were completed recently with the Foreign Office to obtain extra clothing coupons for Americans where necessary. Whenever possible, however, it is best to bring as much clothing as is required from home. It is actually out of the question for an officer to supplement his wardrobe and buy replacements during the year on the ordinary civilian ration.

#### Adequate Food

Insofar as food is concerned, Americans in London usually find that the quantity is adequate. There is a noticeable shortage of butter, eggs, fresh fruits, bacon, milk and similar dishes common at home. One cannot expect orange juice with his breakfast porridge. However, the diet in some instances has added weight to visitors who found less physical activity than they were accustomed to enjoy across the sea. Most



American officers bring concentrated vitamins as standard practice to supplement the food supply, although similar products are available in London.

American cigarettes, tobacco, toilet articles and non-perishable foods of various kinds can be had through a commissary primarily set up for the benefit of permanent officers and employees at the Embassy. Prices are not much above—and in some instances are substantially below—those charged in retail stores in the United States. Since the goods desired may not be in stock on your arrival, it is good procedure to have a personal supply in the flight bag, or kit, of tobacco products.

On the other hand, travelers passing through Lisbon may find much grief in carrying more than three or four cartons of cigarettes and a reasonable quantity of matches. Portuguese customs officers are likely to place a quite elastic interpretation on regulations and charge approximately \$6.50 "in transit" fees to pass any "unreasonable" quantities of tobacco, matches, silk stockings or concentrated vitamins through the country. One Air Force officer who paid \$1.05 a carton for cigarettes in Washington found it necessary to pay \$6.50 in Lisbon and \$7 more in the United Kingdom on seven cartons, only to find the same cigarettes through diplomatic stores at 75 cents a carton in London. It was possible recently to purchase standard brands of American cigarettes in Portugal for about \$2 a carton.

#### Bring Portuguese Money

When entering Lisbon it is valuable to have not less than 150 Portuguese escudos in small bills and coins to avoid exchanging American currency at unfavorable rates. For the most part, travelers' checks or a letter of credit are the best means of carrying funds, but these must be cashed at a bank under present regulations. They command a substantially better figure than dollar bills, which should be avoided completely. As a matter of fact, American currency can be bought in Lisbon banks at various discounts—recently 12 per cent—by tender of drafts on New York.

No distinction is made between the different denominations of currency, which need only be kept to 10 pounds. Thus it would be possible to bring in two five-pound notes or one 10-pound note just as well as 10 one-pound notes, with the added advantage that the larger denominations are much cheaper. Some loose British silver is also helpful. Prices of five and ten

pound pieces in Lisbon have been about \$1.90 to the pound recently, and about 90 cents more in New York in small quantities. Five pound notes are more convenient. Purchasers should beware of counterfeits. The Portuguese escudo is worth about four cents in American exchange. The American Express Company, which has offices in many cities, and Perera & Co., 10 Broadway, New York, are large dealers in foreign exchange.

#### Where To Stay

Hotel reservations are usually made automatically at Lisbon but not in London, where the traveler is more or less on his own. For that reason, it is advisable for new arrivals to telegraph ahead on landing for space. London is very crowded and the Quartermaster, 20 Grosvenor Square, W. 1., is frequently of help in obtaining accommodations. American officers usually stop either at the Cumberland Hotel (about \$2.75 a day), the Dorchester (around \$4.25 a day) or Grosvenor House (also about \$4.25). All these establishments are convenient to the Embassy in Grosvenor Square.

Despite a 17 per cent depreciation in sterling exchange, British prices will be definitely high to American visitors. Lunch or dinner in a good restaurant will be about 10 shillings, or \$2, and desirable places are so crowded that tables must be booked in advance. Drinks are roughly twice as expensive as at home and the prices of some unrationed foods are fantastic. Fresh pears, for example, are currently on sale at 3/6 (about 70¢) and white grapes were priced recently at 20/ (\$4) a pound. But expenses in the field are negligible and the Air Force officer will find that by using care his extra expenses in London are usually balanced by savings at RAF stations. In any event, he will return home with his life enriched by an experience in living not available to the average person.

*(This article was written by Lieut. Buttles in London before this country entered the war. Uniform requirements have since been revised so that uniforms are worn at all times while on duty.)*

In a class of 756 aviation cadets undergoing processing at the Air Corps Replacement Center at Montgomery, Ala., before flight training, 63 had not attended college but secured their cadet appointment by passing the difficult entrance examination, thus indicating that lack of a college education is not necessarily a bar to young men seeking appointment as aviation cadets.



**OBSERVERS ... (Continued From Page 16)**

as tails. Tails are very important.

Every observer should have access to a complete and up-to-date reference book of silhouettes, and they should all be provided with folders, which can be carried in the pocket, depicting by categories the aircraft listed for the three classes of tests.

**SUPPORT ... (Continued From Page 34)**

But at the last moment they sighted one of H. M. ships, which steamed up, and started to signal orders to the U-boat crew.

Then came darkness, the Catalina lost touch, and had to go home.

Long before daylight next day, however, another Coastal Command Catalina was in the area, continuing the vigil. By now a gale was blowing. The night was jet black, and rain storms were lashing everywhere.

Once, in the darkness, they picked up a glow of light from the submarine, but so fierce was the gale that, as they circled, they were blown off their course and lost her again.

But soon they saw her reflected in the dim light through the storm with the white foam of the waves breaking across her bows.

Throughout the remaining hours of darkness the Catalina continued to circle, sometimes losing the U-boat's light for as much as fifteen minutes at a time, but always finding her again.

At last light began to break, and the crew could just see the thin outline of the submarine. As the light strengthened they could make out one ship lying near by, and soon they saw other ships approaching. The Catalina crew watched the beginning of the long task of getting the U-boat and her crew to harbour.

From the time the first ship arrived, the U-boat was covered from the air by Coastal Command aircraft for practically the whole of the next forty hours.

*THE ROYAL AIR FORCE QUARTERLY*  
September, 1941.

Staff Sgt. Angelus J. Haverstock and Pvt. Ralph C. Krebs, Jr., Air Corps, received the Soldier's Medal for heroism in rescuing a fellow soldier from the burning wreckage of an airplane which crashed at Lovell, Texas, on June 12, 1941. The imperiled soldier was trapped in the gunner's cockpit from which he was taken to a place of safety by his rescuers, who were undeterred by the intense heat, smoke and flames or by the thought of the quantity of gas in the tanks of the airplane.

**DARGUE ... (Continued From Page 35)**

Shortly after returning from this flight, he made a good will air tour of 70 cities in the United States. This flight, which embraced 35 states and included a visit to Ottawa, Canada, involved a total distance of approximately 10,000 miles.

General Dargue graduated from the Army War College in 1928 and from the Naval War College the following year. He was stationed at Langley Field, Va., for nearly five years thereafter, commanding the Second Bombardment Group until August, 1933, and the Second Bombardment Wing until October, 1934. For the next four years he was on duty as Assistant Commandant of the Air Corps Tactical School at Maxwell Field, Ala. He was then appointed a Brigadier General and assigned to the command of the 19th Wing at Albrook Field, Panama Canal Zone. During his two years of distinguished service in Panama, he made numerous flights to neighboring South and Central American countries and proved to be an outstanding ambassador of good will.

Shortly following his return to the United States, General Dargue was appointed Brigadier General and Assistant to the Chief of the Air Corps, and assigned to duty as Chief of the Inspection Division, Office of the Chief of the Air Corps. More recently he was elevated to the rank of Major General and placed in command of the First Air Force at Mitchel Field, N.Y.

An active flier throughout his military career, General Dargue, over a span of a quarter of a century, has piloted the various types of military planes with which the Air Corps has been equipped, from the 40 h.p. Wright biplane of the pioneer days of flying to the modern "Flying Fortress." A scholarly officer who mastered the courses at the various service schools, he exhibited superior ability in both military and naval air tactics. Under his guidance as head of the faculty of the recently discontinued Air Corps Tactical School, it rose to an unusual height among service schools, being considered by many as the first school of its kind in its teachings and its broad conception of air tactics, particularly air strategy; of cooperation in both tactical and strategical operations with ground and naval forces, and the role of the long range bomber in modern warfare.

Air Corps noncoms enjoyed a field day recently when 400 technical sergeants were temporarily promoted to master sergeant and 1,000 staff sergeants to technical sergeant. These promotions were widely distributed.



**CRUISES...** (Continued From Page 24)

however are limited at stations outside of Cairo.

Radio facilities are excellent in the Middle East. Stations are equipped with homing devices and can provide weather and navigational information.

We left Cairo at 05.13 GMT on the twenty-eighth, and spent the night at El Fasher. The next day we encountered an unidentified pursuit plane, which eventually turned away. We landed at Takoradi at 13.15 GMT the evening of the twenty-ninth. Torrential rains delayed us two days at Takoradi, and another two were lost on account of the illness of Mr. Parker, our British radio operator. During the stopover some time was spent in inspecting the neighboring native markets. Camel meat, water buffalo and python were much in evidence. So far as I know, however, none of our party sampled these local delicacies.

**Averaged 250 MPH**

Leaving Takoradi at 6.04 the morning of October 3 we reached Belem that afternoon at 19.42, approximately one and a half hours before sun-down, covering a distance of 3405.15 statute miles in 13 hours and 38 minutes. Average speed was approximately 250 miles per hour.

We took off in a slight overcast. The weather was poor for about five hours out. Speed was aided by a slight tail wind. The automatic pilot did not function and the plane had to be flown manually most of the way. The navigator was interested to find that on taking the noon reading the sun was directly overhead, so there was no angle at all on the octant. But, thanks to Major LeMay's skilled navigation, we hit Belem on the nose as ETA predicted.

A severe oil leak developed in No. 3 engine, out of Belem. As we were too heavily loaded to go back, we continued on to Borinquen ready to feather No. 3 at any time. The oil leak was caused by a loose hydraulic pump housing. We remained in Puerto Rico a day and a half for maintenance. The home stretch was completed when we reached Bolling Field at 3.02 P.M. on October 7, having completed approximately 26,000 miles.

**Few Replacements**

It is interesting to note that the only replacements needed were a hydraulic pump shaft, nose wheel inner tube and relay switch, all of which were carried on board. Routine inspection replacements were, of course, made. And, as

previously noted, combat crew performed most of the ground maintenance work.

The Southern route to Middle East and to Europe is more feasible during the winter months than the northern route via Newfoundland, Scotland, etc. due to the absence of icy conditions along the tropical South Atlantic route.

**LUKE...** (Continued From Page 26)

It was 5.30 P.M. Clouds that I sailed toward faded out, just as steam disappears in the open air.

After Trenton there were no more thermals and I did a straight glide, depending entirely on my gliding angle for distance. I passed Quakertown, Doylestown, and Langhorne. The flight was about to end. I picked out a farmer's field, circled once, and landed, to the astonishment and fright of some cows that made way reluctantly. Now it was six o'clock. Some farming people came out and invited me to dinner. Hunger had fed my ignorance, perhaps, for I did not know how to say 'no.' I still had the chocolate bar. But roast chicken . . . After dinner we dismantled the ship and stored it in one of the farmer's barns.

From the farmhouse I phoned the ground crew at Elmira and called Fort Dix. They sent a car and two men to assist me. The next morning we picked up the Wolfe on a trailer and took it back to Elmira.

A glider landing near Fort Dix caused strange and lively interest. I was regarded with a curiosity appreciable only to those real pioneers who flew early in the century. Aerodynamically a glider may be classed as a plane, but my Wolfe was a hawk with frozen wings and I also set a record for hunger!

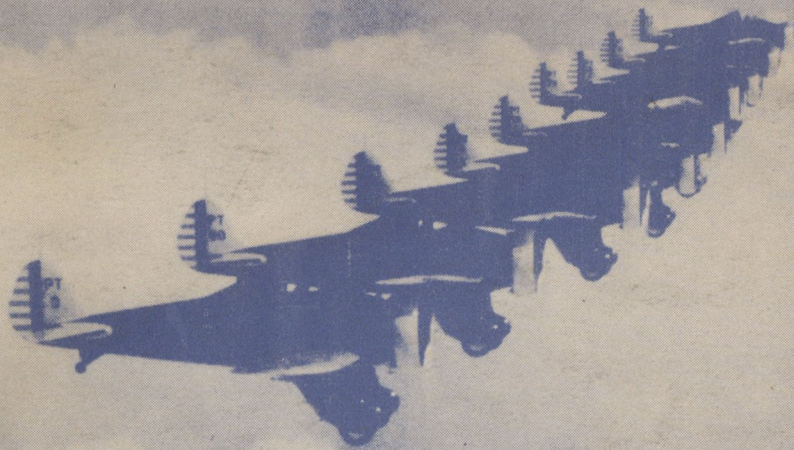
**PATRICK** (Continued From Page 4)

action was taken for three years.

Congress finally passed the Air Corps Act of 1926 authorizing a five-year expansion program which contemplated at the end of the period 1,650 officers and 15,000 enlisted men, including 500 flying cadets, and the production of 1,800 serviceable airplanes.

The Air Corps Act of 1926 was a victory for General Patrick, however meager it may appear in comparison with the present 125,000 warplane program. And it was General Patrick who opened the wedge for the mighty Army Air Forces of today. The man who learned to fly at the age of 60 "kept 'em flying" in a crisis.





### *Skyways Calling*

*Come to the skyways, Brother. Come with me  
And know the life that's free from fear and dread,  
Where courage rides in constant rivalry  
And weakling never yet has dared to tread.*

*Come to the skyways, Brother. Come this hour;  
Nor heed the dirge of him who has no spine.  
Come feel the thrill and joy of speed and power  
And know the glory of this life of mine.*

*Come where the air is free of sordid stains,  
Where the pace is set by skill alone.  
Come feel the surge of red blood in your veins  
And quaff the cup that coward ne'er has known.*

*Fear not. Though danger seems to ride apace,  
'Tis but the snarling of a conquered wind.  
This life of ours is but one glorious race;  
Yet he, who'd win, must leave all fear behind.*

*So to the skyways, Brother. Come today  
And venture up beyond where eagles fly.  
Come! Seek real adventure while you may  
And drive the foes of freedom from the sky.*

*Major N.R. Cooper*