AIR CORPS NEWS LETTER

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MATERIEL DIVISION NUMBER

THE CHIEF OF DIVISION

VOLUME XX JANUARY 1, 1937 NUMBER 1

WROTE THE CHIEF OF THE AIR CORPS TO THE CHIEF OF THE MATERIEL DIVISION, "WHY NOT A FEATURE MATERIEL DIVISION EDITION OF THE AIR CORPS NEWS LETTER?" * * RESPONDED THE CHIEF OF THE MATERIEL DIVISION TO THE CHIEF OF THE AIR CORPS, "WHY NOT INDEED?" * * AND SO, HERE IT IS! WE HOPE YOU WILL LIKE IT. * * NEXT MONTH'S EDITION WILL BE AS REGULAR AS THE REVOLUTION OF THE EARTH AND ALL ITEMS FROM OTHER AIR CORPS FIELDS AND ORGANIZATIONS WILL APPEAR AS USUAL. * * THIS NUMBER IS ONLY AN "ORPHAN."

Happy New Year

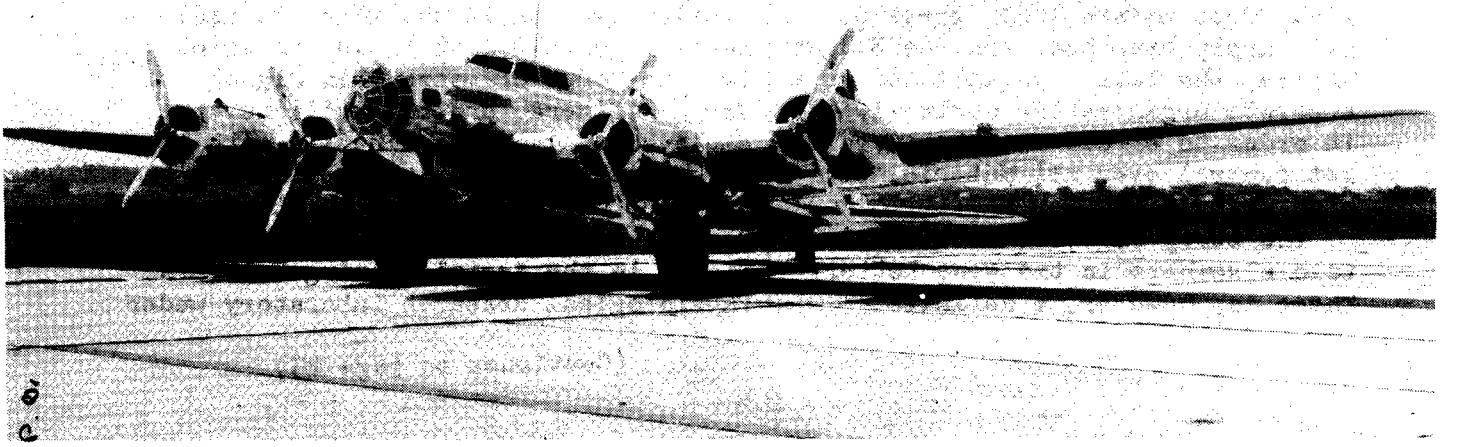
THE MATERIEL DIVISION extends to each field, department, and office of the Air Corps HEARTIEST GREETINGS and BEST WISHES for 1937. During 1936 the accelerated procurement program for airplanes with accompanying equipment and accessories has held the center of attention. Preparation of circulars, opening of bids, performance testing, and meeting of evaluation boards have marked the months. Development of advanced equipment has for the moment been subordinated to this broader activity which has absorbed all energies of a large engineering and procurement force.

In spite of this concentration on procurement, the necessity for thinking ahead along more advanced technical lines has resulted in the appearance in the various engineering laboratories of some highly interesting projects. At all times the principle has been emphasized that the main reason for the existence of the Division is the service it renders the tactical units of the Air Corps.

Our goal is one which, in accordance with all aviation history, and because of continuing development, ever renews itself.

Again the MATERIEL DIVISION sends forth warm and sincere GREETINGS to all for 1937.

A. W. ROBINS,
Brigadier General,
Air Corps,
Chief of Division.



MATERIEL DIVISION ORGANIZATION

Colonel F L Martin
Executive

Major A W Brock
Asst. Executive

Brigadier General A W Robins, Chief of the Materiel Division, is assisted in his administrative duties by Colonel Frederick L Martin, Executive, who serves also as Commanding Officer of Wright Field, and Major A W Brock, Jr., Assistant Executive, who serves also as Adjutant. Functioning directly under the Chief of Division as Commandant is the Air Corps Engineering School. Functioning under the Chief of Division through the Executive are the Engineering, Field Service, Administration, Procurement, and Industrial War Plans Sections, Army Aeronautical Museum, Flying Branch, the various Post maintenance, service, and supply branches, and the Budget Office; the latter established as a separate organization during 1936 in order to effect a centralized budget control over all Materiel Division activities.

The story of these sections is told elsewhere in the News Letter. There is, however, a definite sequence in the activities of three of them: the Engineering Section is charged with the duty of the development of materiel to a point of standardization where it can be used by the Service. All data concerning the equipment developed are then turned over to the Procurement Section, which prepares circulars and executes contracts for procurement. When procured the equipment is taken over by the Field Service Section for issue to the Tactical Units of the Air Corps.

Under these sections various offices and laboratories operate not only at Wright Field but at other locations.

Working in connection with the Engineering Section is the Aircraft Radio Laboratory at Wright Field, in which two Air Corps officers, six Signal Corps officers, and 80 civilians are employed. Also co-ordinating with the work of the Engineering Section are an Ordnance Officer located in the Armament Branch, and two Corps of Engineers officers in the Aerial Mapping Unit. A Physiological Research Laboratory under

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ENGINEERING SECTION

Lt. Colonel O P Echols
Chief

The ENGINEERING SECTION initiates all experimental work covering the designing, testing, and development of aircraft, engines, accessories, and ground equipment used in connection with the Army aircraft in accordance with an experimental program approved by higher authority. In the many laboratories under the jurisdiction of this Section will be found test equipment representing the most expert judgment obtainable involving an investment of approximately ten million dollars. Not only is this Section responsible for design, development, and testing, however, but also for the preparation of all engineering data used for evaluation and procurement purposes. During the calendar year of 1936 such data formed the basis upon which procurement of the following standard airplanes was accomplished:

PB-2A (Consolidated) biplace pursuit, P-35 (Seversky) pursuit, A-17 (Northrop) attack, O-46A (Douglas) observation, C-33 (Douglas) cargo, B-18 (Douglas) bomber, B-17 (Boeing) bomber, Y1A-8 (Curtiss) attack, BT-9 (North American) basic trainer, BT-8 (Seversky) basic trainer, and PT-13 (Stearman) primary trainer.

The Engineering Section, besides the Administrative Office of the Chief of Engineering, is made up of the Aircraft, Armament, Engineering Procurement, Equipment, Materials, Power Plant, and Shops Branches. The work of all except the Shops Branch is treated separately. Besides routine shop work in connection with equipment, this Branch designs and builds certain necessary items which cannot be procured from the Industry.

Major F O Carroll
Assistant Chief

PROCUREMENT SECTION

Lt. Colonel H A Strauss
Chief, Procurement Section

Lt. Colonel W F Volandt
Assistant Chief

The PROCUREMENT SECTION functions as the procuring agency for practically all equipment and supplies for the Air Corps, which for the Fiscal Year 1937 has involved in excess of sixty million dollars. Of this amount approximately 51.7 per cent is required by the Appropriation Act to be expended for the procurement of new airplanes, complete, approximately 8 per cent for experimental and service test projects, and the remainder of 40.3 per cent for the necessary operating and maintenance supplies.

The organization of the Procurement Section consists of the Contract Administration Branch, Purchase Branch, Inspection Branch, and Legal Branch, which at the present time require seven officers and approximately 260 civilian employees for operation.

The mechanics of procurement are set forth very much in detail by Army Regulations and existing provisions of the law and require essentially the same procedure whether the procurement is in the amount of a few dollars or several million dollars.

The CONTRACT ADMINISTRATION BRANCH serves as a liaison between the contractor and the Contracting Officer, and in carrying out this particular duty secures information as to contractor's plant facilities, resources, finances, personnel, and other pertinent data.

The PURCHASE BRANCH with its two officers (both of whom are empowered to act as Contracting Officers), and approximately 60 civilian employees, is directly responsible for the procedure incident to securing bids, administers the resulting awards and purchase orders or contracts, and follows up the status of such orders or contracts until delivery.

The LEGAL BRANCH is necessary for determination of the great number of legal questions continually arising in connection with making awards or resulting contracts. These questions are the result, in the main, of the

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Field Service Section

Col. F D Lackland
Chief

BETWEEN the experimentation, development, service testing, and quantity purchasing of airplanes, engines, and accessory equipment on the one hand, and the tactical employment of the equipment after it has been turned over to the widely scattered organizations throughout the Air Corps both at home and abroad on the other, there must necessarily be provided a setup to furnish an adequate flow of supplies and spare parts, and a systematic procedure for properly maintaining the equipment.

The administration of this setup is the function of the FIELD SERVICE SECTION of the Materiel Division. In general, this function encompasses the activities of storage, issue, maintenance, salvage and disposal of Air Corps property after it has been standardized for military use; responsibility for preparation of instructions, estimates, schedules, programs, reports, and studies in connection therewith; and administration of the machinery for the overhaul and repair of the equipment.

The system of maintenence is administered through the Air Corps depots, the engineering and supply facilities of which are under the supervision of the Field Service Section. One lighter-than-air and four heavier-than-air depots are maintained in the United States, and one each in the Philippine, Hawaiian, and Panama Departments. Through a system of unsatisfactory reports, augmented by close personal contact between the depots and tactical organizations, all service difficulties are reported to the Field Service Section. It then becomes the function of that Section to initiate whatever action may be necessary for the correction of difficulties. A system is also maintained for issuing all necessary technical instructions covering the maintenance and operation of Air Corps equipment. These instructions are issued in the form of technical orders.

In the administration of the service of supply, a complete system of property accounting is maintained. This system is completely mechanized through the medium of a machine bookkeeping system, all transactions involving property receipts and issues being recorded, with a centralized record showing quantities on hand, location, and current consumption rates maintained in the Field Service Section. Consolidated records of all flying equipment, that is, aircraft, engines, and balloons are also maintained, showing their condition, flying time, and the status and history of each item.

The Field Service Section initiates requests for procurement of Air Corps supplies needed for maintenance of equipment in service; prepares and distributes Air Corps catalogs, Stock Lists, Handbooks of Instruction, and miscallaneous regulations as required; also supervises the loans and transfers of Air Corps property, the disposal of excess and surplus supplies, and the distribution of Air Corps supplies through the depots to National Guard Units.

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Industrial War Plans Activities

Lt. Col. H V Hopkins
Chief

The INDUSTRIAL WAR PLANS SECTION, under the direct supervision of the Chief of the Materiel Division, is charged with the responsibility of adequate provision for essential wartime needs in the mobilization of Air Corps materiel and the industrial organization incident thereto in accordance with the principles of procurement planning as set forth in the Industrial Mobilization Plan. This responsibility comprises studies with a view to provision for the procuring of stocks of materials, equipment, and supplies in the quantity, quality, and location required, and the assurance that production begins early, that the materiel requirements are supplied as promptly as possible, and that Naval aviation requirements are jointly considered or co-ordinated. In the performance of the mission there is involved liaison with the Office, Chief of Air Corps, Office, Assistant Secretary of War, the Army and Navy Munitions Board, and the Navy Department.

Under the jurisdiction of the Industrial War Plans Section are six Air Corps Procurement Districts, located at New York City; Buffalo, New York; Cleveland, Ohio (now at Wright Field); Detroit, Michigan; Chicago, Illinois; and Los Angeles, California. The officers in charge of these districts are Air Corps Procurement Planning Representatives.

Procurement Plans

Plans for the procurement of basic items, such as airplanes, engines, their component parts and accessories, aerial cameras, special trucks and winches, lighter-than-air equipment, etc., have been made for practically all standard types of Air Corps equipment. The plans contain detailed information regarding the items under discussion, the number required, the sources selected as most suitable to manufacture the article in the quantities required, a statement from each of the selected sources as to the rate of production possible and the percentage of the plant capacity that will be utilized in attaining this production, the estimated unit cost and the cumulative cost for the entire program covering periods of twelve and twenty-four months' requirements, transportation problems involved, and a discussion of any difficulties that might be encountered in the emergency production of the article.

Plans are normally revised every three years, but may be more often, if necessary. When a new type is adopted, it is usually necessary to write an entirely new plan, as the manufacturing phases involved are, in most cases, at variance with those of the former type. The statement from the producer as to his ability to manufacture the item is supported by a factory plan, which is prepared with the aid of the producer, or by the producer himself.

Contributory Items

When the plans for the procurement of the basic items progress

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The Budget Office

The lack of a central agency controlling the preparation of the annual Budget Estimate, the defense of the Estimate before higher authority and the subsequent expenditure of the appropriated funds had, for a long time, resulted in the several sections of

Major B E Meyers
Chief

the Materiel Division functioning as separate and distinct little kingdoms. In February of this year, in appreciation of the paramount need of bringing the financial activities of the Division into a closer knit organization and to permit the exercise of an intelligent budgetary control, there was established in the Materiel Division a Budget Office for the co-ordination and administration of these matters. The task of establishing and operating this very important function was placed in the hands of Major Bennett E. Meyers who has been entitled Budget Officer.

Control over the preparation and administration of the Budget necessarily involves control over the sources of information from which are obtained the data required in the preparation of the Budget Estimate. Thus the Budget Office has jurisdiction over all Material and cost accounting in the Air Corps. This includes control of the method of accounting for property at all Air Corps Activities, the reporting of expenditures and movements of property and the conversion of this information into tabulated statistical data in the Budget Office for use, not only in the preparation of the Budget Estimate but in the procurement and distribution of supplies.

Since the flying of aircraft is the principal function of the Air Corps, it enters into the Budget Estimate as a primary factor. Hence, the recording and reporting of aircraft activity is also a matter necessarily under the control of the Budget Office. The flying data are converted in the Budget Office into statistical information paralleling the expenditure of material and labor and the whole reduced to the statement of material and labor requirement in terms of aircraft activity which is the Budget Estimate.

The use, in the Budget Estimate, of the material and labor consumption data expressed in terms of aircraft activity requires a knowledge of the probable aircraft activity during the period covered by the Estimate. To accomplish this as well as to keep the Chief of Air Corps informed in matters concerned with the future strength of the Air Corps, the Budget Office has established a method of forecasting airplane balances. This involves the establishment of limiting repair costs on airplanes, the limitation being determined by the age of the airplane according to an established depreciation rate.

The magnitude of the work of

(Continued on page 26)

AIRCRAFT BRANCH

Major H Z Bogert
Chief

The AIRCRAFT BRANCH is proud of its position among the aristocracy of aeronautical pioneering organizations. It has given not only many major contributions to aeronautical science but men also to the American industry. Among the former are monocoque airplane construction, dynamically balanced control surfaces, the enclosed cockpit, pressure cabins, and the retractable landing gear. The Branch has also been largely responsible for establishing present-day standards of manufacture and criteria of design.

Among the men drawn from the Aircraft Branch into positions of outstanding importance in the aeronautical world are — Klemin, Monteith, Kindelberger, Cover, and Doolittle. Still serving in the Branch are a number of persons of considerable reputation to whom the Air Corps is indebted for much of its progress. Among these are — P R Smith, D A Dickey, W E Savage, T de Port, J A Roche, and E R Weaver.

The functions and responsibilities of this Branch to the Materiel Division and to the Air Corps are outlined in a book of considerable length, so an extremely brief sketch only is attempted here.

The Aircraft Branch is divided into six major laboratories ~~under the Chief, Major H Z Bogert~~.

The STRUCTURES DEVELOPMENT AND TEST LABORATORY, ~~under the direction of Captain P B Kenner~~, is charged with stress analysis of all aircraft submitted to the Air Corps, testing the structural strength of those purchased, and developing, through test and research, new methods of assembling aircraft structures. To this group, ~~[illegible] under the direction of Captain C F Greene~~, the world owes the all-metal monocoque airplane; and through its efforts there is now being constructed the first substratosphere airplane complete with supercharged cabin.

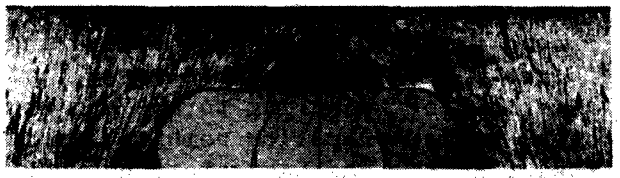
The SPECIAL RESEARCH AND TEST LABORATORY, ~~under Lieutenant R O Wilson~~, is charged with the preparation of airplane design studies from which military characteristics are established, the preparation of specifications covering the airplane proper, the evaluation of the airplane proper submitted on competition to the Air Corps, and the correction of unsatisfactory design features after the airplane is in service.

This Laboratory is constantly investigating new and novel designs and design details and developing standards wherever they apply. One of its primary functions is the development of projects

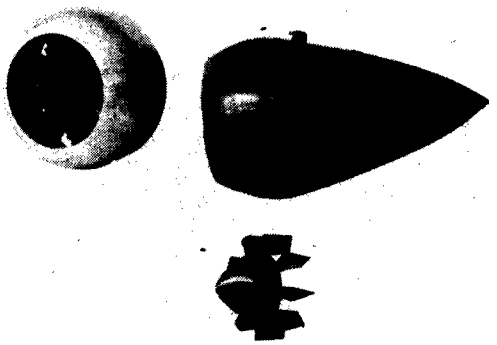
INVESTIGATION OF AIR FLOW

MEASURING DRAG OF COWLING OF AN AIR-COOLED RADIAL ENGINE NACELLE AND THE AMOUNT OF COOLING AIR PASSING THRU

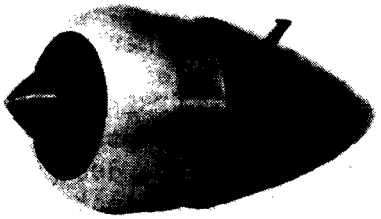
Incidentally the velocities of the air at various points in the propeller disc were measured during these tests, this being the first time this last has been accomplished.



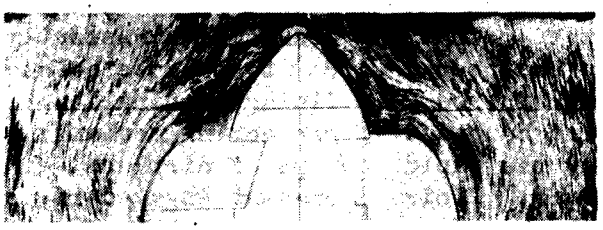
AIR FLOW LINES AROUND AN UNCOWLED AIR-COOLED RADIAL ENGINE AS TESTED IN WRIGHT FIELD 5-FOOT WIND TUNNEL



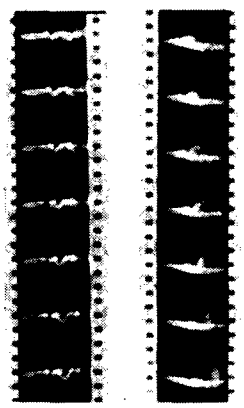
AIR FLOW LINES AROUND A COMPLETELY COWLED AIR-COOLED RADIAL ENGINE WITHOUT SPINNER



COWL ASSEMBLIES FOR IMPROVING THE COOLING OF AIR-COOLED RADIAL ENGINES ON MULTI-ENGINED AIRPLANES



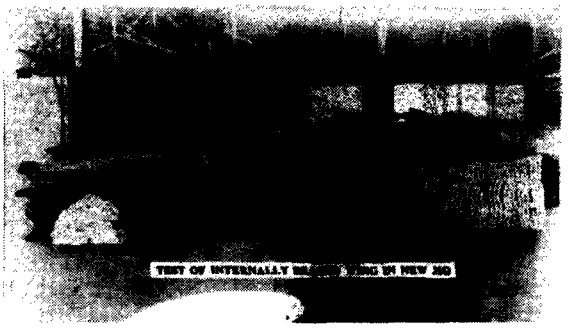
AIR FLOW LINES AROUND A COMPLETELY COWLED ENGINE WITH SPINNER



VISUALIZING AIR-FLOW AROUND THICK AIRFOIL SECTIONS USING TITANIUM TETRACHLORIDE PAINTED ON LEADING EDGE

(Test made in 11-inch high-speed Wind tunnel)

MATERIEL DIVISION 5-FOOT WIND TUNNEL AS ERECTED AT WRIGHT FIELD



of extremely experimental nature which are usually of secret status.

The PROPELLER RESEARCH AND TEST LABORATORY, ~~under Captain T A Oliver~~, ~~Ohio~~, passes upon the design, and conducts exhaustive tests to determine the characteristics of each type of propeller accepted by the Air Corps. In addition, it is continuously engaged in research and development of new types. The field of its endeavors has been greatly increased by the introduction of controllable and constant speed propellers and by the rapid rise in engine horsepower. This Laboratory conducts all the propeller tests for the Navy and Department of Commerce and is the prime source of propeller engineering data in the United States. It is at present engaged in the development of opposite rotating propellers on a single shaft, a project made necessary by the introduction of great horsepower in airplanes of short span.

The AERODYNAMICS RESEARCH AND TEST LABORATORY, ~~under Lieutenant H M Mosby~~, is engaged in developing methods of calculating performance, predicting performance by means of the wind tunnels, and actually measuring the performance of an airplane in flight. This Laboratory has made many contributions to the theory of aerodynamics and to the technique of wind tunnel operation. Its latest development is the photographic method of measuring performance in landing and take-off. At present it is engaged in developing methods for measuring static thrust, ground friction, and net accelerating forces of actual airplanes as well as a method for measuring torque and thrust of an engine-propeller combination in actual flight. The Laboratory has contributed much to the establishment of criteria for aerodynamic shapes, such as control surfaces, fairings, fillets, and the like, and for this purpose operates two wind tunnels of 265 m.p.h. and 500 m.p.h. velocity, respectively.

The ACCESSORY DESIGN AND TEST LABORATORY, ~~under the direction of Lieutenant~~ [redacted], is charged with the development and test of wheels, brakes, tires and tubes, landing gear complete with retracting mechanism, skis, floats, hulls, and allied parts of the airplane. Wheels and brakes are constantly being tested in order to produce correct drum and brake lining combinations; and oleo legs and retracting mechanisms are tested for each type of airplane. This Laboratory is at present engaged in perfecting hydraulic and pneumatic mechanisms for use on aircraft, a new type to replace the streamlined type now in service, and a radically different type of landing gear designed for instrument landings and take-offs.

The LIGHTER-THAN-AIR UNIT, ~~under P B Smith~~, is engaged in the development of Air Corps balloons and balloon accessories, and in the correction of design faults which develop in service. This Unit is largely responsible for the TC-13 and is now projecting plans for the development of future Air Corps types.

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POWER PLANT DEVELOPMENTS

Major E R Page
Chief

The chief function of the POWER PLANT BRANCH is to keep the propeller turning. Without any lengthy discussion, we all know that when the propeller stops everything else stops. Years ago, in the days of iron men and wooden ships and poor engines, forced landings were frequent and, thanks to slow airplanes, a cow pasture usually sufficed. Today most cow pastures are not quite large enough for our high performance airplanes, especially if loaded. A proportionate increase in engine reliability now lessens the possibility of that awakening clatter, that sputter, that puff of smoke, that splatter of oil, followed by that awful silence as you start gliding down to a forced landing, or a jump if old terra firma under you does not look so good.

Next time you start across the Rockies, Hell's Half Acre in West Texas, or the swamps of Louisiana, give a few moments of thought to the years of development of that engine. No one man, no one company, no one organization can take full credit. Engines were not invented over night from bright ideas; they have been developed over a period of years by hard, painstaking work and, incidentally, at great cost.

The Power Plant Branch has contributed its share to the development and research of modern engines and accessory gadgets. Its chief concern is to give to the service the best, the most reliable engine at the earliest possible date. It works in conjunction with the various manufacturers who produce the finished product for test. The test consists of running the engine at various speeds and power loadings with controlled temperatures and pressures, simulating standard sea level conditions and the various conditions at altitudes. Contrary to the optimistic manufacturer and the rosy picture painted in an aviation magazine article featuring that certain engine used in a sporty racer in a record-breaking dash across the country — engines don't usually breeze right along through tests.

In the Power Plant Branch they must prove themselves capable of routine, day-to-day, [illegible] continued military service. Does number so-and-so cylinder cool properly? Does such and such a bearing get sufficient oil? Are the clearances on such and such a part too large or too small? Why did the case crack after so many hours on the test stand? Why the excessive vibration at such and such an r.p.m.? And so on for hundreds of other minor troubles found [illegible] in type tests of engines. [illegible] best to find out all those troubles on the test stand rather than over the Alleghenies, ceiling zero?

The first article of any experimental engine development is subjected to a 50-hour Development Test, following which any changes found necessary as a result of this test are incorporated. The engine is then subjected to a Type Test of 150 hours' duration. The successful completion of this test establishes the engine as an Air Corps type. Each model of each type of engine is subjected to this Type Test before it is assigned an Air Corps model designation and considered satisfactory for use in military aircraft. The duration and severity of this type test usually brings out the major troubles in any model engine, although the Service Test of the engine will undoubtedly reveal further troubles of a nature likely to be encountered in service. If the engine possesses unusual military value, it is a year or more before release is granted for use on commercial air lines or for export to foreign countries. Close liaison with commercial air lines offers a trade of ideas for mutual benefit.

Quoting from a recent report, the Power Plant Branch activities during the past fiscal year have been concentrated on increasing the power output of engines in service, development of new types of engines, improved fuels to permit greater power output and lower fuel consumption, an extension of supercharging to higher powers and altitudes, and the development of an oil dilution system for cold weather starting. Considerable progress has been made in the development of engine accessories, such as vacuum pumps, long reach spark plugs, magnetos and shielding, engine-driven gear boxes for accessory drives, hydraulic fuel pump drives, fuel pressure regulators, automatic oil temperature control valves, automatic supercharger regulators, automatic mixture controls, fuel injectors and controls, and hydraulic engine controls, all for the benefit of those who fly. The general trend in engine improvement is to take as much responsibility as possible from the pilot's already crowded mind, by replacing the great mass of control handles and gadgets by foolproof automatic controls, out of sight and, we hope, out of mind.

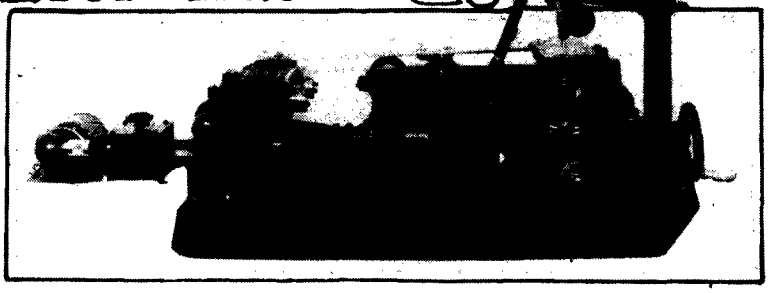
Snow in Summer Time

Recently, a visiting pilot in the Power Plant Branch was quite surprised to see men in winter flying clothes in the hallways of our Dynamometer Laboratory, especially so, as it was well over one hundred in the shade outside. Since some men were working in shirt sleeves and others in winter flying suits, somebody must be wrong. We followed the men in winter flying clothes to the cold room but not into the cold room. After the men had disappeared through the set of double icehouse doors, we peered in through a set of windows. There was snow on the cold-room floor and icicles hung from most of the objects. An engine was installed on a test stand. Even though we were warm it made one shiver to watch the Eskimo-like men at their routine work testing some gadget.

We checked up on this installation and found it quite a glorified ice plant, capable of cooling 185 pounds of air per minute from 100° F. to -55° F. Power required to operate the plant is some 1800 kw. for an 8-hour day. Approximately 20 tons of cooling coils are required, not to mention cork and other insulating material.

And what is all this for? Most airplanes work very well on a sunny summer day. But how about winter time when the mercury is around zero or below? That's the excuse for the cold room. Here has been developed most of our ideas on oil, gas, and starting troubles in cold weather. Even though perfection has not been reached, sound progress has been made. Next time you are at Wright Field try to include the cold room on your Cook's tour.

MATERIALS RESEARCH



J B Johnson
Chief

THE MATERIALS BRANCH combines the functions of a service organization and a research laboratory. In the former capacity, it does a large amount of testing in connection with the Procurement Program of the Air Corps and acts as a control laboratory by preparing specifications and developing and maintaining standards for the testing and inspection of material and processes at the contractors' plants. Research may be divided into two categories, one which determines the applicability for aircraft construction of materials submitted by the Industry to the Materiel Division, and the other which requires the development of a new process or material in which industry may not be interested on account of its limited application.

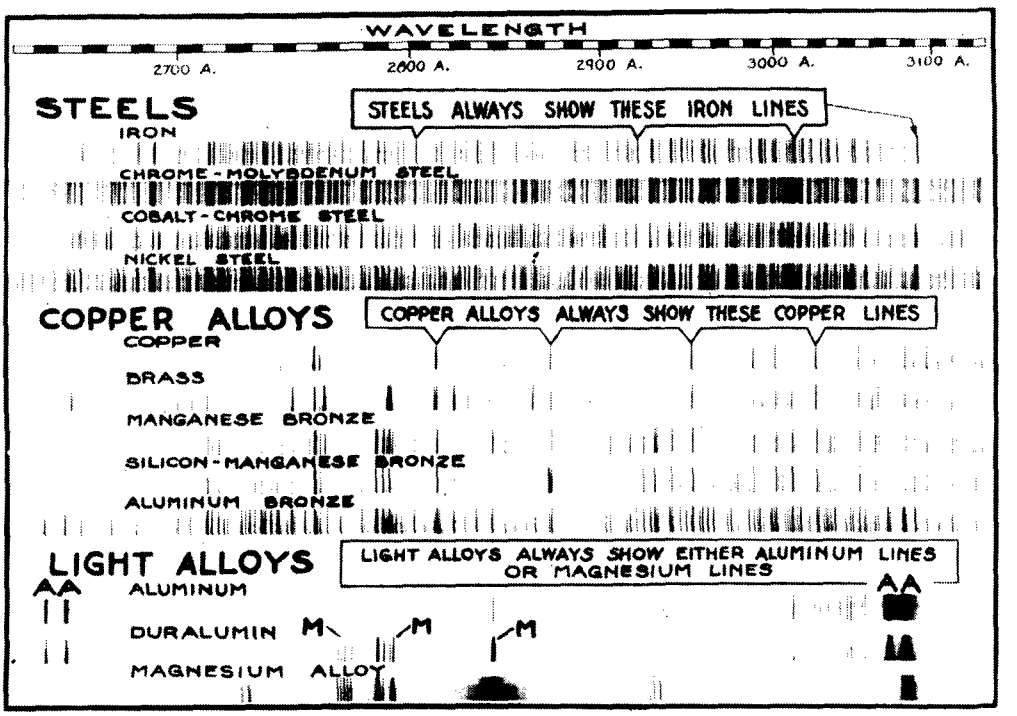
A wide variety of products is covered. Not only are the materials for the construction of airplanes, engines and accessories constantly being improved, but there are hundreds of items used in connection with maintenance such as paper, cleaning rags, sawdust, soaps, and [illegible]s for which specifications must be prepared since no other Government agency is interested.

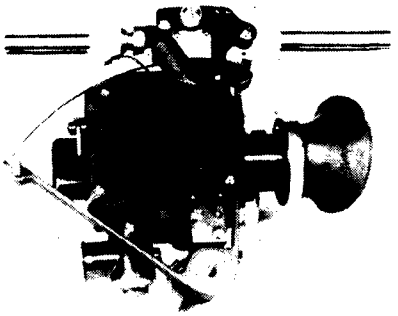
A change in one material or process generally leads to new requirements. The Air Corps has standardized on unpainted metal surfaces for airplanes. An aluminum-coated sheet was selected as the basic material after an exhaustive laboratory investigation of its mechanical properties, corrosion tests in the bay at Chapman Field, Florida, and service tests on Army transport airplanes. Spot welding of this material with elimination of the drag from rivet heads and lower cost of fabrication looks promising. The Division is cooperating with the Industry to establish a technique for uniformity and reliability of spot welding. The metal surfaces must be cleaned and polished to give a good appearance, and must not be attacked by the cleaner. A mixture of diatomaceous earth, soap, and naphtha has been developed.

The fact that gasoline swells rubber is well known and for several years the Industry has tried to get a superior product. The new synthetic products, Thiokol and Duprene, have been applied by the Division for the inner lining of hose for oil, gasoline, prestone, dope, and lacquer. This is a universal hose suitable for all liquids and identified by a red and white stripe along its length. Natural rubber is also a strategic material and Duprene has been adapted as a coating for an observation balloon which has been on service test at Fort Sill, Oklahoma for approximately five months, and was used successfully in the summer maneuvers in Michigan and Kentucky.

The probability that airplanes will fly at high altitudes has brought up many questions in connection with materials for this service. The properties must not change at the lower temperatures. Complete properties of all the structural material under static, impact, and vibration are being obtained in a room refrigerated to -50° F. The windows must withstand an internal pressure and it became necessary to obtain the physical properties of glass and glass substitutes. New resinous materials with the transparency of glass but considerably stronger offer a solution of this problem.

In the field of materials competition is very keen and new materials are constantly replacing the older ones. Each new material brings up fresh problems in connection with fabrication, protection from corrosion, as well as a study of its fundamental properties in tension, twisting, and fatigue. To carry out this work requires laboratory equipment of high accuracy and a wide range of adaptability. The laboratory at Wright Field has facilities for determining the presence of the most minute amount of an element in a material by means of its spectrum, or can test to destruction full-size parts for airplanes which may carry a load of 600,000 pounds.





EQUIPMENT BRANCH

The EQUIPMENT BRANCH of the Engineering Section consists of six Laboratories:

Instrument and Navigation
Electrical
Parachute and Clothing
Aerial Photographic - ~~includes Aerial Mapping Unit of Corps of Engineers~~
Miscellaneous Equipment
Physiological Research

There are approximately 500 items of ground and air equipment for which this Branch is responsible—research, development, and standardization. ~~A brief resume', showing the trend of development is given.~~

Instrument and Navigation Laboratory

A Douglas C-33 airplane for the conduct of experimental flight tests in connection with the various projects under development has recently been assigned to this laboratory. This airplane has been utilized in testing such devices as improved gyro octants, drift sights and signals, automatic pilots, and navigation computers of various types.

Among the interesting projects now under development is a tachometer that records engine running time. In addition to the pointer which indicates engine r.p.m., two small dials are provided, one to indicate accumulated engine time up to 500 hours, the other to indicate "trip" time. Only the latter counter can be reset from the face of the instrument.

A synchronous control for multi-engine installations has shown promise of early accomplishment. An experimental model of this device has been operating on bench tests and automatically synchronizes speeds much better than can be accomplished by manual control.

Instrument test equipment of a portable nature is nearing completion and it is anticipated the service activities will be supplied with this essential equipment in the early part of the coming year.

~~Electrical Equipment~~

Aircraft and ground lighting equipment are keeping pace with the requirements of advanced aircraft and the needs of the latest landing field installations. New equipment under development includes portable-by-air lighting equipment for landing fields.

Electrical development has been characterized by exploration into the field of alternating current for aircraft application. An experimental installation ~~will be~~ has been made during the present fiscal year.

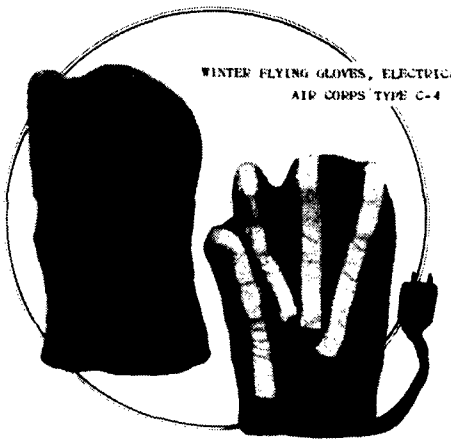
~~Parachutes and Clothing~~

Present parachute development is concerned with high-speed opening parachutes for use in the faster ~~military~~ airplanes. ~~Improvements in winter flying clothing are concerned mainly with those changes made necessary by changes in air-~~

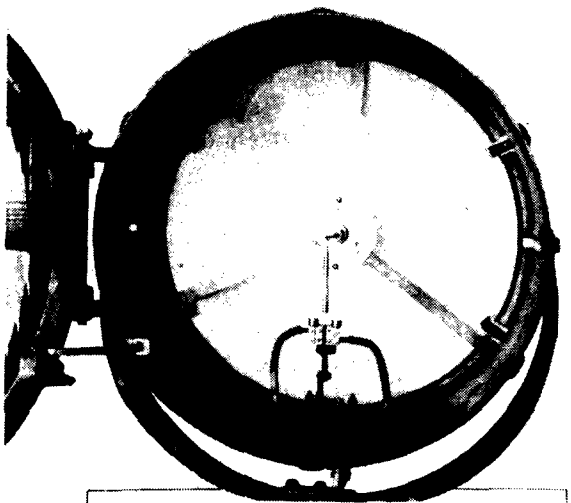
Major F S Borum
Chief

MISCELLANEOUS EQUIPMENT

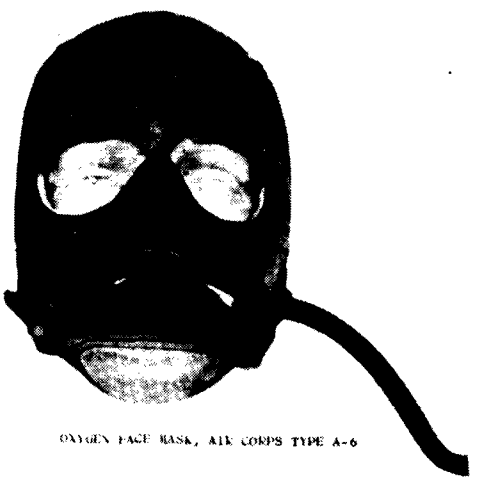
ANTI-AIRCRAFT HIGH SPEED TOW TARGET
AIR CORPS TYPE E-12



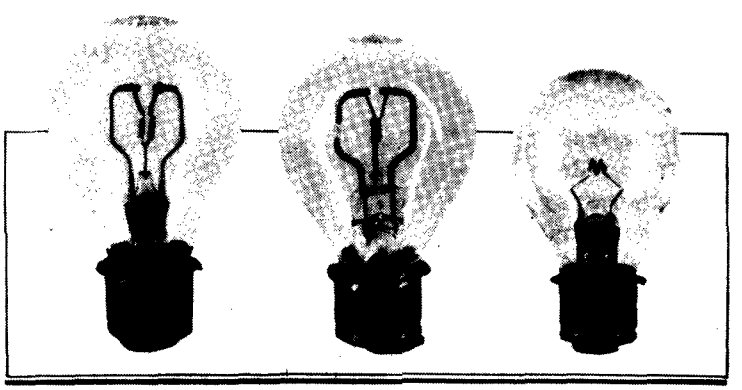
WINTER FLYING GLOVES, ELECTRICALLY HEATED
AIR CORPS TYPE C-4



EASY GAGE FOR FOCUSING FLOODLIGHT



OXYGEN FACE MASK, AIR CORPS TYPE A-6



COMPARISON OF LANDING LIGHT
LAMP FILAMENTS, AIR CORPS TYPES
C-2, C-8 and CC-2

plane design. A shoulder type safety belt is under development as a means of preventing head injury to the pilot in the event of a crash.

Aerial Photography

A self-contained photographic laboratory automobile trailer unit has been developed having one room completely equipped for printing and one for film processing and print finishing. The Unit houses its own ventilating system, water supply, electric power plant, chemical and material supply, together with all photographic accessories necessary to produce complete mosaics wholly within the Unit.

Miscellaneous Equipment

Progress is being made in the development of steam operated external energizers designed especially for use in cold weather. The equipment consists of a small automatically controlled steam generator weighing about 100 pounds and a steam-driven external energizer.

Physiological Research Laboratory

One of the most interesting projects of the Laboratory is an investigation of the effect of centrifugal force on pilots. The equipment for this research consists of a long rotating arm with a seat bolted to its outer end. Powered by a large electric motor this arm is rotated at speeds up to 80 r.p.m. at which speed a force of twenty times the pull of gravity is developed. Members of the laboratory are acting as experimental subjects up to 8 "G's" and anesthetized experimental animals for the higher forces which may produce permanent or fatal injuries.

—

STRATOSPHERE FLIGHT REPORT

An Engineering Section Memorandum Report on results of the 1935 Stratosphere Flight, prepared during 1936, states that all instruments and apparatus functioned as planned throughout the flight, with the exception of the three-blade 45° pitch propeller at the end of a yardarm, which failed to turn the balloon and gondola about a vertical axis above 62,000 feet because of the extreme thinness of the air. If another stratosphere flight were to be made, the experience of the last two flights indicates that it is possible to carry at least 1,000 pounds of scientific instruments to an altitude 10,000 feet higher than the altitude attained on the last flight.

—

PARACHUTES

The quick-attachable, Type A-2 parachute has been standardized. This parachute is composed of a standard Type S-1 hemispherical canopy attached to a conventional design pack assembly having one point steel coupling means for attachment to the harness. The harness assembly used with the Type A-2 is of the cross webbing cradle design and contains the female member of the steel coupling located below the chest for attachment of the pack assembly. The operation and maintenance of the Type A-2 is identical to the present standard hemispherical types.

—

PELORUS, TYPE A-2

An Engineering Section Memorandum Report states results of experimental tests on the Type A-2 Pelorus,—a mechanical instrument used for taking bearings from an airplane in the air, both celestial and terrestrial. The experimental tests were satisfactory and steps are being taken to procure a quantity for service test.

—

ENGINEERING PROCUREMENT BRANCH

Major C F Greene
Chief

The ENGINEERING PROCUREMENT BRANCH was created by the Chief, Engineering Section in May, 1935, to handle the engineering work pertaining to aircraft procurement and in particular to meet the demands of the Accelerated Aircraft Procurement Program then under way. In order to conduct all phases of this work under the close supervision of the Chief of the Section, the following existing agencies were assembled to form the new branch: Project Officers and Engineers (4 Units); Specifications, including Army-Navy Standards and Army-Navy Commerce Requirements; Drafting & Records.

The Project Officers were transferred from the Aircraft Branch and with civilian Project Engineers formed the following Project Engineering Units: Attack and Observation (Amphibian and Autogiro), with Captain P W Timberlake, Project Officer, and L V Cook, Project Engineer; Bombardment, with Lt. L F Harman, Project Officer, and O H Snyder, Project Engineer; Pursuit, with Lt. B S Kelsey, Project Officer, and J R Austin, Project Engineer; and Training and Transport, with Captain L C Craigie, Project Officer, and R L Montgomery, Project Engineer.

These Units were charged with the duty of assembling and co-ordinating all technical data required for the procurement of complete aircraft. This work includes the preparation of the initial type specification to the final adjustment of deficiencies or changes found necessary during the course of the contract. In the case of a standard procurement, it includes the preparation of Method of Evaluation, the distribution to the technical branches of technical data pertaining to bids, the assembly of records of the Evaluation (Technical) Committee, compilation of entire Evaluation Proceedings including Report of Utility Board, co-ordination and approval of final detail specification and contract (in the case of the winning bidder) and lastly, the co-ordination of engineering releases on shop drawings and the furnishing of decisions on the many details of adjustment incidental to the manufacture in quantity of complex types of airplanes which are being produced in quantity for the first time. This detail adjustment might extend well beyond the delivery of the last airplane of a contract, dependent upon the degree of responsibility of the contractor.

The Project Officer must follow the production of a type from its inception in the form of basic "Military Characteristics" through the above procedure to the delivery of the last airplane. This includes the keeping of a file of data on foreign airplanes of corresponding types as well as data on all

previously constructed domestic aircraft of record to date. It means that the Project Officer conducts a complete specialized engineering office pertaining to the types assigned and is the direct representative of the Chief Engineer on all engineering matters pertaining to those types. He must make visits to the manufacturing plants and to tactical activities operating the airplanes. He must fly demonstration airplanes as soon as they are made available by the Board. In collaboration with the Air Corps Representative at the manufacturer's plant he flies and usually ferries to Wright Field the first or an early article of a contract. He is a member of the Mock-Up Board and an observer of the static test. He watches the inspection and weighing and initiates all orders affecting airplanes which come to Wright Field for demonstration, test, acceptance, or modification.

Under the present procurement system he is obliged to avail himself of every opportunity to fly and to obtain other pilots' comments on the demonstration airplane or the first article of a contract, in order to sandwich as much of a service test into the proceedings as possible prior to the actual establishment of shop production systems and the "freezing" of the type.

During the past calendar year this Branch has handled the procurement engineering work involved in the manufacture of about 1,230 aircraft including three autogiros, These 1,230 airplanes, about one-third of which have been delivered, were of approximately thirty distinct types which could be further broken down into about forty variations. These represented actual manufacturing or rebuilding contracts and did not include the handling of data submitted informally, examination of foreign and racing plane data, and the many special studies, reports, and investigations which were required from time to time for the information of the Chief Engineer or for transmittal to higher authority.

The Specifications Unit prepares, distributes, and keeps on file all procurement specifications used by the Air Corps. In addition, B F Senart, the Unit Chief, is charged with the duty of maintaining all records, conducting all co-ordination within the Division of the immensely useful and growing Army-Navy Standards, and all matters pertaining to Army-Navy Commerce Requirements.

The Drafting and Records Unit, under E C Duval, is charged with the duty of preparing, checking, and distributing all graphic information for the guidance of contractors.

It maintains the Air Corps Standards Book and the Drafting Room Manual. For reproducing drawings for contractors and for distribution to service activities, six blue printing machines are in continuous operation. The output of these machines amounted to about 2,700,000 pieces during the past year. Next year it is estimated that about 3,000,000 prints will be needed.

Throat Microphone

A Board for the evaluation of a new type throat microphone to be used in radio communication convened December 10th at the Materiel Division.

Board members were: Lt. Colonel A H Gilkeson, Langley Field; Capt. A W Marriner, Office, Chief of Air Corps; Capt. T H Baxter, Barksdale Field; and Major Harry Reichelderfer, Capt. F L Ankenbrandt, and Lt. D C Doubleday from Wright Field.

SECTION AND BRANCH CHIEFS

Lt. Col. D. B. Howard
CHIEF ADMINISTRATION SECTION

Maj. M. G. Estabrook
CHIEF ENGINEERING SHOPS BRANCH

Maj. J. F. Powell

Maj. H. G. Montgomery

Maj. C. E. Wheeler

Capt. H. G. Woodward

INDUSTRIAL WAR PLANS SECTION

Capt. J. M. McDonnell
INDUSTRIAL WAR PLANS SECTION

Maj. L. L. Beery
STATION TECHNICAL INSPECTOR

Maj. C. J. Baker
SURGEON

Maj. R. C. Bower
QUARTERMASTER & CONSTR QUARTERMASTER

Maj. A. W. Stevens
Equipment Branch

Capt. H. G. Armstrong
Equipment Branch

Capt. J. W. Goddard
Equipment Branch

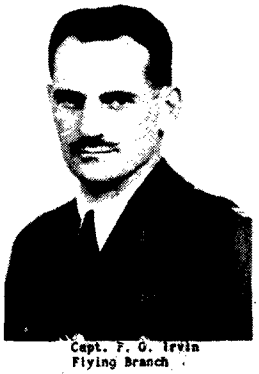
Captain C. J. Crane
Equipment Branch

Capt. G. V. Holloman
Equipment Branch

Lt. T. L. Thurlow
Equipment Branch

Lt. D. B. White
Equipment Branch

Lt. C. L. Munroe, Jr.
Equipment Branch



Capt. F. G. Irvin
Flying Branch

Capt. S. R. Harris, Jr.
Flying Branch

Capt. C. R. O'Connor
Flying Branch

Capt. G. J. Eppright
Flying Branch

Lt. M. D. Burnside
Armament Branch

Lt. P. S. [illegible]
Armament Branch

Capt. J. J. [illegible]
Purchase Branch

Capt. R. J. [illegible]
Purchase Branch

Major E. M. Powers
Engineering Section

Capt. P. W. Timberlake
Eng. Proc. Branch

Captain L. C. Craigie
Eng. Proc. Branch

Capt. C. S. Irvine
Engineering Section

Lt. L. F. Harman
Eng. Proc. Branch

Lt. B. S. Kelsey
Eng. Proc. Branch

Capt. P. H. Kemmer
Aircraft Branch

Captain T. A. Sims, Jr.
Aircraft Branch.

Lt. M. S. Roth
Aircraft Branch

Lt. H. M. McCoy
Aircraft Branch

Capt. A. H. Johnson
Power Plant Branch

Capt. C. A. Bassett
Power Plant Branch

Capt. F. D. Klein
Power Plant Branch

Lt. D. F. Smith
Power Plant Branch

Lt. P. H. Robey
Power Plant Branch

Lt. J. W. Sessums, Jr.
Power Plant Branch

Capt. A. H. Schwichtenberg
Assistant Surgeon

Major C. M. Cummings
Aircraft Radio Laboratory

Lt. D. C. Doubleday
Aircraft Radio Laboratory

Capt. A. A. Kessler, Jr.
Field Service Section

Lt. W. T. Hefley
Field Service Section

Lt. J. L. Jackson
Field Service Section

Lt. E. W. Rawlings
Field Service Section

Major A. F. Shearer
Aircraft Radio Laboratory

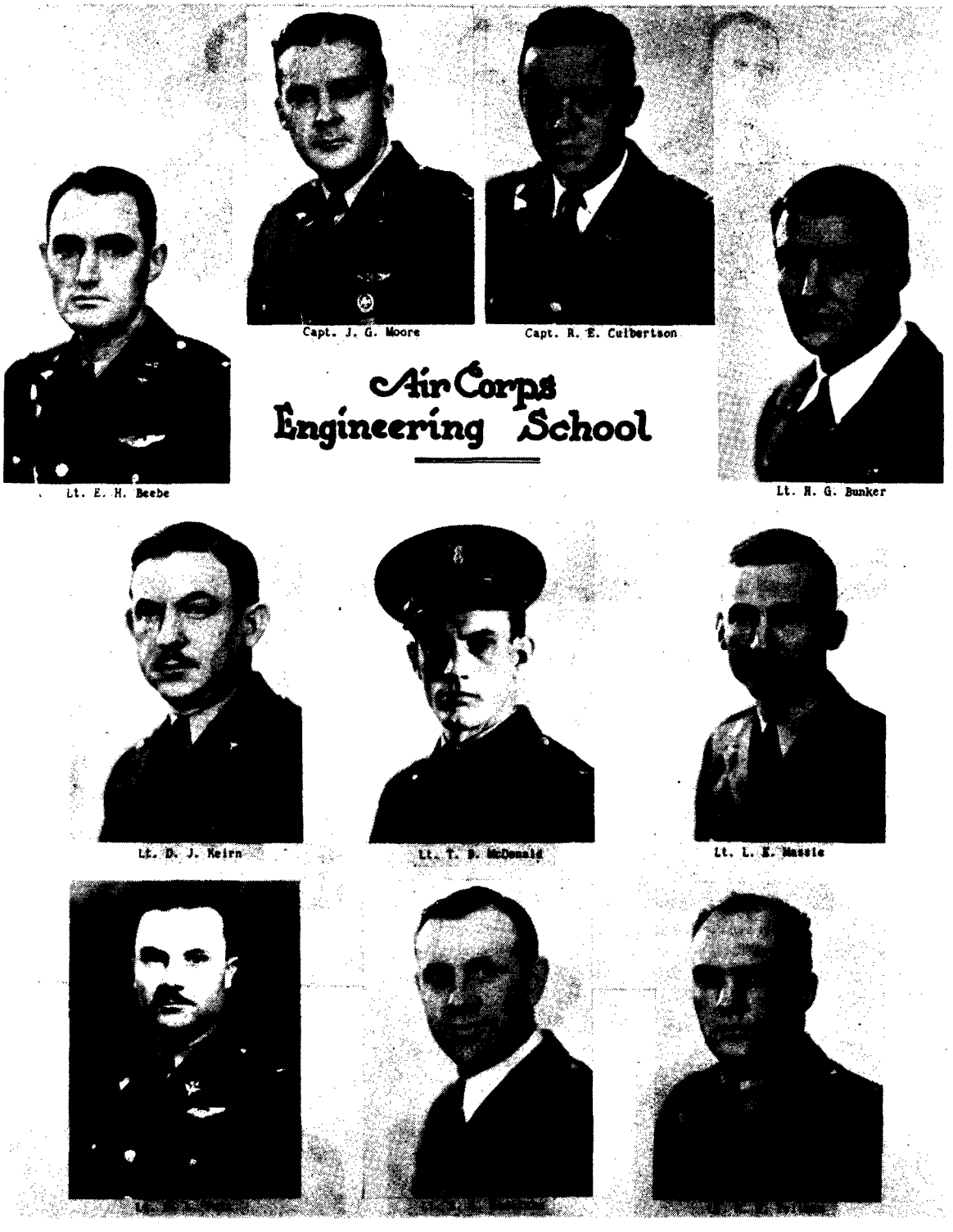
Major S. Michaelsohn
Aircraft Radio Laboratory

Major E. E. Poising
Aircraft Radio Laboratory

Aircraft Radio Laboratory

Captain E. Stern
Meteorologist

Capt. F. L. Ashwood
Aircraft Radio Laboratory


Capt. J. G. Moore
Capt. R. E. Culbertson
Air Corps
Engineering School
Lt. E. H. Beebe
Lt. H. G. Bunker
Lt. D. J. Keirn
Lt. T. B. McDonald
Lt. L. E. Massie

Capt. J. H. Icks

Maj. H. A. Divens

Lieut. J. Austin

FIELD SERVICE SECTION

Maj. R. W. Proust
CHIEF PURCHASE BRANCH

Capt. F. H. Vanderwerker
CHIEF LEGAL BRANCH

Capt. R. P. Lyman
POST SIGNAL OFFICER

Capt. J. F. Connell
FINANCE OFFICER

Capt. J. A. Madarasz
SUPPLY OFFICER

Capt. T. H. Chapman
CHIEF INSPECTION BRANCH

ARMAMENT BRANCH

Major J A Woodruff, Chief

The ARMAMENT BRANCH is responsible for the development of all items of armament equipment necessary to the complete complement employed in military aircraft, with the exception of those furnished by other Supply Branches of the Army, in which cases the Armament Branch is responsible for the provision of correct installation and proper functioning.

In the execution of these duties, it is necessary to prepare military characteristics applying to those items furnished by other Branches and to conduct actual development work on those armament items for which the Air Corps is responsible. For Air Corps developments, the Armament Branch prepares initial design and procurement data on the basis of existing requirements, and conducts thorough experimental tests prior to the release of data for service test procurement. Service tests of the items determine adoption, rejection, or continued development.

The Branch is also responsible for the preparation of portions of airplane specifications dealing with provisions for armament, and the determination by airplane inspections of contractor's compliance with such requirements.

Continued development or revisions in design of approved equipment, for the purpose of eliminating unsatisfactory conditions reported by the Service, is also a duty.

The following represents an interesting list of nonconfidential armament projects:

Determination of limiting dimensional characteristics and other installation conditions for turrets or inclosed cockpits in which flexibly mounted guns are used.

Revisions in design of existing bomb racks and control mechanisms for the purpose of incorporating a unit by means of which bombs may be released at regular time intervals, thus producing a controllable spacing on the ground of bombs successively released.

Investigation of revisions necessary in fixed gun installations to increase the number of bullets that can be fired against an objective within a given time interval for the purpose of compensating for the increased ground speed of modern attack type airplanes.

Installation for experimental test of 37 mm. cannon in the nose of the twin-engine attack airplane.

"To my way of thinking—and the observation is based on first hand experience as a correspondent in Europe in 1914 and again in 1917-18—that nation which is best equipped in the aviation arm has provided itself with the surest possible guaranty of peace for the future. If we hold the air, the earth and the sea and the coast lines will be protected."

—Irvin S Cobb

Activities of the Engineer Detachment

Captain L J Rumaggi, Chief

Captain B B Talley

This DETACHMENT, consisting of two officers, five civilian employees, and five enlisted men, is concerned with the development of rapid and economical map-making methods. In all projects, photographs obtained with Air Corps cameras of both single and multiple-lens types, supply the basic topographic information.

Two general methods are employed in transforming the topographic information contained in the photographs into map data. Graphical methods, (radial line triangulation) principally are followed in compiling all planimetric maps (those on which no relief is delineated). In topographic maps, (those showing relief) stereoscopic methods and machines are used. The Detachment is equipped with an aerocartograph and three different types of multiplex aeroprojectors. Both these appliances permit the operator to draw topographic maps direct from information contained in the individual photographs. In the aerocartograph, transparent positive plates, like in size to the aerial negative, are used and in the multiplex projector small transparent positive reductions of the aerial negatives are employed.

With this equipment the Detachment has completed within the past year two of the regulation fifteen-minute quadrangle map sheets of portions of the Olympic peninsula in Washington, five reservoir sites along a proposed Lake Erie-Ohio River canal, and in addition carried out an experimental program of military mapping of Fort Bragg military reservation.

Because the basic information is obtained from aerial photographs the Engineer Detachment assists the Aerial Photographic Unit in tests of new or experimental types of cameras and accessories. The Detachment assisted the Air Corps in photography with tandem five-lens cameras for the Second Army maneuvers of this past summer and those of the Fourth Army to take place next year. In addition, the nine-lens camera of the Coast Survey is being tested.

FRANKIE AND JOHNNY

According to Hoyle, air is made up of a proportion of gases including some oxygen, some hydrogen, some nitrogen, and a few other minor and lesser elements. Suppose we take a couple of particles of air drifting lazily along with the breeze. Let's call them Frankie and Johnny, Pete and Repeat, Amos and Andy, or what have you!

For the sake of conversation Frankie asks Johnny what that fast-moving thing is coming up in the distance. Johnny says, "Why that's a PB-2A — we better duck. I remember getting sucked into a Hiso back in 1919 and I was really battered around."

Before anything could happen — biff! The prop hit them and Frankie allowed as how they were being given the bum's rush at Clancy's dance hall. Before regaining their feet as they bounced along the engine cowling, Frankie had lost the feather from her new hat and Johnny his favorite pipe. Swish, and they whisked through a screen wire netting, down into an intake pipe, and lo and behold — Johnny sees his first turbo-driven impeller. Frankie by this time was suspicious and asked Johnny, "Am I crazy, or is that thing really going round and round?" Johnny did not have time to answer because a blade clipped him from the rear and smacked him on into darkness, down through what he thought must be a crowded sewer pipe terribly cramped for space, and a lot warmer. By the time he had emerged from this long ride he was a little cooler and off in the distance somewhere he heard Frankie giving someone the devil for pushing her around. Fate bounced them together again and Frankie swore that, intercooler or no intercooler, she hadn't been pushed around so much since that subway ride after her last Army-Navy game. Johnny could feel the black and blue places beginning to form but wouldn't admit it to the weaker sex. The crowd wouldn't stop moving. On it went till a hissing noise was heard. Frankie said, "Enough is enough — I don't mind being pushed around in a crowd but that hissing noise sounds like a Bronx cheer from the boys over at the gas house."

Right she was, but it was too late to turn back. This joint had no side exits. A big Swede by the name of Throttle Valve seemed to be the doorman and somehow managed to mix the gas house gang in with the air crowd. About one palooka seemed to be with every fifteen of the air crowd. A flash of light in the distance was an indication to this gang that a party of some kind was about to take place. Frankie snuggled a little closer to Johnny cause she saw by the look in the eye of that guy from the gas house gang that he was in this party for no good. Trouble was brewing!

Another flash and the crowd tumbled down into a deep well whose bottom seemed to fall, give them a shaking up, and then the well suddenly decided to squeeze everybody up to the top. It was as hot and stuffy as the corner pool room. All of a sudden a couple of lightning flashes took place and then hell broke loose. The darkened place immediately made the Chicago fire look small, and was Frankie's face red! Fire was everywhere. A big Irishman flatfoot by the name of Exhaust Valve acted as the bouncer and, without ceremony, kicked the crowd out into a flaming hot alley, and around several corners. By this time everyone was in a mood to smack the first thing

handy. Frankie and Johnny saw a couple of department store revolving doors that turned out to be turbine buckets with a sign on them that said PUSH! They did, and were immediately thrown out into the sunlight again. Johnny was glad that somebody, years ago, had decided that matter could neither be created nor destroyed and explained this to Frankie, but Frankie somehow doubted if she would ever be the same.

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MATERIEL DIVISION ORGANIZATION
(Continued from page 2)

the direction of a Medical Corps officer has been added as a Unit.

Under the jurisdiction of the Field Service Section five main supply depots operate. These are situated at Fairfield, Ohio; Middletown, Pennsylvania; San Antonio, Texas; Belleville, Illinois; Coronado, California.

The Procurement Section controls district inspection offices throughout the United States and has jurisdiction over officers who serve as Air Corps Representatives at aircraft plants.

The Industrial War Plans Section operates six district offices located in New York, Buffalo, Wright Field (Cleveland Office), Detroit, Chicago, and Los Angeles.

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"Transportation and communication are the fundamentals in the economic development of a nation. They are also prime indicators of a nation's ability to meet a national emergency.

The airplane is to transportation of the future, what radio is to communication now and in years to come."

General J G Harbord,
Radio Corporation of America.

PROCUREMENT SECTION
(Continued from page 4)

broad and varied legal rulings which demand strict interpretation.

The INSPECTION BRANCH consists of one officer and approximately fifty civilian employees who are stationed at the Materiel Division for the purpose of controlling and co-ordinating inspection requirements. These requirements also cover by various laws and regulations, applicable not only to supplies sent to the Materiel Division for inspection and acceptance, but also those sent to the Field. This field inspection force consists of six officers who are designated as Air Corps Representatives and are stationed at the airplane contractors' plants, together with approximately 110 civilian employees, some of whom are stationed at airplane and airplane-and-engine factories, the others being scattered throughout the country in strategic points where they may be moved from one city to another in order to make the necessary inspection of supplies as they are contracted for.

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FIELD SERVICE SECTION
(Continued from page 5)

Other functions include the preparation of data for the Budget Office to support annual appropriations; maintenance of liaison with the Office, Chief of Air Corps with respect to depot buildings and grounds projects; maintenance of records of allotment of aircraft to stations; and the necessary control over air transport squadrons assigned to Air Corps depots incident to the proper flow of supplies in the Air Corps.

THE BUDGET OFFICE
(Continued from page 7)

accounting for Air Corps property and recording activity of the aircraft may be seen from the fact that there are annually approximately 1,400,000 postings on Air Corps stock record accounts, and approximately 500,000 airplane flights made. Current Budgets are totaling approximately $60,000,000.

Since the Budget Estimate is prepared nearly two years in advance of the actual expenditure of the funds appropriated, many changes in conditions and equipment inevitably compel readjustment in the setup of funds by project from that originally established in the Budget Estimate. The relative needs of each project and each department concerned are given full consideration but the final decision involving transfer of funds from one project to another obviously can only be made by one individual, who is logically the Budget Officer, who functions in an executive capacity for the Chief of the Division in all Budgetary matters.

Jurisdiction over accounting in the Air Corps includes the auditing of contracts with commercial organizations whereby the Air Corps obtains reasonable assurance of fair return for its expenditures of money.

In brief, the functions of the Budget Office may be roughly divided into two categories: first, the preparation of the Budget including the control of the sources of information required therein; second, the administration of the Budget including the control over the expenditure of the appropriated funds and the auditing of Air Corps contracts incidental thereto.

INDUSTRIAL WAR PLANS SECTION
(Continued from page 6)

satisfactorily, attention is given to studies for those contributory items and materials which, it is estimated, might be difficult to procure in the time and quantity required. Many raw materials enter into this class of items as well as aircraft hardware, cable, tie rods, valves, springs, crankshafts, machine tools, etc. Among the plans which have already been submitted to the Office, Assistant Secretary of War and approved, are items of permanent mold pistons, tie rods, cordage, engine valves, and valve springs.

Reserve Activities

An important activity of the Industrial War Plans Section is the selection and training of the Reserve Officers necessary to the proper wartime functioning of the Air Corps procurement organization. This wartime organization requires, in addition to the Regular Army and civilian personnel, a total of 477 Reserve Officers, of whom sixty per cent (286), according to the present War Department policy, are selected and trained during peace.

"The conquest of the air is America's gift to the progress of the twentieth century. We owe it to ourselves to lead the development of aviation both into efficiency and usefulness and also to lead in surrounding this new agency with such moral restraints that nations will agree not to capitalize its destructive possibilities."

—Newton D Baker

AIRCRAFT RADIO LABORATORY

Colonel J O Mauborgne
Chief

DEVELOPMENT PROGRESS IN THE AIRCRAFT RADIO LABORATORY

Notable among the new equipment being procured are two complete interphone systems, one for two-place, and one for multi-place airplanes, a short-range liaison set, the SCR-238, which will replace both the SCR-154 and SCR-185 sets; and an improved long-range liaison set (SCR-187-A) which will be used in place of the present SCR-187 set in new aircraft. One of the most interesting, as well as important items of equipment recently developed, is the throat microphone, now being procured to replace the T-17 hand microphone. This microphone will fill a long-felt want for use at high altitudes and will allow the pilot or operator free use of his hands for other purposes while operating his radio equipment. While development work of direct current communication equipment may be said to be completed, improvements are continuously being investigated and adopted, where advisable. In line with the projected use of alternating current power supply in large aircraft, alternating current transmitting and receiving equipment for both 800- and 360-cycle current have been developed with a view to determining the trend of such equipment for future use.

In the Air Navigation field, development work has continued on the problem of furnishing a satisfactory radio compass, and with this end in view, two models have been procured. The SCR-AA-186 and SCR-AB-186 sets, which are modifications of the old Type E-4 and differ only in the type of receiver furnished, have already been delivered to the Service, while the SCR-242, which combines the best principles of the art known today, will be available for delivery during the spring of 1937. Work is being carried on to further improve this equipment by furnishing smaller loops in streamline housings, if it proves practicable. Progress has been made in the development of a simple, light-weight direction finder or homing device which can be installed in pursuit airplanes. Tests of a loop wound around the engine cowl have given great promise.

The equipment contained in instru-

ment landing trucks has been improved from time to time, and at present, development work is being pushed to revamp the major portion of this equipment. New marker beacon projector and receptor equipment have already been service tested and are ready for procurement as needed.

A radio range marker for indicating the position of radio range stations provides a more positive indication than the cone of silence and will operate the present type of marker beacon receptor.

Several interesting problems, such as the control of the direction of flight by means of a radio compass and an automatic pilot, and the automatic selection of frequency settings on the radio compass by the action of the marker beacon receptor have reached laboratory solutions, and with slight modifications in the present laboratory designs, should be ready for procurement shortly, if needed.

In this same connection, aid was given the Instrument and Navigation Unit in the development of a training device to be installed in airplanes to simulate blind landing procedure.

The foregoing developments indicate that it will be but a short time until all airplanes will be equipped with efficient and satisfactory radio equipment for all purposes.

Other interesting problems too numerous to mention here, including ultra high-frequency work, are being carried on or will be set up in the development program for the next few years.

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T W A "Overweather" Plane

D W Tomlinson and James Hiestand of T W A, Inc., arrived at Wright Field on December 8th in a Northrop fitted up as a flying laboratory for the purpose of engaging with the officers and engineers of Wright Field in experimental substratosphere work. The Materiel Division has been following such a project for some time, convinced that both for commercial and military purposes it will prove a most important development. It is anticipated that they will remain some time at the Materiel Division to complete the testing they have planned.

In flying to Dayton, Tomlinson's average speed from Kansas City in a climb to Columbia, Missouri, was 170 m.p.h.; from Columbia to St. Louis it was 247 m.p.h.; and from St. Louis to Indianapolis it was 251 m.p.h. Between Indianapolis and Dayton, where a descent was made from 30,000 feet, the average was but 213 m.p.h. because of hindering head winds.

W A Reeves, turbo-supercharger expert of General Electric Company, accompanied Tomlinson and Hiestand.

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Kellett Autogiro

After a series of tests performed at the Materiel Division the Kellett autogiro was flown to Fort Sill, Oklahoma, by Lieutenant Nichols where it will be used in experimental work in connection with spotting artillery fire.

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ARMY AERONAUTICAL MUSEUM

Although the ARMY AERONAUTICAL MUSEUM Building has housed the Museum, Technical Data Units, and Air Corps Engineering School for more than a year, personnel still enjoy its newness and beauty. It is, in fact, a satisfaction not only to those at Wright Field, but to an average of 140 visitors a day, to whom it is one of the principal points of interest on a tour of the Materiel Division.

Major W J Hanlon is the Director of the Museum and Chief of the various units which function under the Technical Data Branch. This Branch consists of the Library, Editorial, Motion Picture, Photographic, and Statistical Units.

Major W J Hanlon
Chief

Museum

The main Exhibits Hall measures 115 by 141 feet and contains thousands of items gathered through the life of the Air Corps and collected through the past seven years at the Materiel Division for museum purposes. When the sun streams warmly through the high windows and skylights, it seems to show, not items belonging to a quaint past, but valid links in a triumphant chain of progress. Patent seekers may learn what has already been accomplished along their lines, designers may compare contemplated details with what has gone before, and students may visualize the many amazing engineering strides taken in the brief life of the airplane.

We cannot attempt to name even groups of exhibits. In the spring, suitable items were prepared for the Government display at the Great Lakes Exposition at Cleveland. Among these were modern sectionalized aircraft engines, latest military aircraft types (full-size and models), aerial photographic equipment, modern and obsolete aircraft parts, flying clothing, the propeller of the first military airplane, motion pictures presenting Air Corps activities, both current and historical. This display attracted 2,800,000 clocked visitors in four months.

Among interesting exhibits acquired during 1936 are the command DH-4 piloted by Captain St. Clair Streett in the Alaskan flight of 1920; the Bird of Paradise (Fokker monoplane), first

airplane to cross the Pacific to Hawaii; "Stumpy John Silver," World War carrier pigeon who served in the trenches, survived them, and concluded a comfortable veteran's life in Hawaii; a diorama depicting an airplane making a blind landing on a strange landing field. Improved methods of display and new display cases came into being during the year. It is believed that the Museum will increasingly become a Mecca for the aeronautically minded who will find in it information of interest and value.

Museum Rotunda

Materiel Division Library

Wright Field officers and civilian engineers haunt this pleasant room for purposes of reading, study, and research. During 1935, approximately 400 technical volumes were added to the 8,000 already on the shelves. The capacity is 32,000 volumes. About 3,000 ducuments came to the files which contain at the present time approximately 60,000. Distribution for the year amounted to 12,400 documents, books, and magazines. Historically, and as a working aid in aeronautics, the importance of these documents cannot be overestimated and they are drawn upon freely not only by Government organizations but by designers and engineers of the Industry. Preserved in a fire and burglarproof room, they tell the story of airplane development in their detailed accounts of experiments and tests.

Editorial Unit

The outstanding accomplishment of this Unit for 1936 was the editing, compiling, and publication of a completely new edition (the Eighth) of the Handbook of Instructions for Airplane Designers, a two-volume document

8-1/2 by 11 inches in size, containing 560 pages and 233 illustrations. This book forms a basis of 1938 airplane procurement. Besides this, the Technical Data Digest, a 48-page mimeographed magazine, giving abstracts of aeronautical articles from current publications, was published twice each month. Forty translations from French and German, consisting of from 3 to 34 pages in length, were made. Daily press contacts, preparation of special news and feature articles, lecture arrangements and preparation of lecture data, and Air Corps News Letter contributions were also among the projects of this Unit.

Photographic Unit

This Unit covers the general ground photographic assignments incident to the duties of a large experimental establishment. These include portraits of military personnel, of important experimental projects, and of all new airplanes. Lantern slides, photostats, photographic enlargements, and opal transparencies of late airplanes to be used in display cabinets were also made. During 1936 approximately 24,000 photostats and 19,000 prints were turned out.

Motion Picture Unit

This Unit takes motion pictures and prepares them for historical, technical, training, record, and educational purposes. Sound recording has formed part of this program for the past year and a half.

There is a definite need for motion picture equipment in the Air Corps. No better means of instruction by illustration, for instance, of the operation of an air unit engaged in a mission of attack, from airdrome to objective and return, can be visualized than with the sound motion picture. The utilization of the so-called animated cartoon may also have application. There is also need for motion picture photography in the study of behavior and causes of failure of materiel. Slow motion picture studies of wing flutter, propeller vibration, bomb release mechanisms, and many other aeronautical research problems are considered extremely valuable.

Sound recording is being added to instructional film on the inspection of the A-17 airplane, the photography of which was accomplished at Chanute Field. Approximately 12,000 ft. of film was copied during 1936 for the Office, Chief of Air Corps.

Statistical Unit

One of the most important functions of this Unit is the compilation of charts and data presenting the characteristics of aviation engines and airplanes, foreign and domestic, military and commercial, in order that this information may be disseminated properly throughout the Service. Other charts, photographic layouts, special maps, and drawings are also prepared for various purposes.

This Unit keeps on file the originals of Air Corps Technical, Service, Translation, and other Reports for reproduction, and also distributes them. By the collection of newspaper clippings and general statistical data this office serves as a source of general statistical information to the Materiel Division. Distribution of the Handbook of Instructions for Airplane Designers with revisions, Air Corps Information Circulars, Air Corps and Navy News Letters, and Miscellaneous Naval Reports received from Washington are distributed. Much of the information received in this Unit is of confidential nature and must be accordingly guarded.

ENGINEERING SCHOOL

Lt. R P Swofford, Jr.
Assistant Commandant

The Air School of Application, later designated the AIR CORPS ENGINEERING SCHOOL, was established in November, 1919. This School was the result of the growing realization of the need for a group of Air Corps officers well grounded in aeronautical engineering. A total of one-hundred and eighty-eight officers will have completed the course of instruction with the graduation of the 1936-37 class.

The scope of the curriculum has been changed many times in an effort to keep abreast of the rapid technical progress in Air Corps equipment. It becomes increasingly difficult to cover properly all the essential subjects in the allotted time of one year. It should be remembered, however, that the School is not trying to produce highly trained and specialized engineers in certain particular phases of aeronautical engineering, but to give to officers the sound and general engineering background that will aid them in the performance of duty with the Materiel Division and future service in the Air Corps.

Curriculum

The curriculum may be roughly divided into two parts. Approximately one-half of the time is spent in the study of the fundamental and theoretical engineering subjects such as aerodynamics, airplane stress analysis, propeller theory and design, etc. And one-half is devoted to the practical aspects of engineering as encountered within the Materiel Division proper and the Air Corps Depots. This latter work is performed within the various Materiel Division laboratories, shops, and units, and is under the direction of the highly qualified specialists who are in charge of the various units. This practical work includes such courses as engine laboratory tests, wind tunnel research, flight tests, etc., and stresses Materiel Division procedures, methods, and problems.

A further idea of the scope of the work at the Air Corps Engineering School may be obtained from a general comparison with the five-year course in aeronautical engineering given by any recognized civilian institution. While the theoretical subjects cannot be covered with the degree of thoroughness that is attained in a college or university, yet each professional subject included in the fourth and fifth year in aeronautical engineering at a university is well covered during the year at the Engineering School. Furthermore, in the field of practical engineering the School is in a truly unique position due to its close proximity to the Materiel Division. The laboratory work is performed upon the very latest types of Air Corps equipment and in laboratories equipped for every type and kind of test. The

instructors in this work are experts in their particular fields.

Postgraduate Courses

At the present time three graduates of the Air Corps Engineering School are sent each year to take postgraduate work at certain civilian institutions recognized as outstanding in the fields of aeronautical or power plant engineering. Officers are chosen for this detail from those who desire the postgraduate work and are well qualified to complete it satisfactorily. For these individuals the year at the Air Corps Engineering School furnishes a review of fundamentals, a general background in the entire field of aeronautical engineering, and a familiarity with Air Corps methods and problems that is of inestimable value, both to the officer himself in the pursuit of his work at the university and to the Air Corps in the future work of the officer in his chosen speciality.

Applications

Application to attend the Air Corps Engineering School must be made by letter to The Adjutant General, through channels. The applicant is furnished a questionnaire, which, when completed, gives a synopsis of his service and education. These papers are forwarded to the Faculty Board of the Air Corps Engineering School for recommendation as to whether or not the applicant is eligible for attendance at the School. The minimum technical and educational requirements are that the applicant be a graduate of a recognized technical college, a graduate of the Military or Naval Academy, or that the applicant prove to the satisfaction of the Faculty Board that he has sufficient knowledge of the fundamental sciences of calculus, chemistry, physics, mechanics, and drawing to warrant his attendance at the Engineering School. The class of approximately ten students is detailed each year from the officers upon the eligible list.

Visitors Invited

It is believed that there is comparatively little knowledge among Air Corps officers as a whole as to exactly what is accomplished at the Air Corps Engineering School or the real purpose behind the School. Therefore, this opportunity is chosen to invite any officer who may stop in at Wright or Patterson Fields with an hour or so on his hands, to visit the School, get an idea of what it is all about, and ask any questions concerning the School which he may have in mind.

Anniversary of First Flight

The 33rd anniversary of the first flight was celebrated in Dayton with special significance this year as it marked the inclusion of Dayton on the commercial air map by the inauguration of regular air mail, passenger, and express service for Dayton by both the T W A and American lines.

The usual pilgrimage of the N A C A to the home of Orville Wright and the placing of a wreath on the grave of Wilbur Wright by Brigadier General A W Robins was observed. In the afternoon members of the N A C A visited Wright Field.

Sand from the dunes of Kitty Hawk, North Carolina, where the first airplane took off on December 17, 1903 will be used in christening the new T W A airplane, "City of Dayton." The sand arrived in a bag sewed by Mrs. Tate, wife of Captain Tate of Kitty Hawk who witnessed the first flight, on the same sewing machine used by the Wright Brothers for stitching fabric for their early experiments.

Flying Branch

Capt. S M Umstead
Chief

From the inside, the FLYING BRANCH is a routine workaday affair wherein an airplane is flown to check the r.p.m., manifold pressure, and carburetor ram pressure with a flat wire screen installed in the scoop, or a cooling test as required by E.O. 3759-10 is obtained by the test pilot and observer.

To the outsider it is a laboratory whose roof is the sky, whose walls are all out-of-doors, whose workers are pilots and observers of sound and quick judgment, knowing all that is to be known of the operations of a form of craft still new and radical enough to hold romance.

Actually the Flying Branch is made up of Units of workers as are the other Branches on the field. There are the test pilots headed by Capt. S M Umstead, who is also Branch Chief. The others are Capt. G J Eppright, Capt. S R Harris, Capt. F G Irvin, and Capt. C W O'Connor.

The FLIGHT TEST COMPUTATION UNIT, headed by E L Pratt, designates the method required and the data to be obtained in flight testing of the different airplanes or equipment, and computes results obtained in logical report order.

It also has charge of the installation and calibration of special flight testing equipment and in some cases designs new test instruments to obtain the test information desired. Because of the many new airplanes entered in competitions during the past year, the activities of this Unit have been especially accelerated. There is a PLANES & ENGINES MAINTENANCE UNIT, whose function is to inspect, maintain, and prepare the airplanes in the various hangars for incidental or test flying.

The "OPERATIONS OFFICE" is a self-explanatory term on all airdromes. There is a METEOROLOGICAL OFFICE under Capt. Benjamin Stern of the Signal Corps; and in addition, a RADIO TRANSMITTING AND RECORDING STATION identified by the call letters P E-2 and equipped with a long and a short-wave transmitter. In certain tests this radio is used to obtain flight test data.

Each morning at four, winter and summer, good weather and bad, a pilot goes aloft to 17,000 feet for the

purpose of obtaining weather data, Wright Field being one of a series of stations throughout the country designated for obtaining such information for the U.S. Weather Bureau.

Besides the hangars and those offices at which men work at desks there is a laboratory where special test instruments such as barographs, tachometers, altimeters, air-speed indicators, and thermometers are calibrated before and after test flights; a room for storing equipment temporarily removed from an airplane while special equipment put on in its place is being tested, and where airplane flares are kept handy for night flying; a ballast room, where sand bags, dummy guns, and dummy flares used in weight-carrying tests are ever ready for loading and installing on airplanes under test.

The standard performance test for airplanes has certain basic phases which have not changed greatly during the years. Among them are the power calibration test and calibration of the air-speed indicator, determination of official high speed and operating speed at any altitude, the saw-tooth climb, the check climb, the engine-cooling tests, carbon monoxide tests, the oscillation tests, pilot's preliminary and final observations, and for some airplanes the spinning tests. The latter usually call for anti-spinning devices in the way of releasable ballast or a small parachute attached to the tail of the airplane for the purpose of stopping rotation should the pilot be unable to bring the airplane out of the spin by means of the controls.

None of these tests with the high-powered craft of today is without an element of danger. Therefore, today as always, flight testing of new and experimental engines and airplanes requires courage, cool judgment, and careful, precise flying, all of which qualities are sought in the selection of service pilots for test flying.

During 1936 four initiates entered the Caterpillar Club from the Flying Branch. W W Cummings, H D McDaniels, and John Cutting were ordered to jump from the C-33 on July 22nd, when one of the motors caught fire in the air. Mr. Hobson of Chanute Field and Mr. Wetherford of Middletown Air Depot being in the cabin also jumped. All five men landed safely, as incidentally did the airplane, Captains Frank Irvin and J D Griffith succeeding in extinguishing the flames and bringing the airplane in safely.

Capt. Charles O'Connor was the fifth "Caterpillar" being forced to jump in the cold gray dawn of a weather flight on October 27th near Dayton. The plane went into a spin at 12,000 feet from which it could not be extricated and at 5,500 feet Captain O'Connor took French leave. All will undoubtedly dub it one of their lucky years with the parachute acting as a real Santa Claus.

A seventh Caterpillar initiate was J L Malone, civilian test pilot, who was spin-testing a plane entered at Wright Field for consideration as a trainer. He jumped near the Field at 800 feet when the airplane could not be brought out of a spin.

The flying field at Wright Field is well adapted for flight test purposes. It is generally triangular in shape, covers 520 acres, and has a landing area approximately one mile each way. Three hangars of concrete and steel construction have a total capacity for 75 airplanes.

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MAINTENANCE BRANCH

Lt. Colonel F W Wright

The present MAINTENANCE BUILDINGS AND GROUNDS BRANCH of the Materiel Division was organized during the World War at McCook Field and was known as the Construction Department. After hostilities ceased and McCook Field became the Engineering Division, the Construction Department acquired the title it now holds.

In 1923, it was decided that the Engineering Division had outgrown its quarters both in landing field area and building floor space. As a result the Architectural Unit and the Maintenance Buildings and Grounds Branch in co-operation with Lt. Colonel Frank W. Wright, at that time Chief of Buildings and Grounds of the Air Service, and the Dayton Air Service Committee, which was organized for the purpose, promoted the relocation of the Engineering Division by the use of charts, graphs, a large relief map, and photographs. Shortly after the War Department accepted the new location for the Engineering Division (now the Materiel Division, Wright Field), the Maintenance Buildings and Grounds Branch was allotted the first increment of funds to begin the preparation of the site.

In the spring of 1926, the removal of fences, trees, and other obstructions, and the rough grading of the landing field were started. Several caterpillar tractors and wheeled scrapers were acquired and these were made up into trains with which to move the dirt.

The preliminary layouts of the Field as well as the designs for the buildings had been prepared by the Maintenance Branch, Architectural Unit, and turned over to the Quartermaster General.

Throughout the course of construction, it was the function of the Maintenance Buildings and Grounds Branch, in order to co-ordinate the activities of the various branches with the Constructing Quartermaster to insure that Materiel Division requirements were met.

A majority of the buildings were contracted for by the Constructing Quartermaster. The Maintenance and Grounds Branch, however, installed the steel framework of the buildings, constructed from overseas hangar steel, and the utilities.

As the structures took shape, the stupendous task of moving the Engineering Division was delegated to the Maintenance Buildings and Grounds Branch. This was accomplished with a minimum of delay and confusion considering the great variety of equipment handled and the miscellaneous details connected with dismantling and re-establishment of the huge experimental plant. This was effected under the direct supervision of Major (now Lieutenant Colonel) J. H. Rudolph.

After the establishment had been completed, Lt. Colonel Wright was assigned to Wright Field as Chief of Maintenance Buildings and Grounds Branch, and under his direction the

problem of landscaping and beautification of the Post reached definite success.

At the time of his coming, a majority of the buildings were covered with temporary siding and roofs in the form of corrugated iron sheets. Since that period all, with the exception of five, have been changed to permanent coverings.

The decorative entrance to the Field was a design of the Maintenance and Grounds Branch, selected by competition which was also responsible for its construction.

Of the total amount of funds alotted for the construction and re-establishment, the Maintenance Buildings and Grounds Branch has expended approximately $2,000,000 or 30 per cent.

With the advent of the P W A, approximately 600 relief workers were supervised by the personnel of the Maintenance Buildings and Grounds Branch under the direction of Colonel Wright. All manner of projects were accomplished with these workers, including grading of the field, temporary roads, and improvement to grounds in general.

With the allotment of P W A funds three buildings, the Army Aeronautical Museum, Heating Plant Addition, and Static Test Laboratory, were approved for construction. The preliminary drawings and designs were prepared in the Maintenance and turned over to local architects for completion, the coordination between all agencies being handled under Colonel Wright's direction.

The MAINTENANCE BRANCH as now organized includes the Plant Protection Units and contains 141 capable workmen, each skilled in his particular line. The Branch is divided into the following Units: Administrative, Boiler House, Carpenter, Electrical, Fire Protection, Guard Protection, Janitor, Labor, Millwright, Mobile Machine Repair, Painting, Rigger, Sheet Metal, and Steam Fitting.

The duties of this organization are: the maintenance, drainage, and repair of lawns, grounds, roads, walks, and flying fields; supervising of all heating, lighting, power, gas, water, and sewer systems; the maintenance of buildings and installations, other than special technical installations pertaining to the technical work of the Materiel Division; the erection of such buildings as are authorized; inspection of the above to obviate malfunctioning; and the rendering of frequent reports to the Commanding Officer of the condition in which facilities are found. Fire protection, police protection, and janitor service are also functions of this Branch.

Of the 141 employees, forty-seven have served from 15 to 20 years with the Materiel Division, and fifteen have served from 10 to 15 years.

Automatic Pilot School

A class for instruction in the maintenance and operation of the automatic pilot convened on December 2nd with W W Cummings, engineer, of the Equipment Branch as instructor. Enlisted men from Bolling, Patterson, Langley, Mitchel, Selfridge, Kelly, Barksdale, and Wright Fields were in attendance.

Upon the completion of the course, these students will return to their fields to act as instructors to others who work with automatic pilots. The course is a thorough one, including both flying and ground phases of the care and operation of this important equipment.

HONORS AND AWARDS

During 1936 the Materiel Division had reason to be gratified by honors which came to various members of its staff for the performance of deeds of valor, notable flights, or outstanding contributions to science.

Lt. R K Giovannoli received (posthumously) in 1936 the Cheney Award for 1935. His gallant rescue of Major Hill and Leslie Tower who were trapped in a burning bomber is too well known to need recalling. Besides this, for the same acts of bravery, Giovannoli and also Lt.L F Harman, who assisted in the rescue work, were awarded the Soldier's Medal by the War Department.

Capt. H G Armstrong, Medical Corps, in charge of the Physiological Research Laboratory, was awarded the Henry S Wellcome gold medal and a cash prize of $500.00 for the best paper submitted in a contest on "The Importance of Co-ordinating the Military and Naval Medical Services with the Civilian Medical Profession."

Major A W Stevens has received many acknowledgments of merit for his stratosphere flights. Among them in 1936 came the Oak Leaf Cluster, a distinguished flight award given to aviators who have already received the Distinguished Flying Cross.

A handsome bronze plaque, the gift of the Dayton Chamber of Commerce, was also added to this officer's gifts of merit.

Major Hez McClellan, who was killed in flight testing an airplane last May, was awarded the Distinguished Flying Cross (posthumously) in June, 1936 for his part in the 1935 flight of ten Army bombers from Washington to Alaska and return.

Capt. Frank G. Irvin was awarded the Distinguished Flying Cross on December 10th for courage and cool judgment shown in extinguishing the flames which broke out in one motor of a Douglas Transport and bringing the plane to a safe landing on Wright Field after ordering five civilian test observers to jump for their lives. Capt. J S Griffith, who was piloting the airplane with Captain Irvin and assumed all responsibility with him, was similarly awarded. Both were test pilots of the Flying Branch but Captain Griffith was transferred before the presentation of the award.

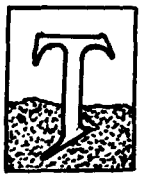
Captain Irvin is a member of the Caterpillar Club, having entered when he had been a Wright Field test pilot little more than a month. He was initiated when the spring mechanism of an experimental ski installation failed and sent the airplane into an uncontrollable dive. He was injured in landing.

Capt. B B Talley, Engineers Corps, of the Aerial Mapping Unit, received, upon authority granted by special act of Congress, the Nicaraguan Medal of Merit on August 4th. The Nicaraguan government conferred the medal for especially meritorious services to the Republic during the earthquake of 1931. At the time Captain Talley was in charge of an Engineers' Battalion making a survey of the Nicaraguan Canal.

Photographic Lamp Assembly

Action is being taken to standardize the Type C-1 lamp assembly for Air Corps photographic use. It consists of a parabolic reflector which has provisions for carrying either a No. 4 photoflood lamp, or two No. 2 photoflood lamps, mounted on a stand that permits adjustment from 4 to 8 ft. A suitable connecting cord and switch are provided for controlling the light. The carrying case is part of this equipment and houses two complete lamps in a knocked-down condition.

First Synthetic Rubber Balloon Constructed



HE only balloon in the world constructed completely of synthetic rubber is the Army Observation Balloon, Type C-3, which is undergoing service test at Fort Sill, Oklahoma. Completed in April of this year, it represents another of the many answers to research problems which have had their initiation at the Materiel Division.

Rubber being a product procurable only by import, it has been for many years one of the aims of the Materiel Division to obtain for Air Corps use a synthetic compound which would adequately take its place. The Industry was/and dozens of samples tested in scoured the Wright Field laboratories with but indifferent success. After several years a material was discovered which extensive testing proved not only equaled but surpassed the genuine rubber in every essential characteristic. This material was a commercial product known as "Duprene."

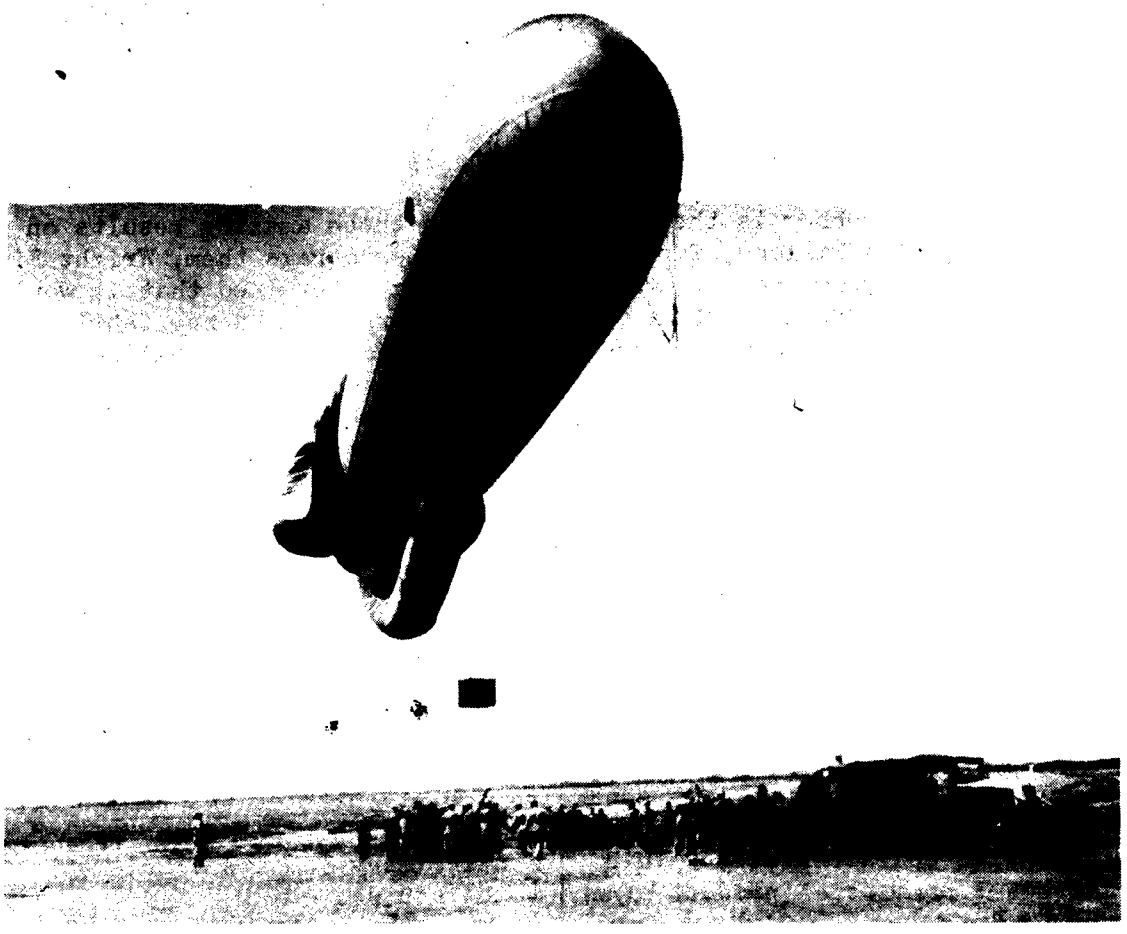
Experiments were started immediately in applying the compound to cotton fabric for the purpose of securing an adequate balloon fabric to supplant the genuine rubberized fabric. In the making of balloon fabric two plies of cloth laid at oblique angles are "doubled" or made homegeneous by interposing a layer of rubber. This method was not changed except that the synthetic rubber was substituted for the genuine. Extensive laboratory as well as exposure rack tests were conducted. Samples were exposed for eight months to the weather with monthly examinations to determine degree of depreciation as to strength and gas diffusion characteristics. At the end of eight months a slightly higher tensile strength than before was shown on the testing machine, and the gas escapage, which with rubberized cloth was from 15 to 19 liters per square meter, was but from 1 to 3 liters in 24 hours.

With these amazing results on samples to encourage them, Wright Field engineers determined that it would be well to try out the new fabric in a full-size observation balloon. Developed in conjunction with the Industry about 200 pounds of synthetic rubber compound were required. Even the cement and tape used in seams and for patching are of the same synthetic materials. In balloon structures seams must test out as strong as the fabric itself. Seam tests were carried out at high temperatures, as in the case of rubber, using synthetic cement. It was found that the performance of the seam was the same as that for rubber cement and was equal to the strength of the homogeneous material. This point was proved in testing many samples at elevated temperatures.

When the balloon was constructed, in lieu of a high temperature test, it was inflated with air and exposed to bright sunlight for two days before inflation with hydrogen. Instead of deterioration it was found that the seam strength had increased. In its service testing the C-3 observation balloon has been used in the Second Army Maneuvers in Michigan, been moved about the country otherwise, and shown excellent durability and gas-holding indications.

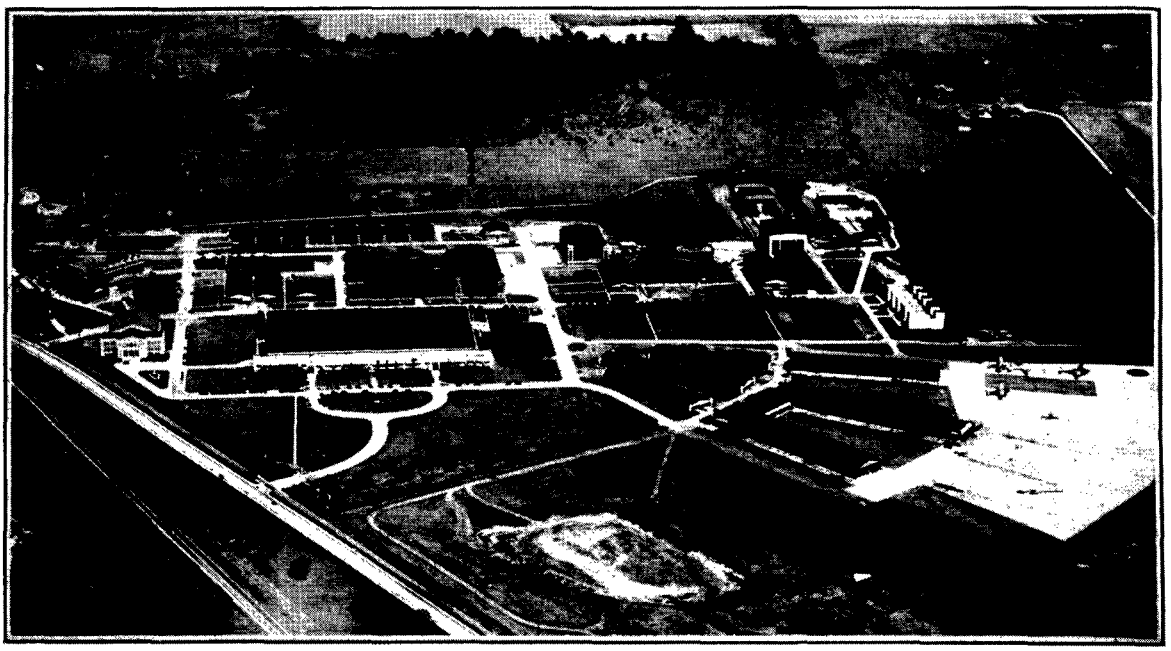
The life of a balloon constructed of genuine rubber is usually about one year. In the synthetic rubber balloon a definite and worthwhile increase in this period is anticipated.

This development has led to that of an all-purpose synthetic rubber-coated hose which is impervious to the deteriorating qualities of coolants, gasoline, oil, or other chemical solvents,



at any temperature encountered in practice.

When an experimental organization in search of a substitute finds one not only "just as good" but very decidedly better, it is a happy surprise indeed.



AERIAL VIEW OF WRIGHT FIELD

Air Corps News Letter

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AIR CORPS NEWS LETTER

VOL. XX NO. 2

Information Division, Air Corps — January 15, 1937 — Munitions Building, Washington, D.C.

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

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PROCUREMENT OF ARMY AIRCRAFT DURING 1936

The Secretary of War, Honorable Harry H. Woodring, announced recently that 506 airplanes had been delivered to the Army Air Corps by contractors during the calendar year 1936. This is the largest number of airplanes which has ever been delivered during any year since the adoption of modern all-metal construction. This simple statement of fact, however, by no means gives the whole story.

The cost of the airplanes necessary to equip a properly balanced air force of a given airplane strength has been increasing steadily ever since the War, and will probably continue to do so. This increase in cost has been due to four principal causes:

First, it costs more to build a large airplane than a small one.

Second, the proportion of Bombers (large airplanes) to Pursuit (small airplanes) has been increasing steadily from the proportion of about one Bombardment airplane to four Pursuit airplanes in 1926 to about 11 Bombardment airplanes to 9 Pursuit airplanes at the present time. The principal underlying reasons for this are that close Pursuit support of modern long-range Bombardment can no longer be provided clear to the target, and that the high speed and the great defensive fire power of modern Bombers make close support by large numbers of Pursuit airplanes no longer so vitally necessary as heretofore. Our Pursuit, which are thereby relieved of this defensive mission, become available for use in the defense of our own forces against the attack of hostile aircraft.

Third, since the world War there has been a progressive development from the wood-wire-fabric biplane through welded steel tubular construction to the modern riveted "dural" monoplane. To achieve the high performance required in modern aircraft necessitates meticulous care in the manufacture of many odd shapes, in order to attain the best streamlining, counter-sunk rivets and the elimination of every other possible impediment to smooth air flow. This all requires large expenditures for heavy machine tools and elaborate dies, jigs, fixtures, etc. - most of the latter equipment being useless on subsequent contracts.

To secure the maximum value from the large expenditure which the contractor has made for such equipment the Secretary of War has adopted the policy of letting large airplane contracts for delivery during a period of two years. The saving thereby effected is passed on to the Government, and he has thus been able to secure the maximum number of modern aircraft for the money expended.

Fourth, in addition to the cost, which is inherent in the construction of the airplane itself, the modern military airplane requires many instruments and much equipment scarcely thought of 15 years ago. For instance, at the close of the World War, a pilot who wanted on his instrument board more than a compass, altimeter, tachometer and water thermometer was considered just a little eccentric. Today, a modern two-engined military airplane may have over five times that number of instruments, controls, etc., costing over $5,000, and will also have flaps, brakes, complete radio equipment, and many other devices not in use on military aircraft of the post-war period.

For the money being expended today for modern Army aircraft the Government could buy almost twice as many planes of the models of 10 years ago, but the modern planes are many times more effective.

The same condition has occurred in building construction. For instance, a modern home with electric lights, gas-hot water furnace, three baths, asbestos insulations and air conditioning costs several times what the same size house would

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have cost our grandfathers, but we are more than willing to pay for the increased comfort provided by modern construction. Similarly, our modern Army aircraft, manned and maintained by an air force properly balanced in all its component parts are much more effective than a force of many times that number of obsolete aircraft.

Our aircraft designers are second to none. Our plane industry can and does build the best airplanes in the world today. It has been and will continue to be the policy of the Army to provide the Air Corps with the best equipment available - the amount of such equipment being limited to that procurable with appropriated funds.

For each dollar expended on Army aviation the country is getting a greater value in National Defense per dollar expended than ever before. It would be a great mistake to permit a craze for mere numbers to force us to accept less effective aircraft, although a greater number could be procured for the money.

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P U R S U I T A V I A T I O N

By the Langley Field Correspondent

There are in this country today three Pursuit Groups, the First, Eighth and Twentieth. All are a part of the General Headquarters Air Force. During the expansion of the Air Corps, the Eighth Pursuit Group was made an active operating unit and stationed at Langley Field, Va. It was composed of three fighting squadrons, a Headquarters Squadron and the administrative personnel who are designated as Group Headquarters Squadron. In addition to these, the 37th Attack Squadron has been attached for administrative purposes only. Since Attack tactics differ from Pursuit tactics, we will leave the explaining of Attack to those who are better qualified to explain it.

The three fighting units of the Group are designated as the 33rd, 35th and 36th Pursuit Squadrons. These Squadrons were first organized in the Spring of 1917, and were sent to France in the late summer. There they established and became an important part of the American Flying School at Issoudun. What is now the Headquarters Squadron was formed from the old 58th Service Squadron. This organization went to France in the spring of 1918, and was actually employed in three sectors at the front, namely; Lorraine, St. Mihiel and Meuse-Argonne.

Since its organization, the Eighth Pursuit Group has engaged in quite a number of maneuvers. The first of these was the Air Corps Command and Staff Exercises in California in 1933. Next came the gunnery exercises near Miami, Florida, in January, 1934. In the following January, the Group staged an aerial "war" throughout the 4th Corps Area, which is comprised of most of the Gulf and Southern Atlantic States. After a short breathing spell, the Group again moved into the field during the summer of 1935, using the National Guard airdrome at Virginia Beach as its base. Following this came the concentration of all units of the Second Wing at Langley Field. In February, 1936, some of the personnel from the Eighth Pursuit Group took part in the winter test operations in the New England States. This was a most severe test, carried on during a good old-fashioned New England winter. This past summer all Squadrons of the Group held field exercises at Virginia Beach.

At present the Eighth Pursuit Group is equipped with Curtiss P6-E's and Consolidated PB2-A's. The P6-E's are rather small, single-seater biplanes, powered with Curtiss "Conqueror" engines. This engine develops about 675 horsepower, and uses Prestone instead of water for the cooling liquid. The PB2-A's are a much later development. They are two-passenger, low wing monoplanes, powered with supercharged Curtiss "Conqueror" engines. Supercharging and certain other improvements have made these engines produce 700 horsepower.

All of the personnel, from the Group Commander down to the buck privates, are constantly working together to maintain efficiency and morale so that in the event of war they may fulfill the motto of the Eighth Pursuit Group - "Attack and Conquer."

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LANGLEY OFFICERS OBSERVE MIAMI AIR MEET

The Headquarters of the General Headquarters Air Force, Langley Field, Va., was represented at the All American Air Maneuvers by a delegation of four Langley Field officers headed by Major James P. Hodges, who flew to Miami, Fla., to act as observers at the Meet. Due to the rain and low ceilings which visited the eastern seaboard, hundreds of aircraft from all over the country were unable to reach Miami in time for the maneuvers. Hence the Arsenicker Ball, the military fete held annually for Air Corps officers, was attended by few honor guests. Colonel Hugh J. Knerr, Chief of Staff of the GHQ Air Force, then on leave at Miami, was elected Chief War Hawk at the ball. Incidentally, Major Hodges reported that Colonel Knerr was doing well with the rod and reel, recently hooking a 47-pound sail fish.

V-7197, A.C.

SECRETARY OF WAR PRESENTS D.F.C. TO GENERAL ARNOLD

For his achievement in leading a remarkably successful flight of ten Army airplanes from Washington, D.C., to Fairbanks, Alaska, and return, during the summer of 1934, Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, was presented on January 5th with the Distinguished Flying Cross. The presentation was made by the Hon. Harry H. Woodring, Secretary of War.

General Arnold is one of the Army's pioneer aviators and has to his credit many noteworthy aerial accomplishments. He has been flying for a quarter of a century and is still rated as one of the best of the country's military pilots. He is a native of Gladwyne, Panna., and a graduate of the United States Military Academy of the class of 1907. General Arnold received his first instruction as an aviator from Orville and Wilbur Wright, the inventors of the airplane.

In pinning the decoration on General Arnold, Mr. Woodring said:

"With great personal pleasure I wish to present to you in behalf of the President this Distinguished Flying Cross. This award is made by reason of your magnificent leadership in the great flight of ten Army airplanes to and from Alaska. However, it serves also to call attention to your long and brilliand record of flying achievements which began a quarter of a century ago and still continues.

As a pioneer aviator twenty-five years ago you were a contemporary of the Wright Brothers, Glenn Curtiss and others, whose inventions and experiments first conquered the air. Among your associates were many brilliant and daring flyers who long since have made the supreme sacrifice for the advancement of the science of flight. Among your early amazing achievements was a successful cross-country flight of a dozen miles that won for you the coveted Mackay Trophy. At that time this was a greater feat than a round-the-world flight would be today.

I am sure, General, that I speak not only for your associates in the Army, but also for all Americans, in congratulating you on this well deserved award and in expressing the hope that the country will continue to have your splendid service for many years."

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GENERAL PRATT BECOMES PERMANENT BRIGADIER GENERAL

By the Langley Field Correspondent

The first Army Air Corps officer to achieve the distinction of being appointed a permanent general officer of the line of the Army is Brigadier General Henry C. Pratt, commanding the Second Wing of the General Headquarters Air Force. General Pratt's appointment as a Brigadier General, with rank from January 1, 1937, was announced in War Department Special Orders of that date. He was assigned to duty with the Air Corps in his present position as Wing Commander, Second Wing, GHQ Air Force, Langley Field, Va.

This appointment of an Air Corps officer marks, in a general way, the coming of age of the Air Corps as an arm of the service to contain officers with sufficient service to be eligible for such appointment.

General Pratt was born at Fort Stanton, New Mexico, September 2, 1882. He was appointed to the United States Military Academy from Wisconsin on August 1,1900, and upon graduation on June 15, 1904, was appointed a second lieutenant of Cavalry. He was promoted to 1st Lieutenant on March 30, 1911; to Captain, July 1,1916; to Major, Regular Army, July 1, 1920; to Lieut. Colonel, June 20, 1928, and to Brigadier General, temporary, July 17, 1930. He was relieved from duty as Assistant Chief of the Air Corps on July 16, 1934, and reverted to his regular rank of Lieut. Colonel. On March 2,1935, he was again appointed Brigadier General, temporary.

General Pratt first served with the 4th Cavalry at Fort Leavenworth, Kansas, until October 15, 1904, when he was transferred to the Presidio of San Francisco, where he was on duty until September 5, 1905. He then served at Fort Snelling, Minn., to April 9, 1909. He was aide to President Taft and assistant to Officer in Charge of Public Buildings and Grounds, part of which time he served at San Antonio, Texas.

He was aide to Major General Arthur Murray at Washington, D.C., to March 9, 1912. Upon his relief from that detail, he continued on duty at the Presidio with the 1st Cavalry, to May, 1913. He then served at Yosemite Valley to November, 1913; and at the Presidio of Monterey, Calif., until December 31, 1913. He was aide to Brigadier General George Bell, Jr., at San Antonio, to May 15, 1916, and at El Paso, Texas, to October, 1916, when he became Assistant Adjutant of the El Paso District, serving as such until March 13, 1917.

Ordered to Hawaii in March, 1917, General Pratt was assigned to duty with the 4th Cavalry at Schofield Barracks. He was transferred to the Signal Corps for duty with the Aviation Section on August 5, 1917, but continued on duty with the 4th Cavalry until October 3, 1917. Re-

(Continued on Page 4).

LANDINGS WITHOUT WHEELS

As the Selfridge Field News Letter Correspondent whimsically puts it, further test of the advisability of landing a PB-2A with wheels in the retracted position was a recent occurrence. He goes on to say that 1st Lieut. Murray C. Woodbury, en route to Fort Leavenworth, Kans., in an airplane of this type for the purpose of engaging in a tactical problem, was flying at about 2,000 feet and had reached a position about 50 miles east of Fort Leavenworth when the engine "threw" connecting rods in both banks of No. 2 cylinder, causing dense smoke and apparent fire.

Lieut. Woodbury at once adjusted the stabilizer, throttled the motor back and called to his passenger to "bail out." The latter, Private P.G. Vaughan, 3rd Air Base Squadron, without hesitation climbed over the side and hung by his hands along the fuselage. At this moment, Lieut. Woodbury, who was out on the wing beside the cockpit, decided there was no fire and that he would attempt a forced landing. He motioned Private Vaughan back into the cockpit, but the latter was unable to get back and dropped free.

Lieut. Woodbury managed to get back into the cockpit and, in a shower of oil and smoke, set the plane down on its belly in a small plowed field.

Possibly, under the stress of the occasion, Lieut. Woodbury had no time to lower the landing wheels. It is more than likely, however, that, finding no suitable landing place in the immediate vicinity, he calculated a "belly landing" in a small area would be the safest after all, as the plane would skid along the ground for only a short distance, whereas a landing on the wheels might result in their striking a rough spot, with consequent nosing over of the plane, injury to himself and greater damage to the airplane.

As it turned out, the plane suffered no damage beyond a bent propeller and a crushed prestone radiator.

Private Vaughan, in the meantime, had opened his chute about 100 feet from the ground and landed safely. It was his first airplane ride since enlisting. When asked why he delayed so long in pulling the rip cord, he unperturbedly replied that the Supply Sergeant had told him not to lose his gloves and he had a hard time finding the rip cord with them on. He still has the gloves and also the honor of being the first to get away with "bailing out" of the rear seat of a PB-2.

Selfridge Field pilots are high in their praise of Lieut. Woodbury's courage and coolness under the circumstances. Our Correspondent states that the slight damage suffered by the airplane was [illegible] Lieut. Woodbury's first accident in approximately 3,000 hours of flying, both military and commercial, in the last 18 years, and that the conduct of both the pilot and passenger in this emergency is a credit to the Air Corps.

From Hawaii comes another story of a safe landing, minus wheels, of a B-12A Bombardment airplane. Shortly after taking off from Luke Field and while raising the wheels, the right wheel assembly fell off and hit the ground in the rice fields near Pearl City. Lieut. Chester P. Gilger, who was flying in formation with Lieut. Norman L. Callish, both being members of the 72nd Bombardment Squadron, notified the latter by radio of the accident and also called the ground station.

What will he do? That was the question everyone was asking. Would he land in the water near Ford Island, in the cane field, on Luke Field or Wheeler Field, or resort to his parachute? Lieut. Callish was notified to use his own judgment. However, if he decided to land on the ground, it was recommended that he land at Wheeler Field.

Knowing that belly landings had been made numerous times without serious damage to the airplane or personnel, Lieut. Callish chose the latter course, and when all was in readiness came in and made a beautiful landing without a bounce. The tail of the plane rose momentarily as he hit the ground and then settled back into a nice slide. There was no tendency to ground-loop. The only damage done was to the propeller tips and to the bomb-bay doors.

New propellers were soon installed, and the plane was flown back to Luke Field for repairs by the Hawaiian Air Depot.

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NICE GOING IN AN O-25 PLANE

In reading accounts of various flights in the News Letter, Kelly Field desires to submit the following as a mark for others to shoot at, in view of the fact that it was performed with obsolescent equipment - an O-25.

Captain R.E. Randall, on an extended navigation training flight between classes recently, was delayed by bad weather at Boston. In order to be back for the beginning of the new class on Monday morning, he departed from Boston at 7:15 a.m. on Sunday, and began bucking head winds which prevailed during the remainder of the flight to Kelly Field. After being delayed two hours in New York, he pushed steadily homeward. Daylight waned one hour east of Maxwell Field, and the remainder of the flight was made after dark, arriving at Kelly Field at 2:30 a.m. Monday morning. Continuous radio communication was maintained with Air Corps and Dept. of Commerce stations 80% of the time.

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COLOMBIAN TROPHY PRESENTED TO 3RD GROUP

Barksdale Field, Shreveport, La., was the scene on December 9th of the presentation of the Colombian Trophy to the Third Attack Group, GHQ Air Force, by Major General Frank M. Andrews, Air Corps. This beautiful silver Trophy, which was presented to the United States by Major Benjamin Mendez, of the Colombian Air Force, in the name of the Republic of Colombia, is to be awarded annually to the Group of the GHQ Air Force having the lowest accident rate per thousand hours of flying for the preceding training year. The Third Attack Group became the first custodian of the Trophy by virtue of having had only two accidents in 9,193 hours, a rate of .218 per thousand hours.

General Andrews flew from Langley Field to Barksdale Field in the giant Douglass command transport. He was accompanied by several GHQ Air Force staff officers, Private Hiette S. Williams, his co-pilot, and a crew chief. The General carried the Trophy in the plane with him to Barksdale Field.

In his speech of presentation, General Andrews said in part:

"Military flying is a dangerous profession. Accidents have always occurred and will continue to occur, but a certain proportion are preventable. We of the Air Corps gladly accept all necessary risks and, in spite of the loss of loved and respected comrades, we carry on.

In the past few years, airplane speeds have tremendously increased, due principally to greater horsepower and to cleaner design. Both of these factors have increased the danger incident to flying, for the reasonsthat greater horsepower requires more thorough understanding and greater care in engine operation; cleaner designs have raised the stalling speed and required the installation of flaps, and both factors have increased the number of cockpit gadgets and have made 'cockpit trouble' something that can be avoided only by the minutest care and attention to detail."

The presentation ceremony was followed by an inspection of the personnel of the Third Attack and Twentieth Pursuit Groups, and by an aerial review of both Groups by General Andrews and Brigadier General Gerald C. Brant, Third Wing Commander. Shortly thereafter, General Andrews and his staff left for Langley Field, where he resumed his duties at General Headquarters Air Force Headquarters.

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During November, 1936, the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, overhauled a total of 21 airplanes and 75 engines and repaired 17 planes and 25 engines.

FIELD EXERCISES BY 9TH BOMB. SQUADRON

The 9th Bombardment Squadron recently returned to Hamilton Field from a most successful field exercise at Stockton, Calif. Sixteen officers, five Flying Cadets and ninety-five enlisted men participated, and a week of perfect weather made possible a diversified, interesting and complete training maneuver. A very marked improvement in field technique is being accomplished with repeated practice. The smoothness of operation under field conditions is the result of the diligence, enthusiasm and hard work of all those participating.

Under the direction of Captain K.N. Walker, the 9th Bombardment Squadron participated in practice bombing, formation gunnery and interception problems. One of the most interesting missions was an attack against the target at Muroc Dry Lake. Nine B-10B airplanes, loaded with 300-pound "live" bombs, conducted the attack. Both day and night flying was conducted, and every mission was featured by a practice "Fog Flying Mission" for training in instrument flight. The procedure for this valuable training is becoming routine for this Squadron. At any time during the conduct of a mission, a fog condition is simulated. The squadron leader will announce a compass course, the duration of the flight and air speed, after which each pilot of the formation goes "under the hood" and, at one minute interval and designated altitudes, proceeds to the rendezvous. With practice, the maneuver is easily and successfully accomplished, and the training is invaluable.

Baseball and volleyball games, gas mask drills, and songs around night camp fires made the days busy, instructive and entertaining.

"The Stockton Chamber of Commerce, as well as many of the local business organizations did much to make the off duty hours most enjoyable," says the News Letter Correspondent, and he adds: "We have been assured that the welcome sign will always be out for the Air Corps at Stockton."

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The last few weeks of the past year were busy ones for the members of the 7th Bombardment Group at Hamilton Field, Calif. After completing maneuvers in the Pacific Northwest, all squadrons returned to their base and were immediately ordered to take to the field in individual squadron maneuvers, using different outlying fields as their base of operations.

Judging from reports and comments by the personnel of all the squadrons, much benefit was derived, both in military tactics and social contact.

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THE Hq. & Hq. SQUADRON, EIGHTH PURSUIT GROUP, GHQ AIR FORCE

This Squadron was organized September 1, 1936. The components from which the Squadron was created consisted of the 58th Service Squadron, the old Headquarters Detachment of the 8th Pursuit Group and various other units stationed at the Langley Field Air Base. Under the present reduced tables of organization, the Squadron at the present time consists of seven officers and 77 enlisted men. Of this number of officers, four are members of the Group Staff and three are in the Headquarters Squadron proper.

The squadron organization as it is set up by tables of organization consists of four main divisions as follows: Group Headquarters and Communications Section, Headquarters Section, Headquarters Squadron, Flight Section and Transportation Section.

First Lieut. John E. Bodle, Air Corps, is Commanding Officer of Hq. and Hq. Squadron, while 1st Lieut. D.D. Hale is Adjutant and Flight Commander, and 2nd Lieut. Joseph H. Wilson, Air Reserve, Supply and mess Officer, Assistant Flight Commander and Transportation Officer.

The Group Headquarters and Communications Section furnishes to the Group Commander all the personnel to operate Group Headquarters, such as administrative personnel, operations, engineering and technical, and communications personnel - 28 men.

The Headquarters Section of Headquarters Squadron constitutes the administrative personnel of the Squadron and includes the First Sergeant, personnel clerks, mess Sergeant and cooks - 14 men.

The Flight Section has the direct care and responsibility of the airplanes assigned for the use of the Group Staff officers. All classifications of trades specialists are carried in this Section, such as Airplane Mechanics, Engine Mechanics, Aircraft Metal Worker, Aircraft Instrument Mechanic, Technical Clerks, etc. - 18 men and 3 airplanes.

The Transportation Section has the care and responsibility of all the tactical transportation assigned to the Group. At the present time this consists of 27 pieces. As far as practicable, drivers for these vehicles are furnished from the men in the Section, but when the Group takes the field as a Group, other drivers have to be brought in as needed from the various squadrons - 16 men.

So much for the organization of the Squadron. Many interesting things are daily being done in the Squadron, of which a few may be mentioned, as follows:

At the present time the Squadron is maintaining an XA-14 airplane which has been loaned to the Group from Wright Field for certain tests to be accomplished under the direction of GHQ Headquarters. A bi-motored, low-wing monoplane of monocoque construction, all the wheels are fully retractable into the fuselage. It has two Wright "Whirlwind" twin-row motors and mounts a 37 mm. gun in the nose between the motors.

Two officers of the Squadron are members of the Group Intercept Board and are working daily on plans and methods to accomplish interceptions by Pursuit on aircraft. A great deal has been learned from the work so far, and the ability of the Board to direct and plot aircraft has increased by leaps and bounds. A system has been worked out and, with greater training on the part of the piloting personnel, a new and almost certain method of ground to air radio control will be an accomplished fact.

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AMATEUR RADIO STATION AT LANGLEY FIELD

Arrangements have been completed to establish an Army amateur radio station at Langley Field, Va., and the station is already in operation. Personal messages may be sent anywhere in the world at no cost whatever. The service will not be used for official purposes but only for the post personnel in their private communications.

While delivery is not guaranteed, the delivery percentage is reasonable compared with commercial service. For Panama, West Coast, Hawaii and the Philippines, the service is excellent, with deliveries nearly 100 percent. For China and Alaska there is fair service in 48 hours.

In general, the service is excellent to all large cities. Delays occur in delivering to small towns where no amateur station, Army or civilian, exists. In the latter case, the messages are mailed from the station nearest the destination. Messages to China must be sent only to personnel of the Army, Navy and Marines.

The station is operated voluntarily by Private William H. Stull, after his hours of regular duty, on the official Army radio net. Private Stull is willing to handle up to 50 messages a day in the order in which they are received.

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Ten new electric gun sights have been installed on P-26's of the 17th Pursuit Squadron, Selfridge Field, Mich., for service test. So far, tests have been conducted on tow targets only, due to the fact that the scheduled gunnery camp at Oscoda was cancelled. The annual ammunition allowance having been expended, consensus of opinion seems to be favorable concerning the new sights, and they are expected to give great improvement in firing on ground targets.

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31ST BOMBARDMENT SQUADRON IN MANEUVERS

The 31st Bombardment Squadron, stationed at Hamilton Field, Calif., recently completed its individual maneuvers, using as the base of operations the airport located at Fresno, Calif. Supplies were transported by plane on the morning of November 30th. Camp was established and a hot supper was waiting for the members of the truck train which arrived after dark.

One of the missions called for the camouflaging of one of the planes. The methods used to hide the plane will not be divulged, but the question - "Was there an airplane located at that spot," asked by a member of the Observation flight sent out to find the plane leaves little doubt as to the success of the methods used. The remainder of the maneuvers comprised routine Bombardment missions.

During the maneuvers, every airplane was available every day, this being made possible by the hard work of the maintenance crew, who worked at all hours of the day and night, simulating wartime conditions. Radio contact was maintained by the field radio station with Hamilton Field, and supplies were replenished without delay.

On Sunday, December 6th, the Squadron held open house for the City of Fresno. It is estimated that 25,000 people attended. "Too much cannot be said for the hospitality of the people of Fresno," comments the News Letter Correspondent. The members of the Squadron were entertained by Mr. McAlpine, a prominent citizen of the community, at a dutch supper. A grand time was had by all. The officers were guests at a dinner given by the Chamber of Commerce. Major Taylor expressed the appreciation of the 31st Squadron for the hospitality extended by the City of Fresno.

Camp was broken on December 8th, and the Squadron returned to Hamilton Field. The maneuvers were very profitable to the Squadron, not only in a military sense but socially as well, for many new friends were gained.

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NEW COMMANDER FOR HAMILTON FIELD

Colonel Davenport Johnson assumed command of Hamilton Field Air Base on November 19th, succeeding Colonel C.L. Tinker who, after completing 30 days leave, was scheduled to sail for New York and then proceed to Washington, D.C., to take up his new duties in the National Guard Bureau.

Colonel Johnson arrived at Hamilton Field in August and was placed in command of the 7th Bombardment Group, relieving Col. Tinker, who commanded both the base and Group forces. Lieut. Colonel G.E. Stratemeyer took over the command of the 7th Bombardment Group recently.

INTER-ISLAND FLIGHTS BY 72D SQUADRON

The 72nd Bombardment Squadron, Major Idwal H. Edwards, Air Corps, Commanding, took off from Luke Field, T.H., for Hilo, Island of Hawaii, on December 14th, with seven Keystone Bombers, two BT's and one escort Amphibian on one of the periodic inter-island training flights.

After a battle against a NE trade-wind of gale force for 4½ hours, the flight landed safely at its destination, 220 miles away. Anyone who has wrestled a walloping B-4A or B-5A across the Alleghenies on a windy day will have a faint idea of the activities of the pilots as they passed the lee of Maui.

The following day was spent in inspecting the natural wonders of Kilauea Crater and its surroundings. On December 16th, the Squadron split into two flights, five Bombers and the Amphibian returning as far as Suiter Field, Upolu Point, Hawaii, while the two remaining Bombers and the BT's, flown by pilots who were on their first inter-island flight, circled the island via Morse Field, South Cape, where a landing was made in the teeth of a 50 m.p.h. gale.

Describing the take-off, an observer said: "The Keystones, when given the gun, raised their tails to the position of 'Attention' and then jumped into the air." Enroute to Upolu Point along the Kona Point, a water spout was reported. After gassing at Suiter Field, the reformed Squadron took off and arrived at Luke Field without incident, covering the 180 miles in one hour and 30 minutes, which is pretty good for a Keystone, as veteran pilots, reminiscing over the long dead past, will recall.

Lieut. Colonel Millard F. Harmon, Jr., Air Corps, who recently assumed command of Luke Field, accompanied the 72nd Bombardment Squadron on this flight. This was his first visit to the outlying islands. The Colonel did not waste all his time looking down the empty throats of extinct craters, but took advantage of the opportunity to go out and bag a brace of pheasants.

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The 11th Bombardment Squadron went to Modesto, Calif., for field maneuvers, leaving Hamilton Field, Calif., December 4th and returning on the 10th. While there, a bombing problem was conducted, using 300-pound demolition bombs on a target at Muroc Lake. A gunnery mission, several combat missions and some night flying completed the tactical work from that field.

During the stay at Modesto, the Squadron was very fortunate in having good flying weather and a neat, well organized camp. The City of Modesto gave excellent cooperation to the Squadron in its work and, in addition, provided everyone with entertainment during the off duty hours.

GAS CONSUMPTION TESTS ON PB-2A AIRPLANES

The 27th Pursuit Squadron, GHQ Air Force, Selfridge Field, Mich., was recently engaged in gas consumption tests on its PB-2A airplanes. Under the direction of Lieut. W.R. Hunt, over 50 hours of flying was performed on this project. Data was obtained for different revolutions per minute, also on air speed and manifold pressure at various altitudes. This data was incorporated in a series of elaborate charts and graphs. All pilots of the Squadron had a hand in obtaining this data. Some of the flying missions necessitated the use of oxygen at the higher altitudes.

At this writing the 27th Squadron is busily engaged in making preparations for the winter tests which have been held in the past for quite a number of years. Just now nothing definitely can be stated as to where these tests will be held. The Commanding Officer, Major W. A. Maxwell, already has detailed officers to various jobs in connection with the preparations necessary for the tests. The issue of all the flying equipment and heavier winter clothing necessary is only one of the tasks to be accomplished. Cold weather maintenance of the airplanes will involve the use of engine covers and heaters, which are now being fabricated at Dayton, Ohio.

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AERIAL GUNNERY PRACTICE BY 94TH PURSUIT

Gunnery practice for the 94th Pursuit Squadron, GHQ Air Force, Selfridge Field, Mich., was in order for a period of two weeks recently. The organization was encamped at Camp Skeel, Oscoda, Mich., the locale of gunnery practice by the First Pursuit Group in years gone by.

The Squadron engaged in both ground and aerial gunnery. Both .30 cal. and .50 cal. guns were fired at ground targets, while only .30 cal. were used on the aerial targets.

For ground gunnery, frequent cross-winds made firing rather difficult. In spite of this fact, better than average scores were made. The aerial gunnery was carried out at the intermediate levels, that is, between the altitudes of ten and fifteen thousand feet. The first week was devoted to this type of flying, and all pilots filled their quota of intermediate firing.

The maneuvers were successful in every detail. The work in all departments went off smoothly, little difficulty being experienced with the equipment and there being no delays due to weather. The Squadron returned home happy that their mission was completed. The personnel felt satisfied that the training and practice which they obtained were invaluable.

ENLISTED MEN LEARN RADIO IN HAWAII

Fifteen enlisted men recently graduated from the Communications School of the 18th Composite Wing at Luke Field, T.H., and returned to their organizations at Luke and Wheeler Fields, where they will attempt to put into practice what has been preached for the last six months. The class originally contained twenty students before low grades began to take their toll.

Classes at the 18th Wing Communications School last six months, with two classes a year. Academic work closely follows that given at the Air Corps Technical School at Chanute Field, Ill., with the following subjects being taught: Electricity, Radio Theory, Antennas, Airplane and Ground Radio Sets of the latest available types, Trouble Shooting, Inspection Methods, Message Centers, Field Telephones and Interphones, Power Equipment and Shop. The average code speed of the class was 20.5 words per minute in five-letter code groups. Instruction in operating radio sets in the air was given, with each student averaging 3.8 hours' flying time as radio operators.

The following students completed the course and were graduated: Privates Green Ball, Roy Ball, Calvin C. Brant, Albert J. Bravo, George M. Beck, Arthur P. Coddington, William A. Cummings, Harold C. Fredericks, Alvin J. Lenox, Stanley A. Mokrozycki, Orle Straley, Saul Udman, Rudolph S. Van Meter, Rovert F. Young and Clarence Zielinski.

The 18th Wing Communications School is under the direction of 1st Lieut. Daniel A. Cooper, Air Corps, with Corporal Raymond L. Dickson and Private Alfred W. Pound as instructors.

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LIEUT. ZILER BRINGS HOME THE -- LAUNDRY

Second Lieut. John C. Ziler, Air Reserve, stationed at Selfridge Field, Mich., is being congratulated by radio fans of the field and laundresses on having established a new record for bringing in a towed target with the minimum altitude.

On December 14th (or was it the 13th?) Lieut. Ziler carefully flew his P-26C back to Selfridge Field with the aerial target in tow, and gracefully dropped the remnants of the frayed and tattered tow target. The elated 17th Pursuit Squadron is displaying the relic with pride as an example of their effectiveness in gunnery practice. Although there were no bullet holes in the target, Lieut. Ziler, in passing over the officers' quarters area, managed to bag three radio aerials and one clothes line (complete, with diapers).

NEW TEXT ON OBSERVATION AVIATION

Captain O.P. Weyland, Air Corps, Chief of the Observation Section, Air Corps Advanced Flying School, Kelly Field, Texas, recently completed a trip by air, during which he visited the Air Corps Tactical School, Maxwell Field, Ala.; the Infantry School, Fort Benning, Ga.; the GHQ Air Force Headquarters, Langley Field, Va.; the Coast Artillery School, Fort Monroe, Va.; Office of the Chief of the Air Corps and Office of the Chief Signal Officer, Washington, D.C.; the Command and General Staff School, Fort Leavenworth, Kansas; the Cavalry School, Fort Riley, Kansas, and the Field Artillery School, Fort Sill, Oklahoma.

Captain Weyland, who is now engaged in writing a new text on Observation Aviation for use at the Advanced Flying School, made this trip for the purpose of conferring with authorities at these schools and stations, to the end that the instruction at Kelly Field in cooperation between Observation Aviation and the various ground and air combat arms be coordinated and improved.

Rapid development of new combat equipment and changes in organization and tactics are materially changing the technique and tactical employment of Observation Aviation. The employment of Observation with an air force demands long-range equipment and special training, especially in navigation. The reorganization of army ground forces into smaller, highly mobile units, largely motorized, with accompanying mechanized forces, will increase the importance of close cooperation with Observation Aviation and will necessitate a high degree of training on the part of the Observation team.

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RECRUITING EASY FOR THIS SOLDIER

Several weeks ago, Private Jeff White, of Langley Field, Va., while visiting his home on pass, convinced two men that the Air Corps at Langley Field was the only opportunity left open for the young man of today. After being duly examined, the two applicants were accepted for enlistment.

Prior to Private White's departure, the Commanding Officer of Langley Field announced that every soldier was a potential recruiter, and that a five-day furlough would be granted to each soldier bringing in an applicant who was accepted for enlistment. This furlough is in addition to the 30 days each year, the amount of furlough time for securing recruits not to exceed ten days.

Receiving the reward of ten days justly due him, Private White returned to his home at Colerain, N.C. Knowing full well that any additional recruits that he brought in on this trip would avail him no more furlough time, he nevertheless decided to emerge from the retail market and handle only wholesale business hereafter.

Equipped only with an ordinary soapbox and the gift of oratory, he made his modest stand, and when he returned to Langley Field he wore a triumphant grin and had six more applicants in tow.

"One wonders," says the Langley Field Correspondent, "what would happen in regard to recruiting on this field if this man was permanently assigned to recruiting duty and would devote all his time in the pursuit thereof, instead of just rounding up eight or ten in his spare moments at home."

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SUB-ZERO ALTITUDE FLIGHT TO KELLY FIELD

Testing long non-stop flights through the sub-stratosphere, ten speedy Pursuit planes from Barksdale Field, La., landed at 12:15 p.m., December 18th, at Kelly Field. The aerial journey of 330 miles required two hours and 15 minutes, including a circle above San Marcos. Although no record was made by the Army planes, the flight was made at an altitude of between 21,000 to 22,000 feet.

The pilots were equipped with heavy leather flying suits, oxygen tanks, and leather face masks. The planes had supercharged engines.

Major Armin F. Herold, commander of the 20th Pursuit Group, who accompanied the flight, said the planes were in sub-zero temperatures for most of the distance, and that cities fifty miles away were visible from the high altitude. Leading the test flight, the first of this type to be made by the Third Wing of the General Headquarters Air Force at Barksdale Field, was Captain M.R. Nelson. The other pilots were Lieuts. W.R. Shephard, G.P. Disosway, D.M. Motherwell, William Eades, C.T. Edwinson, D.C. Strother, R.P. Cork and J.L. Gentry. After the planes were refueled and checked, Captain Nelson led his flight from Kelly Field at 7:15 p.m., via Dallas, for Barksdale Field.

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LANGLEY AIRMEN GO WEST FOR BIG BOMBER

The first ferry crew recently departed from Langley Field for Seattle, Wash., to obtain for the 2nd Bombardment Group the first of the YB-17's. Air Corps personnel comprising the ferry crew consisted of Major Barney M. Giles, Airplane Commander; Captain Cornelius E. O'Connor, co-pilot; 1st Lieut. William O. Senter, Navigator; Tech. Sgt. Charles E. Moslander, Radio Operator; and Master Sgt. Floyd B. Haney and Staff Sgt. Arthur Jolly, mechanics.

"It is not exactly known when the first plane will be ready to proceed to Langley Field," says the News Letter Correspondent, "but we are all looking forward to its arrival."

V-7197, A.C.

COSMIC RAY FLIGHTS

One purpose of the Stratosphere Balloon Flight, made in 1936 by the Army and the National Geographic Society, was to take and record measurements of cosmic ray intensities and influences at all altitudes from the ground to the highest altitude possible to attain, which was 72,395 feet. A good record was obtained from 16,000 feet up, but due to the very rapid ascent and to the loss of batteries which were released as ballast on the descent, no suitable record was obtained from the ground to 16,000 feet. To assist in completing the records, the Army Air Corps was again called upon to make flights for intermediate observations between the ground and 24,000 feet. The flights were made for the U.S. Bureau of Standards and Dr. W.F.G. Swann of the Bartol Research Foundation, at Swarthmore College, Swarthmore, Pa., near Philadelphia.

A Fairchild C-8, Bolling Field's photographic ship, was used to carry the necessary equipment, and was piloted by Captain H.K. Baisley, Photographic Officer at Bolling Field. The same plane was used by Captain Baisley while performing photographic work during the Stratosphere Balloon Flight. Four flights were required to make the necessary recordings, three of which have been completed. The first was a two-hour observation at 10,000 feet, which was made on December 21, 1936. The next day, a one-hour observation was made at 15,000 feet, and on the third day another one-hour observation at 20,000 feet. A fourth observation of 45 minutes' duration at 24,000 feet has yet to be taken.

An interesting account of these observations and their results will be published by Dr. Swann in a future issue of the National Geographic Magazine, along with many interesting photographs taken during the Stratosphere Balloon Flight.

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FIELD EXERCISE BY 88TH RECON. SQUADRON

The 88th Reconnaissance Squadron recently returned to Hamilton Field from a Field Exercise at Redding, Calif., participated in by the entire Squadron. Seven days were spent in the field, three of which were used for search and patrol missions based on an assumed situation, and two on reconnaissance and aerial photography. During the seven days, 162 hours and 45 minutes were flown, making an average of 6 hours and 19 minutes per airplane per day in commission. This was due to excellent weather and the complete cooperation of all members of this command.

The personnel were so busy that two invitations to dinner by the Chamber of Commerce and the Rotary Club had to be regretfully declined. On the last night, the officers of the District Headquarters, Redding CCC District, gave a dinner for the officers and cadets of the 88th Squadron which was thoroughly enjoyed by all.

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COLONEL TINKER LEAVES HAMILTON FIELD

If it had happened in the Philippine Islands it would have been called a despedida, and the well wishes of the other guests would have been expressed to the travelers with the native "Mabuhay." In Hawaii, it would have been called a luau, and that word which has often been called the tenderest of God-speeding farewells, "Aloha," would have sped the guest of honor on his way. But, whatever tongue you may express it in, it is doubtful if any can excel the good old American style in which Colonel C.L. Tinker, erstwhile Commanding Officer of Hamilton Field, Calif., was sped on his way at a farewell dinner given in his honor by the Medical Department at that station on the evening of December 15th.

On the right of the host, Major F.L. Pratt, M.C., sat Colonel Tinker, and on his left, Colonel Davenport Johnson, Air Corps, incumbent Commanding Officer of the Marin County Air Base. Mrs. Pratt occupied the hostess seat. Beside Col. Tinker sat Mrs. Johnson, and Mrs. Tinker was escorted to dinner by Colonel Johnson. Other guests included Colonel and Mrs. G.E. Stratemeyer, Major and Mrs. W.D. Vail, Major and Mrs. W.F. De Witt, Captain and Mrs. P.C. Gilliland, and Captain and Mrs. J.P. Smith. The enlisted men of the Detachment had as their guests Master Sergeant G.P. Klingler and Corporal J.J. Moran.

A surprise denouement occurred at the close of the dinner, when Master Sergeant A. Martin, Hospital Sergeant Major, played a phonograph record in his own resonant voice, bidding farewell to Colonel and Mrs. Tinker on behalf of the officers and enlisted men of the Medical Department. In it he requested Colonel Tinker to forever keep the record as a souvenir of their affection and esteem. Colonel Tinker was then presented with a departing gift in the form of a traveling case, completely equipped.

Colonel Tinker responded with a short acknowledgment of the gifts and said that both he and Mrs. Tinker would long remember the pleasure of their association with the personnel of Hamilton Field. Colonel Johnson was called upon and spoke briefly, expressing deep satisfaction with his new command.

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Major Christopher W. Ford (Captain) upon the completion of his present tour of duty in the Philippines, will assume the duties of Instructor, Air Corps, Ohio National Guard, Cleveland, Ohio.

Biographies

LIEUT. COLONEL HAROLD A. STRAUSS

Lieut. Colonel Harold A. Strauss, Air Corps, now on duty as Chief of the Procurement Section, Materiel Division, Air Corps, Wright Field, Ohio, was born in Ohio, September 11, 1887. Graduating from the U.S. Naval Academy June 6,1910, he was commissioned Ensign. He resigned from the Navy march 28, 1913, to accept on the following day a commission as 2nd Lieutenant, Coast Artillery Corps, U.S. Army. Colonel Strauss served with this branch of the Army until September,1920, when, at that time on duty as Assistant Chief of Staff for Military Intelligence, 2nd Corps Area, he was detailed to the Air Service and assigned to duty as a student at the Air Service Balloon School at Ross Field, Arcadia, Calif.

Upon the completion of the course of instruction at this school, he received the rating of Balloon Observer, as of April 26, 1921, and was then transferred to Langley Field, Va., for training at the Airship School. While a student at this school, Colonel Strauss also served as assistant to the Commanding Officer of the First Provisional Airship Wing.

Completing his training as an Airship Pilot, and receiving the rating as such, effective August 13, 1921, he remained at Langley Field, serving in the capacity of Assistant Commandant of the Airship School and later as Officer in Charge of Training, and as Instructor, until May 1, 1922, when he was transferred to the Engineering Division at McCook Field, Dayton, Ohio, and assigned to duty as Chief of the Lighter-than-Air Section.

Colonel Strauss commanded the Airship C-2 on its successful flight, in September, 1922, from Langley Field to the West Coast. Unfortunately, this airship, while being maneuvered from the hangar at Brooks Field, Texas, preparatory to the take-off on the return flight to Langley Field, was completely destroyed by fire caused by an explosion when an extremely strong gust of wind resulted in the ship breaking away from the maneuvering party, striking the steel framework of the hangar door, tearing the fabric and rupturing the gasoline tank.

In the summer of 1923, accompanied by Master Sergeant William J. Bennett, Col. Strauss piloted the Airship AO-1 and conducted the experiment of spraying a poisonous mixture on trees at Hennimer, New Hampshire, which were infested with the Gypsy Moth.

Transferred to San Antonio, Texas, in March, 1925, Colonel Strauss completed the special observation course at the Advanced Flying School, Kelly Field, Texas, and received the rating of Airplane Observer. In September, 1925, he was transferred to Scott Field, Belleville, Ill., where he served as Assistant Commandant of the Balloon and Airship School until November, 1926, and thereafter, until May, 1927, as Operations Officer of the 21st Airship Group and Senior Instructor of the Balloon and Airship School. For the next three years he was stationed at Kelly Field, Texas, being assigned to the 24th School Wing Headquarters and performing among various other duties those of post auditor.

In June, 1930, Colonel Strauss was assigned to duty as student at the Primary Flying School at Brooks Field, Texas. He completed the primary course in February, 1931, and the advanced course at the Advanced Flying School, Kelly Field, in June, 1931, whereupon he was given the rating of Airplane Pilot. On June 29, 1931, he reported for duty at Wright Field, Dayton, Ohio, and since that time his duties have been connected with procurement activities.

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LIEUT. COLONEL JOHN C. McDONNELL

Lieut. Colonel John C. McDonnell, now on duty with the 18th Pursuit Group at Wheeler Field, T.H., as Commanding Officer, is one of the veteran pilots of the Air Corps, he receiving his rating as Junior Military Aviator on September 1, 1916.

Born in Baltimore, Md., November 9, 1887, Col. McDonnell graduated from Loycla College with a B.S. degree in 1908. Prior to entering the military service he followed the profession of surveyor. On March 3, 1913, he accepted a commission as second lieutenant of Cavalry, U.S. Army. On December 9,1915, he was attached to the Aviation Section, Signal Corps, and reported on the 23rd of that month at the Signal Corps Aviation School at San Diego, Calif., for flying training, which he completed in August, 1916.

Assigned to duty with the 1st Aero Squadron, Col. McDonnell served with this organization both at Columbus, New Mexico, and for several months in Mexico with the Punitive Expedition under General Pershing.

Ordered, in April, 1917, to duty at Kelly Field, Texas, he served at this station as instructor in acrobatics and as Officer in Charge of Flying until July 7, 1917, when he was transferred to Chanute Field, Rantoul, Ill., where he also served as instructor in acrobatics as well as at Selfridge Field, Mich., to which station he was transferred on October 1, 1917.

At Ellington Field, Houston, Texas, to

which field he was transferred on December 23, 1917, Colonel McDonnell was Officer in Charge of advanced flying. He trained some of the flying instructors in acrobatics to start an acrobatic stage. Later he was in charge of all training and for a brief time commanded the post.

Transferred to Washington, D.C., in July, 1918, Colonel McDonnel, after being on several week's duty in the Training Section, Office of the Director of Military Aeronautics, was ordered overseas, serving as Commanding Officer of the 7th Aviation Instruction Center, and, from December 30, 1918, as Corps Air Service Commander, 3rd Corps, 3rd Army, at Niewied, Germany.

Upon his return to the United States in May, 1919, he was on duty for several months at Mitchel Field, N.Y., where he was in charge of recruiting and of all flying for recruiting purposes.

Ordered to Aberdeen Proving Ground, Md., in July, 1919, Colonel McDonnell commanded the Air Service troops at that station until June, 1921, when he was assigned to duty as Professor of Military Science and Tactics at the Mass. Institute of Technology, Cambridge, Mass. He occupied this position for two years, and during the summer vacation months he served as Executive Officer of summer training camps at Mitchel Field, N.Y.

Colonel McDonnell next completed a tour of foreign service in the Philippines, being on duty as Commanding Officer of Clark Field and the 3rd Pursuit Squadron until August, 1925, when he assumed command of Nichols Field and the 4th Composite Group.

Returning to the United States, he was assigned to the command of the 88th Observation Squadron at Fairfield, Ohio. From May to December, 1926, he was in command of a composite Air Service Squadron at the Exposition at Philadelphia, Pa. After duty as Air Officer of the 3rd Corps Area, Baltimore, Md., until June, 1928, Colonel McDonnell was transferred to Washington, D.C., for duty as Chief of the Personnel Division, Office of the Chief of the Air Corps.

Following the completion of his four-year tour of duty in Washington, he completed the one-year course of instruction at the Air Corps Tactical School at Maxwell Field, Ala., and the two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas, and was then ordered to duty in the Hawaiian Department.

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NEW CHAPLAIN REPORTS AT KELLY FIELD

Lieut. Colonel Raymond J. Griffin, C.C., who reported at the Advanced Flying School, Kelly Field, Texas, last month, succeeding Chaplain E.R. Martin, is - like his predecessor - a priest of the Catholic Church. He has served continuously in the Army as a chaplain for 21 years, but this is his first tour of duty at any place in Texas.

A native of Ireland, Chaplain Griffin was raised in New York and completed his religious education at the Catholic University of Washington, D.C. He was appointed Chaplain in 1917, and his first assignment was at Governors Island, N.Y. During the World War he went to France as Chaplain of the First Separate Brigade, Coast Artillery, having been promoted to the temporary rank of Captain. Later he became senior Chaplain of the Second Army. Colonel Griffin came to Kelly Field from the headquarters of the 3rd Corps Area at Fort George G. Meade, Maryland.

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RUSSIAN OFFICERS INSPECT KELLY FIELD

The Advanced Flying School at Kelly Field, Texas, was inspected on December 22nd, last, by four Russian officers. They were very much interested in our methods of training.

It was interesting to note that all these officers were rather youthful. The senior, a Brigade Commander in the Russian Air Force, was only 39 years of age. They were very cordial and told the following about their flying training:

Their course consists of two years, the first of which is devoted solely to ground training. The students complete their pilot training in the second year and graduate, with an average of only 65 hours, as qualified pilots of single-engined airplanes. In order to pilot multi-motored airplanes, they must serve as co-pilot in a tactical unit for two or three years.

Another interesting item was the rates of pay received by the Russian Air Force. The average pilot receives 50% more than a line army officer. Then a pilot of a fast airplane receives 25% more than the average pilot, while an instructor receives 50% more than the average pilot and takes two months' leave a year with all expenses paid.

They wondered why we didn't teach our students to do aerobatics close to the ground. They further stated that they used women pilots, and when there was any new difficult job to be done they had a woman do it first, in order to stimulate the men to do better.

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MORE NAVIGATORS FOR THE AIR CORPS

"A well earned Christmas present was handed out to eight Air Corps officers in the form of diplomas as Dead Reckoning and Celestial Navigators," reports the Mitchel Field Correspondent, who

adds that "these recent graduates of the Ninth Group Navigation School used various terminalogy in describing the final examination. However, the general concensus was that it was a 'humdinger,' producing several aggravated cases of writer's cramp. The graduation flight to Miami was postponed to a later date. Officers who received diplomas are: Major Duncan, Captains Valentine, Gibson, Denniston, White, Lieutenants Norstad, Beebe and Haskin. Our friend 'Dick' Gibson won the right to be valedictorian and went all the way to Mexico on leave to escape the 'honor.'"

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VARIED PLANES FOR HQRS. GHQ AIR FORCE

Staff officers at the Headquarters of the GHQ Air Force, Langley Field, Va., probably have one of the widest choices of airplanes to fly in the Army Air Corps. This not only facilitates their movements in covering GHQ Air Force activities in the continental United States but enlarges the training scope of pilots and mechanics of the Headquarters Squadron.

Planes now assigned this Squadron include the famous Douglas C-32 Transport, four new A-17 Attack planes which recently arrived from the Northrop factory at Inglewood, Calif., a Martin B-10B Bomber, the brand new Douglas B-18 Bomber, an O1-G Observation plane, and the record-breaking Douglas OA-5 Amphibian. The maintenance of these planes is under the supervision of Major Eugene L. Eubank, Squadron Commander and Headquarters Commandant.

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GENERAL BRETT VISITS KELLY FIELD

Brigadier General George H. Brett, Air Corps, Commanding Officer of the 19th Composite Wing, Albrook Field, Panama Canal Zone, who, with several other officers, had stopped at Randolph Field en route to Panama, visited Kelly Field to renew old acquaintances. Officers in the party included Lieut. Colonel Richard H. Ballard, commander of France Field; Major George H. Beverly, of Albrook Field; 1st Lieuts. Robert S. Israel, Jr., and Turner, of Albrook Field, the latter the engineer officer for the flight. The pilots had made a week-end flight from Mitchel Field, halting at Bolling, Langley, Maxwell and Barksdale Fields. The return trip to Panama was scheduled to be made by way of Brownsville, Tampico, Vera Cruz, Guatemala City, San Salvador, Tegucigalpa, Honduras; Managua, Nicaragua; San Jose, Costa Rica, and David, Panama. The flight to San Antonio consisted of the cargo plane, a Douglas Amphibian and a Bellanca. The planes were checked over at Duncan Field, where a second Amphibian was to be picked up for ferrying to Panama.

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SUB STRATOSPHERE FLIGHT BY 55TH SQUADRON

Supplementing the report on the high altitude flight made on December 15th last by the 55th Pursuit Squadron from Barksdale Field, La., to Kelly Field, Texas, and which appears elsewhere in this issue, the Barksdale Field Correspondent states:

Attaining an altitude of 21,500 feet 25 minutes after take-off at Barksdale Field, La., the 55th Pursuit Squadron, under command of Captain M.R. Nelson, engaged in a sub-stratosphere flight from Barksdale Field to Kelly Field to familiarize pilots with the use of oxygen and operation at high altitude.

The cross-country unit flight was composed of 9 airplanes of the P-26A type, equipped for the use of liquid oxygen, and made the trip the entire distance at the maximum altitude in exactly two hours for the 370 miles.

Maximum altitude was attained at a distance of 40 miles from Barksdale Field, 25 minutes after take-off. Visibility was reported exceptional at this altitude, cities and rivers being easily recognized at a distance of 100 miles. Although the use of the face mask and heaviest flying clothing was necessary, due to the sub-zero temperature encountered, no difficulties were encountered other than those by the Squadron Commander in turning about in his cockpit to check up on members of the flight. The maneuverability of the P-26A was found to be good at maximum altitude, and all equipment functioned satisfactorily according to reports of the personnel on the return flight.

It was found that a considerable reduction in time required for the servicing of the liquid oxygen equipment was possible by the use of several small containers, but this method required several litres more than the excess prescribed in the technical instructions. The equipment functioned perfectly throughout the flight.

The flight was believed to have been the longest made by a unit at maximum altitude in this section of the country. The Squadron returned at normal altitude after dark, non-stop via Fort Worth, Tex.

All pilots on the flight agreed in a general recommendation that enclosed cockpit airplanes with good heating facilities be furnished for future flights of this nature.

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The Airship TC-13 recently made two overnight flights from Moffett Field, Calif. On both occasions it followed the coast line north to the vicinity of Eureka before turning back. Major Elmer Bowling commanded the airship on the first flight, and Major Clarence B. Lober on the second.

18TH RECON. SQD. WORKING ON ALL CYLINDERS

In mid-December, the 18th Reconnaissance Squadron, Mitchel Field, N.Y., moved into its new offices and now, says the News Letter Correspondent, "it can be said that we are carrying on every activity but 'shuteye' and 'nose bagging' beneath the very wings of the airplane. Space to house the various activities was sort of 'chiseled' from the Base Paint and Dope Shop, and while the materials used in construction were temporary in nature, the Base Quartermaster is to be congratulated in relieving a very cramped situation. A higher degree of coordination and teamwork is expected within the Squadron as a result of having all activities concentrated."

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EMERGENCY FLIGHT UNDER ADVERSE WEATHER

Captain Harrison G. Crocker, Air Corps, with Lieut. C.R. Storrie as co-pilot, made an emergency flight on January 1st from Maxwell Field, Ala., to Bolling Field, D.C., for the purpose of bringing Major Thomas L. Gore, Medical Corps, to Walter Reed Hospital for treatment of injuries received in an automobile accident. The plane was a new Douglas C-33, and the flight of 750 miles was made in four hours through adverse weather conditions, the pilots not being able to see the ground after leaving Maxwell Field until they were almost within 100 miles of Bolling Field.

The Bolling Field ambulance was waiting for the plane upon arrival, and Major Gore, a litter patient, was taken to Walter Reed Hospital without delay.

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20TH PHOTO SEC. MOVES TO BOLLING FIELD

Effective January 1, 1937, the 20th Photo Section is moved from Randolph Field, Texas, to Bolling Field, D.C., where the men from that organization and the Bolling Field Photographic Department will be incorporated to function as a unit. The sixteen men transferred to Bolling Field included one Technical Sergeant, two Staff Sergeants, one Sergeant and twelve Privates, and will have reported for duty by January 10th, several members of the organization taking a ten-day delay enroute while traveling.

When completely organized, the 20th Photo Section will consist of twenty enlisted men and one officer, Captain H.K. Baisley, who is now Photographic Officer at Bolling Field. This increase of personnel for the Photographic Section will facilitate the handling of the ever increasing amount of work required of that department.

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THE SPECIAL WRIGHT FIELD NEWS LETTER

The Materiel Division was asked to produce a special Wright Field edition of the News Letter all by itself for the issue of January 1, 1937. Knowing the men behind the guns at the Materiel Division, we felt confident that they would produce the goods. Needless to say, they did, and how! News Letter readers will certainly testify to this fact.

From all standpoints - editorially, typographically and pictorially - the initial issue of the News Letter for the year 1937 was excellent. Those contributing towards its production have set a standard such as we jumble folks in the Chief's office cannot hope to emulate either at present or in the near future. We have not the facilities for work of this kind and, for reasons too numerous to mention, must carry on in our unostentatious way, always with the hope that what appears in the News Letter will prove of interest and profit to our readers.

In the not too distant future we expect at various times to knock on the door of other Air Corps field and activities and ask them to work up a special edition of the News Letter covering their particular functions. It is possible that Wright Field may have to look to her laurels.

Our most sincere congratulations are extended to the Materiel Division for its fine effort in connection with the January 1st issue.

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HIGH ALTITUDE FLIGHT BY LT. ROBERTSON

In recent performance flights in the 8th Pursuit Group, Langley Field, Va., Lieut. W.R. Robertson, Jr., Air Corps, of the 33rd Pursuit Squadron, GHQ Air Force, took his PB-2A airplane up to 39,200 feet, and flew at that altitude for approximately twenty minutes. Lieut. Robertson reported flight characteristics and position by radio every five minutes. After reaching 39,200 feet, Lieut. Robertson reported "frozen controls" - a very unpleasant situation at that altitude. The ship was in a climbing position, and Lieut. Robertson had to throttle back to lose altitude and descend to a warmer layer.

Comments the News Letter Correspondent: "Some say the controls were 'not frozen' but that the pilot was getting weak due to lack of oxygen. Either way, we still think Lieut. Robertson did a good job, 'frozen controls' or 'asleep'."

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LIEUT. COLONEL DUNCAN LEAVES LUKE FIELD

On December 1, 1936, another milestone was recorded in the history of Luke Field, T.H., when Lieut. Colonel Asa N. Duncan, Air Corps, relinquished command of the post and the 5th Composite Group to Lieut. Colonel Millard F. Harmon, Jr., Air Corps. Col. Duncan left for duty at March Field, Riverside, Calif. He availed himself of a leave of absence prior to reporting at his new station.

"It is with sincere regret that the personnel of Luke Field bid 'Aloha' to Lieut. Colonel and Mrs. Duncan," says the News Letter Correspondent, adding that "during the nearly two years that they have been with the Group they have earned the undying respect and affection of the members of the command.

During the period of Lieut. Colonel Duncan's command, many interesting events took place in which the 5th Composite Group had a part. Among the more important of these were the bombing demonstrations and tests for the Department Commander in the Spring of 1935, and the bombing of the lava flow on Mauna Loa during the first week of January, 1936. This highly successful operation, which attracted world-wide attention, was personally led by Lieut. Colonel Duncan. Subsequently the 5th Composite Group played an effective part in the Department Maneuvers of 1936, and more recently in the Hawaiian Department Military Competitions held in November. In addition, numerous special missions were successfully accomplished, such as seed sowing from the air, reconnoitering wild sheep on Hawaii and other projects in cooperation with the Territorial Government.

The 5th Composite Group welcomes its new Commanding Officer, and with confidence born of past accomplishments assures Lieut. Colonel Harmon of its best wishes and whole-hearted support."

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OBSERVATION TRAINING AT KELLY FIELD

Student pilot-observer teams of the Air Corps Advanced Flying School at Kelly Field, Texas, have recently gained valuable experience in reconnaissance flights over the maneuver areas in and near Fort Sam Houston. Through permission granted by Major General Brees, Commanding General of the 8th Corps Area, student flyers of the Observation Section observe and report by radio positions and activity of Infantry and Artillery units of General Parson's 2nd Division at all possible occasions when exercises are being conducted. The Fort Sam Houston regiments in action, in the field, in concealment or on the march, thus afford the best of opportunities for training for the air observers.

BELGIANS STUDY AVIATION AT SAN ANTONIO

Many of the advances made in American civilian and military aviation will be introduced into the aerial defenses of Belgium, according to Lieut. General Maurice Gilleaux, Commander of the Belgian Air Force, who completed an inspection at Kelly and Randolph Fields on December 10th, last. Accompanied by his aide, Lieut. Viscount Eric Stoelberch, the Belgian commander came to the United States two months ago to study the various phases of American aviation. The two visitors left San Antonio for New York City by commercial plane.

General Gilleaux stated that no comparison can be made between military aviation here with that of Belgium because of the difference in population. However, he commended the plan of instruction at both the Air Corps Primary and Advanced Flying Schools and praised the manner in which Kelly Field was maintained, despite the fact that many of the buildings were constructed in 1917 when the field was laid out.

General Gilleaux declined to comment on the European situation, declaring that he had been out of touch with affairs since coming to this country. He was noncommittal as to the possibilities of a European war. The Commander, a major in the Artillery during the World War, entered the Belgian Air Force eight years ago.

At Randolph Field, Lieut. Colonel T.W. Hastey, Executive Officer of the Air Corps Training Center, conducted the two visitors on an inspection of the Primary Flying School on December 9th, and Col. E.A. Lohman, Assistant Commandant of the Advanced Flying School, and Captain W.G. Bryte, Secretary, conducted the inspection at Kelly Field the following day.

The Belgian Air Force Commander and his aide have visited most of the Army aviation fields, several Navy airdromes, and a number of civilian airplane factories. They had just completed a study of March Field, Calif., before coming to San Antonio. They were scheduled to sail for Belgium shortly following their arrival in New York City.

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The Barksdale Field Correspondent states that January always brings forth a great crop of "sweaters" among the second and third grade enlisted men. The Technical Sergeant and Master Sergeant promotion list is due for publication, and every issue of the Air Corps News Letter, the Army and Navy Register or the Army and Navy Journal finds a long line waiting for a peek. First Sergeant Rowen and Staff Sergeant Healey lead the line - always.

Ed Note: Barring unforeseen circumstances, it is expected to publish the Technical Sergeant [illegible] Promotion List in the next issue of the News Letter - February 1, 1937

OBITUARIES

An airplane accident on January 1st resulted in the death of Lieut. Colonel Frederick I. Eglin, Air Corps, pilot, and Lieut. Howard E. Shelton, Jr., a naval officer, who was a passenger in the plane. Colonel Eglin was enroute from Langley Field, Va., to Maxwell Field, Ala. The wreckage of the airplane was found near the top of Cheaha mountain, highest of the Appalachian peaks in Alabama, fifty miles from Birmingham. It was believed that the accident occurred at 3:00 p.m., at which time a heavy rain was falling and a thick fog hung over the mountainous area.

Colonel Eglin was a veteran Army flier who piloted planes in the World War. A native of New York, he was born on February 23, 1891. Prior to his entry into the Federal military service, Col. Eglin served as Private, Corporal and Sergeant in Company B, 2nd Indiana Infantry, from March 1, 1911, to March 4, 1914. From March 6, 1914, to April 16, 1917, he was Regimental Sergeant Major, 2nd Indiana Infantry. Mustered into the Federal service June 9, 1916, Col. Eglin served on the Mexican Border until mustered out of the Federal service February 28, 1917. On April 16th of that year he was commissioned a second lieutenant, Indiana Infantry. In that month he was attached to the Aviation Section, Signal Corps, U.S. Army, and assigned to the Aviation School at San Diego. Calif., for flying training. He completed this training on July 20, 1917, and was rated Junior Military Aviator September 11,1917.

In November, 1917, he was attached to duty with the 142nd Aero Squadron. He was appointed 1st Lieut. (temporary) in the Signal Corps, U.S. Army, December 15, 1917, and was promoted to Captain, Air Service, October 1, 1918.

On December 6, 1917, Col. Eglin was assigned to duty as Assistant Engineer Officer at the Signal Corps Aviation School at San Diego, and from February 1, 1918 to May 24, 1918, he was Assistant to the Officer in Charge of Flying at Rockwell Field, Calif. Transferred to March Field, Calif., he performed the duties of Assistant Engineer Officer and Assistant Officer in Charge of Flying until December, 1918. In January, 1919, he was assigned to duty as Aero Supply and Disbursing Officer, and Acting Motor Transport Officer, in addition to a variety of other functions at the post, these including the position of Officer in Charge of Flying and the temporary command of the field.

On December 10, 1921, Col. Eglin was transferred to Mather Field, Calif., where he commanded the 9th Squadron as well as the post until May 4, 1922, when he was assigned to duty as Operations Officer.

Transferred to foreign service, he was on duty with the 28th Bombardment Squadron at Clark Field, P.I., from September, 1922, to December 12, 1922, when his station was changed to Nichols Field. Here he performed the functions of Post Adjutant, in addition to other duties, among them those of Operations Officer of the 4th Composite Group, until September 2, 1924, when he was transferred to Kelly Field, Texas. From December 1, 1924, to December 2, 1926, Col. Eglin commanded the 40th School Squadron, in addition to serving as Adjutant, Supply Officer and Mess Officer. He was then detailed as Director of Bombardment in the Advanced Flying School. On August 12, 1927, he was assigned to duty as Executive Officer of the Air Corps Training Center, Duncan Field, Texas, and he occupied this position until August 22, 1929, when he was assigned as student at the Air Corps Tactical School, Langley Field, Va. Upon his graduation from this school in June, 1930, he pursued the two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas. His graduation from Fort Leavenworth in June, 1932, was followed by his assignment to duty as Instructor at the Air Corps Tactical School, Maxwell Field, Ala. In July, 1936, he was assigned to duty at Langley Field, Va., with the GHQ Air Force.

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Misfortunes never appear to come singly. On January 4, 1937, an aircraft accident at Rantoul Ill., resulted in the death of Captain Reginald R. Gillespie and Technical Sergeant Clarence E. Sudduth, Air Corps.

Captain Gillespie was born at Lake Center, Iowa, December 1, 1901. He attended high school in several cities in Montana and later attended the University of Montana for nearly three years.

Qualifying for a Flying Cadet appointment, he began lighter-than-air training at the Balloon and Airship School, Scott Field, Ill., in September, 1923. Successful in the competitive examination for a commission in the Regular Army, he was appointed a 2nd in the Air Corps, June 15, 1924. Upon his graduation from the Balloon and Airship School, Capt. Gillespie was rated Airship Pilot and Balloon Observer, effective August 23, 1924. He remained on duty at Scott Field, serving with the 8th Airship Company to May 18, 1925, and with the 9th Airship Company until the following September, when he reported to the Primary Flying School, Brooks Field, Texas, for heavier-than-air training. His training delayed due to injuries received in an aircraft accident, he completed the primary instruction in September, 1926, and was then transferred to the Advanced Flying School, Kelly Field, where, in March, 1927, he completed the special course for Airplane Observers. He was then transferred to Langley Field, Va., and assigned to duty with the 19th Airship Company.

Ordered to duty in the Hawaiian Department, Captain Gillespie served with the 4th Observation Squadron in July, 1928; with the 72nd Bombardment Squadron to October 2, 1929, and again with the 4th Observation Squadron until August, 1930. During his two years of duty at Luke Field, he performed various duties, such as Squadron Adjutant, Supply Officer, Mess Officer, Communications Officer and Parachute Officer.

Captain Gillespie reported for duty with the 47th School Squadron, March Field, Calif., as Personnel Adjutant, in September, 1930. In

July, 1931, he was assigned to duty at Langley Field, Va., with the 19th Airship Company as Supply Officer. Later he performed the duties of Operations and Engineering Officer, Armament Officer and Communications Officer. For several months in the year 1933, he served as Adjutant of a C.C.C. Company at Fort Meade, Md.

Detailed to pursue the course in heavier-than-Air flying, Captain Gillespie reported in June, 1935, at the Primary Flying School, Randolph Field, Texas. He completed the primary flying course in February, 1936, and the advanced course at Kelly Field, Texas, in June, 1936, specializing in Bombardment Aviation and receiving the rating of Airplane Pilot, effective June 17, 1936. He was then assigned to duty at the Air Corps Technical School at Chanute Field, Rantoul, Ill.

Sergeant Sudduth was born March 22, 1900, at Ridge Farm, Ill. He enlisted in the Air Service February 21, 1922; served at Langley Field, Va., to September 1, 1922; with the 1st Pursuit Group at Selfridge Field, Mich., to July, 1925, when he was transferred to Chanute Field, Rantoul, Ill., where he completed the coursesat the Technical School in Engine and Airplane Mechanics. He was appointed a Staff Sergeant in February, 1925, and Technical Sergeant in July, 1930. From June, 1931, to July, 1934, he served in the Philippines, first with the 2nd Observation Squadron and later with the 66th Service Squadron, at Nichols Field. Returning to Chanute Field, he graduated in April, 1936, from the Technical School as an Aircraft Armorer. He was then assigned to duty with the Headquarters and Headquarters Squadron at Chanute Field.

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

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NEW INSIGNIA FOR 32ND BOMBARDMENT SQUADRON

By the News Letter Correspondent

The mighty Martin Bombers of the 32nd Squadron of March Field have just blossomed forth with the new Squadron insignia.

Since its original organization at Kelly Field, Texas, June 13, 1917, and throughout its service overseas during the World War, the Squadron has been without such an insignia. After the Squadron was reconstituted and made active on June 24, 1932, many original ideas concerning an appropriate design that would embody the various activities of the Squadron were submitted. The problem of representing the bombing, gunnery and navigational phases of training of the Squadron was a difficult one. Finally, in October, 1936, by combining several designs submitted by Mr. H.F. Lambert, a St.Louis commercial artist, the present insignia was completed and accepted.

The design is triangular in shape. In the upper half of the triangle, signifying winged destruction, is an emblematic bird grasping two bolts of lightning. In the lower half of the triangle is a bomb superimposed upon the mariners' star, thus grouping together the dual training of the Squadron - training in Bombardment Aviation and in methods of aerial navigation. With this dual mission in mind and with thoughts towards the future when, with planes of even greater radii of action, navigation will constitute a larger part in the successful completion of bombing missions, it is deemed most appropriate that the insignia symbolize these two important functions.

The insignia employs the four basic colors of blue, green, yellow and white. Against a blue background the white emblematic bird is readily discernible. The color scheme is well blended and the insignia presents, as a whole, a pleasing picture.

If the past is any criterion, the new insignia will have its introduction to most sections of the country within a short time. The 32nd Squadron is active in all maneuvers in which Bombardment Aviation is employed and, whether it be Alaska or Florida, the 32nd will be there.

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NARROW ESCAPE FOR COL. STRATEMEYER AND HIS CREW

Lieut. Colonel G.E. Stratemeyer, the new Commanding Officer of the 7th Bombardment Group, and his crew, had a very narrow escape from death or serious injury when, after completing a training flight over the Bay area, he was forced to land in the mud flats of San Pablo Bay. He had circled Hamilton Field in preparation for a landing when one motor cut out, to be followed immediately by the failure of the other. Not having enough altitude to make the field, he was forced to set the ship down in the shallow water about one mile from shore.

The Colonel and his crew, which was composed of Lieut. R.H. Lynn, Sergeant H.W. Elliot and Private E.C. Thompson, were rescued, uninjured, by members of the field's "Crash Boat." The airplane, "The Bird O'Prey, XIII," was formerly flown by Colonel C.L. Tinker, until recently Commanding Officer of Hamilton Field, and was one of the Martin B-10B Bombing planes.

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AIR CORPS OFFICERS ASSIGNED TO ARMY WAR COLLEGE

Special Orders of the War Department, recently issued, detailed ten Air Corps officers to attend the 1937-1938 class at the Army War College, reporting for this duty between August 16 and 21, 1937. These officers are:

Colonel Henry W. Harms (Lieut. Colonel), Commandant, Air Corps Primary Flying School, Randolph Field, Texas.

Major John DeF. Barker (Captain), Major Warren R. Carter (Captain) and Major Lawrence P. Hickey, all of Langley Field, Va.

Major Harry A. Johnson (Captain) Barksdale Field, La.

Major Austin W. Martenstein (Captain) Air Corps Tactical School, Maxwell Field, Ala.

Lieut. Colonel Hubert R. Harmon, March Field, Calif.

Major Alfred J. Lyon (Captain) student at Army Industrial College, Washington, D.C.

Major John Y. York (Captain) Office of Assistant Secretary of War, Washington, D.C.

Major Idwal H. Edwards, Hawaiian Department.

RETIREMENTS

Warrant Officer Eugene C. Braig first entered the service of the United States Army on May 1, 1894, and since that date served continuously, as follows:

Second United States Artillery.

Sergeant, 7th United States Artillery.

Transferred in rank to United States Military Academy Detachment, Field Artillery, August, 1900.

Appointed First Sergeant of that Detachment, August 6, 1900, and continued in service until November 18, 1917.

Commissioned Captain, Aviation Section, Signal Corps, November, 1917.

Assigned to Hazelhurst Field, L.I., New York, as Commanding Officer, 213th Aero Squadron.

Transferred to Ground School, School of Military Aeronautics, Princeton University, December 14, 1917, as head of Military Detachment and Inspector of Ground Schools.

Transferred from Princeton University to Austin, Texas, for the Ground School there.

Closed that school and transferred to Bolling Field, D.C., in March, 1919, where he served as Supply Officer, Finance Officer, Quartermaster, Transportation Officer and Morale Officer until December 31, 1920.

Reenlisted as Technical Sergeant, 99th Squadron, Air Service, January 1, 1921.

Discharged January 2, 1921, and appointed Warrant Officer, U.S. Army, January 3, 1921, and transferred to Langley Field, Va., January 19, 1921, serving thereat to the present time.

During the period of the World War, Warrant Officer Braig's major service was rendered in the capacity of Commandant of Cadets at the School of Military Aeronautics, Princeton University. Serving on this important assignment, he was responsible for the initial basic military training of all cadets attending that institution, many of whom received commissions as officers in the Air Service and served with distinction overseas throughout the period of the World War.

Warrant Officer Braig is advanced on the retired list to the grade of Captain.

Master Sergeant Andrew May, who was recently placed on the retired list, was born February 11, 1885, at Nakofalva, Austria Hungary.

Enlisting in the United States Army, July 11, 1905, he served with the 2nd Coast Artillery Company continuously until July, 1920. Then serving in the Philippines, he joined the Air Service and was assigned to the 27th Balloon Company. Returning to the United States in April, 1922, he served for a short period at Crissy Field, Calif., and, in July, 1922, was transferred to Rockwell Field, Calif., serving with the 11th Bombardment Squadron until August 26, 1926, when he was transferred to the 59th Service Squadron. He joined the 95th Pursuit Squadron in June, 1928, served three years with that organization. From July, 1931, to June, 1932, he served with the 11th Bombardment Squadron, and then with the 30th Bombardment Squadron to the date of his retirement.

Master Sergeant May was appointed a Sergeant during his second enlistment. He was promoted to Staff Sergeant in September, 1920; to Technical Sergeant in August, 1926, and to Master Sergeant in June, 1931. All of his discharge papers have been characterized by the word "Excellent."

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EXTENDED ACTIVE DUTY FOR AIR RESERVE OFFICERS

The following-named Second Lieutenants of the Air Reserve have been placed on extended active duty at the stations indicated, their service to expire on the dates given:

Angle, Robert S., Hawaiian Dept. Oct. 14,1939
Altman, Dale Ellis, Hawaiian Dept. June 15,1939
Barton, Joe Earle, Langley Field, Oct. 14,1939
Bates, Earle Eugene,Jr. Hawaii, June 30, 1939
Bernard, Homer D., Panama Canal Dept. June 15,39
Berry, Jack Wilson, Hawaiian Dept. June 30,1939
Borden, Mitchell P., Langley Field,Dec. 14,1939
Boutz, William Ray, Hawaiian Dept. June 15,1939
Bullock, Cady R., Hawaiian Dept. June 15, 1939
Callish, Norman Louis, Hawaiian Dept. June 15,39
Campbell, Blaine B., March Field, June 30,1939
Capp, Wm. Charles, Hawaiian Dept. June 15, 1939
Cheatwood, John H. Hawaiian Dept. June 15, 1939
Clark, Glenn Clair, Panama, Nov. 1, 1939
Cochran, James C. Hawaiian Dept., June 15, 1939
Cocke, Wm. Alexander,Jr. March Field,Nov.20,39
Coddington, Nathan H., Hawaiian Dept. June 15,39
Councill, Wm. H. Hawaiian Dept. June 15, 1939
Culler, Harry Hillus, Ft. Bragg,N.C.,Dec.14,39
David, Wm. Bell, Selfridge Field, June 30,1939
Denison, Howard C. Hawaiian Dept. Aug. 6, 1939
Dennison, Julius W. Jr. Selfridge Field, July 1, 1939.
Diehl, Donald B. Panama, October 25, 1939
Dietz, Harold L. Mitchel Field, Nov. 14, 1939
DuFrene, John L. Jr. Hawaiian Dept. June 30, 39
Fernald, Wm. Irvin, Hawaiian Dept. June 15,1939
Fisher, Charles E. Hawaiian Dept. June 15, 1939
Furlow, James W. Langley Field, Jan. 3, 1940
Gorman, Edmund Theodore, Hawaii, Oct. 14, 1939
Gray, Frederick C.,Jr. March Field, June 15,1939
Haynes, Frank V. Pope Field, June 15, 1939
Hatcher, George A. Selfridge Field, July 1,1939
Higgs, Frank Lott, Hawaiian Dept. June 15, 1939
Hilkes, Clarence Wm. Hawaiian Dept. June 15,1939
Holloway, Benj. G. Hawaiian Dept. Aug. 6, 1939
Hoyt, Stanley C. Hamilton Field, Oct. 14, 1939
Hurst, Herman E. Patterson Field, Jan. 3, 1940
James, Weldon M. March Field, June 15, 1939
Joyce, Edwin A. Langley Field, Oct. 14, 1939
Kinkel, Ross S. Hamilton Field, Oct. 14, 1939
Kreps, Kenneth Ray, Hawaiian Dept. June 15, 1939
Kuhn, David B. March Field, June 15, 1939
Marks, Jack S. Hawaiian Dept., June 30, 1939
Martin, Robert Kay, Hawaiian Dept. June 15,1939
Mason, Ben A., Jr. Hawaiian Dept. June 15, 1939
Nightingale, Frank N. Hawaiian Dept. June 15,39
Olson, Abraham D. Hawaiian Dept. June 30,1939
Paul, Franklin K. Panama, Oct. 14, 1939
Penland, Hugh B. Hawaiian Dept. June 15, 1939
Polhamus, Robert G. March Field, June 30,1939
Rambo, Wilkie A. Panama, June 30, 1939
Rankin, William Q. March Field, June 15, 1939
Rendle, Irvine A. March Field, June 15, 1939
Schmid, Clarence L. Hamilton Field, June 30, 39

Schofield, Thomas J. Mitchel Field, Jan. 3,1940
Sewart, Allen Jackson,Jr. Panama,Oct. 31, 1939
Shedd, Morris H. Panama, Oct. 25, 1939
Smith, Jess Anders, Hamilton Field, June 15,39
Stewart, John P. Hawaiian Dept. June 15, 1939
Thomas, Joseph A. Hawaiian Dept. June 15,1939
Waterman, Paul, Hawaiian Dept. July 1, 1939

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WAR DEPARTMENT SPECIAL ORDERS

Changes of Station: To Hawaiian Department: Major William J. Hanlon (Captain) from Wright Field, sailing about March 18, 1937; 2nd Lieut. Louis W. Proper, from Hamilton Field; 1st Lt. Dale D. Fisher, from Langley Field; Warrant Officer Arthur R. Trabold, from San Antonio Air Depot.

To Langley Field, Va.: 1st Lieut. Harold W. Bowman, from the Philippines.

To Panama Canal Zone: 1st Lieut. Norman B. Olson from Randolph Field; Warrant Officer Vernon L. Roberts, from Kelly Field.

To Bolling Field, D.C.: Captain Howard M. Turner, from Primary Flying School, Randolph Field; 1st Lieut. Jesse Auton from 17th Attack Group, March Field

To Randolph Field, Texas: Major William C. Morris, from duty as Instructor, 37th Division, Ohio National Guard, Cleveland, Ohio.

To Moffett Field, Calif.: Major Bushrod Hoppin, from duty with Organized Reserves, 5th Corps Area, Lunken Field, Ohio.

To Cincinnati, Ohio: Captain Joseph P. Bailey, from Randolph Field, for duty with Organized Reserves, 5th Corps Area, Lunken Airport.

To Coronado, Calif.: Warrant Officer Leland D. Bradshaw, from Hamilton Field, to Rockwell Air Depot.

To Mitchel Field, N.Y.: 1st Lieut. Arthur W. Meehan, from Randolph Field; 1st Lieut. Emmett O'Donnell, Jr., from Selfridge Field.

To Chanute Field, Ill.: 1st Lieut. Carl W. Carlmark from duty as student, Armament Course, Air Corps Technical School, Chanute Field.

To Mitchel Field, N.Y.: 1st Lieut. Dwight Divine, II, from Panama Canal Department.

To Washington, D.C.: 2nd Lieut. John G. Benner, Selfridge Field, to Walter Reed General Hospital for observation and treatment.

RELIEVED FROM ASSIGNMENT TO AIR CORPS: 2nd Lieut. Frederick C. Bothwell, Jr., from Air Corps Training Center, Randolph Field, to 2nd Division, Fort Sam Houston, Texas.

ORDERS REVOKED: Assignment of 1st Lieut. James P. Newberry from Brooks Field to Panama Canal Department; assignment of 1st Lieut. C.H. Rees, Langley Field, to duty as student in Armament Course, Air Corps Technical School, Chanute Field, Ill.

PROMOTION: Captain William L. Boyd to Major (temporary) with rank from December 9, 1936.

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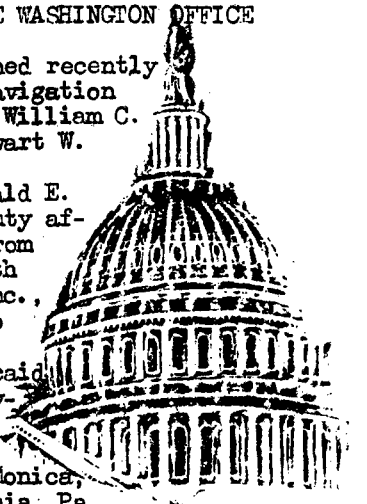
Second Lt. Bierne Lay,Jr., Air Reserve, of Charlottesville,Va., was ordered to active duty for 3 years from January 15, 1937, at Langley Field, Va. For some time past Lieut. Lay has been on the editorial staff of SPORTSMAN PILOT, and some very interesting and well written aviation stories from his facile pen have appeared in this aviation magazine and other periodicals.

NOTES FROM THE WASHINGTON OFFICE



Officers who returned recently from cross-country navigation flights were Colonel William C. McChord; Captain Stewart W. Towle, Jr.

Lieut. Colonel Gerald E. Brower returned to duty after a ferry flight from the plant of the North American Aviation, Inc., Inglewood, Calif., to Atlanta, Ga.

Major Alvan C. Kincaid returned from a ferrying flight from the plant of the Douglas Aircraft Co., Santa Monica, Calif., to Philadelphia, Pa.

Lieut. Colonel Rosenham Beam ferried a plane to Boston, Mass., from the plant of North American Aviation, Inc., Inglewood, Calif. Major Morton H. McKinnon ferried a plane from that factory to Selfridge Field.

Lieut. Colonel Ross G. Hoyt left January 5th to ferry to Boston a plane from the Douglas Aircraft factory, Santa Monica, Calif. Captain Angier H. Foster left January 7th on a ferrying mission similar to that of Col. Hoyt.

Lieut. Colonel Harry H. Young returned from temporary duty at Westfield and Newark, N.J.

Major Alfred W. Marriner, Captains Evers Abbey and Mervin E. Gross returned recently from temporary duty at Wright Field, Ohio.

Major Charles Y. Banfill ferried a plane for the Connecticut National Guard, Hartford, Conn., from the Douglas Aircraft factory.

Officers in the Chief's Office who recently returned from leave were Majors David A. Myers, Karl S. Axtater and Captain James W. Spry.

Recent visitors to the Chief's office during the course of navigation flights or while on leave were Major Harry A. Halverson from the Command and General Staff School, Fort Leavenworth, Kansas; Captain Haynie McCormick from Scott Field, Ill.; Major William W. Welsh and 1st Lieut. George McCoy, Jr., from Maxwell Field, Ala.; 1st Lieut. Paul T. Cullen from Mitchel Field, N.Y.; 1st Lieut. Pearl H. Robey from Wright Field; Captain Howard M. Turner, Randolph Field, and 1st Lieut. Jesse Auton, prior to reporting to duty at Bolling Field; and Colonel Clarence L. Tinker, transferred from Hamilton Field to Washington for duty in the National Guard Bureau.

Major Edward V. Harbeck, Jr., recently returned from an Inspection trip.

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Captain James R. Anderson, Ordnance Department; 2nd Lieut. Jack W. Hickman, Corps of Engineers, and 2nd Lieut. John K. Brown, Jr., Field Artillery, were transferred to the Air Corps on December 23, 1936. Upon the completion of their present course of instruction at the Advanced Flying School, Kelly Field, Texas, about February 15, 1937, Captain Anderson will proceed to the Hawaiian Department for duty with the Air Corps, as will Lieut. Hickman, while Lieut. Brown will proceed to Brooks Field, San Antonio Texas, for duty.

FOREIGN OPINIONS ON AVIATION, PRESENT AND FUTURE
From the Italian aeronautical journal "ALA D'ITALIA"
A continuation from the December 15th issue

GIUSEPPE GABRIELLI
of the "Aeronautica d'Italia - Fiat"

Only metals have the vast range of mechanical characteristics which is necessary for materials employed in aeronautical construction. The problems of rigidity, vibration, inderformability and durability are completely solved by metals only. For small and medium planes wood was all right in the past, but the progress attained by modern constructional technics cannot tolerate any longer the use of such material, with which it will never be possible to attain the best ratio between the empty weight and the useful load. Weight is everything in aviation.

In some special constructions the use of wood is quite impossible, that is in the case of small single seaters like fighting and racing planes. Even the change from biplanes to monoplanes (the latter has now nearly conquered the whole field of aeronautical construction) has all the more brought to the fore the necessity of using metal, because monoplane wing problems, particularly when high speed is needed, may only be solved with all-metal wing.

If one looks back at the aeronautical constructions of the past, one can see how wood has been gradually replaced as a consequence of the progress of technics. Several years have been necessary to remove the prejudice in regard to the use of metals. One was the excessive cost. Really this had its origin from the fact that metallic construction was too often realized according to constructive ideas and design derived from the wooden structures. The result was an irrational metallic construction which was too costly. For the same reason metallic constructions were said to be slower than wood construction.

A particularly useful material for aeronautical constructions is duralumin, which alone represents about 90% of the metals employed. In many special cases light aluminum are preferred whilst high resistance steel is useful for stressed structural-welding. Steel is valuable for welded framework, undercarriages and support parts. In the case of civil airplanes, the duralumin is specially useful for the construction of monocoque fuselages, with great advantage over the other types of structures, because it easily allows the interior of the cabin to be lined with thermo-acoustic materials and makes it possible to use the whole volume and lastly is very light.

As regards the wings, the monoplane formula is now indisputed and is applied to the large, medium and small planes as well. The construction of such cantilever wings found its finest solution in the one-piece wing which during 16 years of hard work on the part of technicians all over the world has been more and more perfected. Although today it is nearly perfect, it constitutes for the future one of the largest fields of study which will give more satisfactory results, and emphasize the characteristics of metals.

For all these reasons we can safely say that the aeronautical material of the future is the "duralumin" and that in the always extending and rational use of light aluminum alloys the aeronautical constructions will find the most precious means for progress.

GENERAL ALEXANDER LOHR
Chief of the Austrian Air Force

Experiments of these last years are proving very clearly that fully armed and ammunitioned soldiers can easily be landed by means of parachute. Supplying of advanced patrols with foods and ammunitions has already been accomplished in 1915-1918. During their African campaign in Morocco, the French already practiced it regularly, and it has to be credited to aviation that the Italians succeeded in conquering Abyssinia so quickly owing to the fact that airplanes were able to supply whole arms corps when by no other means this could be done.

It is therefore to be held now as quite possible to send troops to very advanced positions and to supply them by aerial means every time the enemy does not oppose it. In the case of European wars it must be realized, however, that the observation service will generally be able to catch sight in due time of such transports when the objective is far enough and to take the necessary countermeasure. Transport aircrafts, as well as bombers, being often exposed to attacks only during the return trip, it appears necessary that such counter-measures besides the aerial defense with fighter planes have to be helped by anti-aerial artillery.

The landed patrols as soon as down to ground naturally need some time in order to organize themselves and find their way. Should they be caught at this very moment by enemy forces, even small ones, but capable of a quick gathering, the failure of the enterprise is nearly certain. It appears therefore necessary for the future to take defensive measures against aerial infantry such as signal service, lorries ready to start and so on.

More dangerous than aerial infantry seems to be "sabotage" infantry, bold men landed by parachute whose mission is to lay mines, to kindle fires and so on. Results will be greater when plans are drawn up before the war and men fully trained for such particular task.

A matter of outstanding importance will be the landing of troops in the battlefield itself. In some particular spots of it, signal service and other communications may be wrecked or not yet ready and consequently the defence by fighters and anti-aerial artillery out of efficiency. In such case there will be very favorable conditions for a surprise from the sky. If the aggressor is also favored by land's configuration and weather conditions, aerial infantry can easily be successful, by destroying communications in the back-lines and so paralyzing the action of headquarters.

Sometimes the attack could also be struck

from back and sides with better results than can be expected judging only from the sheer number of soldiers involved.

It is consequently my opinion that aerial infantry, although not to be considered as a decisive factor, is nevertheless a quite remarkable novelty in the art of the war.

C. WIESELBERGER
Director, Aerodynamic Institute, Aachen University

Is it possible to reach a stalling to top speed ratio in the order of 1 to 10?

I am firmly convinced that in the next five or ten years, the actual range from stalling to top speed will be increased, but it is also my opinion that better result can only be obtained, at least for some years more, by using the lifting power of horizontal propellers and by further developments of helicopters and autogiros. For the latter particular type of aircraft there are only some particular problems of construction and stability left to solve and the solution is only a matter of a few years.

I do not believe that standard airplanes will reach very low landing speed (let us say 10 to 20 kms. p.h.) owing to the fact that fixed wings will not give at such speed a sufficient and efficient lift.

WOLFANG VON GRONAU
President, Aero Club of Germany

Prototype machines are now being tried which reach the speed of 500 kilometers an hour. The quickest has even done more than 700 kilometers an hour. Why could these results not be obtained with standard equipment aircraft? There are two problems that have to be solved first. First of all there is that of landing. It is difficult to reduce such speeds so as to be able to land slowly in such a little space as that required by some aerodromes, and with safety for the passengers. Military use of damaged airdromes or those of limited space should also be taken into consideration. The present speed of landing should not be increased in any case, even if navigation speed should be increased. Although there are no irremovable difficulties connected with this problem, it does not seem to be very easy to solve. Wind tunnel experiments in which the air current was made visible by smoke have shown that it is still possible to increase the ratio between the highest and lowest speeds.

The second problem, which will undoubtedly be solved gradually, is that of the driving power and of fuel consumption. The prototypes now under test have engines which, on account of their measure and weight, are out of proportion with the size of the body and they do not last long enough owing to their lightness. The foregoing holds good for the fuel quantity required, which is excessive in comparison with the load capacity of the craft. One could nevertheless reach a considerable flying range even with increased power of the engines, provided that their weight and specific consumption of fuel do not increase. In this way the highest speed obtained will not cost more. On the other hand, this is the condition against which the speed of the present prototypes can be utilized practically.

For several reasons I do not think that airplanes with movable wings will come into use in the near future. The lifting propellers and similar constructions are so complicated and in their revolving parts they are exposed to such wear and tear that in the present state of technics it is impossible to build them for trials of some importance. Even the flying windmill has not been able to get a big market for itself on account of the high cost of its too reduced load capacity and a lower speed than that of airplanes with equal power and fixed wings. Since the flying windmill is also extremely sensitive to overloads, it is not even free from danger and many accidents have already happened on account of this fact. On the other hand, with the aid of slot wings, aerodynamic brakes and other devices of that kind, it has been possible to obtain a reduced starting and landing speed for ordinary airplanes, which is sufficient for nearly all cases. This accomplishment together with the marked advantages offered by the airplane make investigations in the field of movable wings seem to be less urgent.

According to my opinion the use of airships for transoceanic services will have further developments, seeing that they can carry a larger number of passengers than airplanes and can offer them more comfort. Passengers will reserve their preference for airships over airplanes on account of the time saved in the voyages with transatlantic craft. On the other hand, I do not think that airships will be used for military purposes as their extreme vulnerability would make them a too easy prey for the airplanes.

ARTURO G. CROCCO
OF THE ITALIAN ACADEMY

The Volta Congress has confirmed the scission of the problems of flying speed in three fields, of which the first reaches about 800 Kms. p.h.; the second range between 800 and 1200 Kms. p.h., and comprises the speed of sound in the atmosphere, and the third goes beyond 1200 Kms. p.h. (Please take notice of the graphic). These three zones can be shown in the graphic by taking as an index the drag-coefficient of a body having a certain form (f. in. an airplane fuselage). The Congress has called them scientifically sub-sonorous, sonorous and ultra sonorous speed. I will use instead more expressive technical terms by naming the first one "aeronautical" and the third one "ballistic." In fact, the aeronautical speeds have in the "Avis" term their natural progenitor, as their technics in the modern airplanes are now following the bird features. This is true not only of their esthetic aspect, but also of the fundamental aerodynamic particular which is that of frontal rounded wings and bodies. It may be foreseen that this particular form will remain the main characteristic of aircraft as far as the drag-coefficient remains constant, that is, up to the highest limit that can be reached, before the problems of speed can be noticed. On the contrary, the "ballistic"

speed, which has already been reached by artillery but not yet by flying men, will compel us to give up this form only to follow the direction of the new theories which were adopted by the Volta Congress, and which require sharp frontal forms, like the ships' prow or like the form of modern bombs.

And ballistic flight's wing have been compared at the Congress to blades. Not only aerodynamical basis but also the principles of propulsion and power will have to change if we want to reach ballistic-flight. New technical principles will have to be realized for propulsive apparatus and for engines. This change will not be a gradual evolution but a revolution.

Where will this ballistic- flight be possible? Of course in rarefied air. The connection between high speed and rarefied air is imposed by the problem of power and by exigencies of take-off and landing which both require low speeds. Perhaps ballistic flight will extend to the ozonesphere, where electrodynamic phenomenons which are characteristic of great rarefaction could help in supporting the airplane. Anyway, since the main obstacle to ballistic speeds is the air, we are justified in thinking of rarefying it as much as possible. This revolutionary characteristic of the probable new human conquest leads to believe that the result of present investigations are only isolated elements of a potential nature. They can be neither reckoned nor measured until a new idea will be born which will associate and value them altogether. Thus at Guidonia, in the stratospharic channel, aerodynamic ballistic is studied. In the General Aerodynamic Laboratory of our Engineer's School of Rome, stratospheric energy is explored. At the flying field of Montecelio, special devices for human respiration in the vacuum are experimented.

Let us leave the field of ballistic speed which is still unexplored. Let us consider the field of aeronautical speed. Practically aeronautical speed reaches a limit a little over 800 kms. p.h. The unbeaten record of Lt. Agello at Desenzano has covered the largest part of such field by surpassing 700 kms. p.h. We have come, therefore, very near the point where drag coefficient abruptly increases and lift coefficient decreases. Within this limit there is still a large margin for common aircrafts, as the question is to double the present speed of civil and military airplanes. The problems here are no more of an aerodynamic but of a constructive nature; such as improving the streamlining, applying more powerful engines and above all, providing for new cooling system. All these problems are now known and it is of little importance to investigate whether the land plane will be in more or less advantageous conditions compared with the seaplane to improve the present speed. Researches will proceed gradually but unceasingly. Therefore, if ballistic-flight is only a future eventuality and Agello's flight is only an anticipation, the continuous improvement of standard airplane speed, together with the capacity of heavy useful load, is now quite tangible.

Unfortunately the race to armaments polarized all aviation development in the military field. While some nations tear themselves to pieces within their borders, while savage man's instinct menaces to destroy civilization and while the instinctive barbarity breaks all bounds of law and religion, the most sane and poised people are forming an alliance between themselves in order to defend their existence and the existence of humanity. During these troubled times the progress of great inventions becomes more rapid, but its characters are deeply modified, especially in the field of scientific ideals. Science becomes positive. Speculative enquiry yields to realism. One does not sow but harvest; one does not look at the future but at the imminent. The daily diffusion of cultural news is veiled with reticence, and all activities are masked with the military secret. * * Progress needs peace in order to materialize. We no more live in the times of Archimede who pursued its theorem within his own brain while Romans were sacking Syracuse. Today, the brain needs laboratories, experimental plants, workshops, raw materials, energy, cooperation. All this cannot exist without a great security within the borders and on the sky, or without a firm discipline among the people or without a leading and strong will power.

UMBERTO SAVOIA AND CELESTINO ROSATELLI
of the "Aeronautica d'Italia Fiat"

Civil and military aviation is now pegged with its series material on a standard near to 300 kilometres an hour. What problems must be solved before the standard of 500 kilometres can be passed on to, which has now been clearly announced by most recent experimental prototypes machines?

There is no difficulty in stating that the speed of 500 kilometres can be reached in the near future as a normal standard for some particular civil airplanes and for some special services. This will not be very easy, however, especially if comfort and safety are not to be sacrificed. Further improvements of the streamlining is required, which can be summed up as follows in regard to the fuselage:

1. Reduction of all harmful spaces and therefore the chief section, and better retractability of the landing gear, the tail wheel, the wireless antennas, etc.

2. Generalization of instrument-flight and further reduction of the present wind screen.

3. Increase of smoothness of the covering surfaces with the use of suitable varnishes and introduction of nails with hidden heads.

The ideas of paragraph 1 are the most important because with them it is possible to obtain an increase of speed which, according to the latest hopes, can reach 25%. With reference to the body, improvements of the aerofoils can be taken into consideration too, and the use of higher wing-loading in connection with the spreading of super-lifting devices. There is no exaggeration in foreseeing that when all means are turned to and without worrying too much about the cost, a fineness in all the airplane can be reached of about 35% more than that which is usually reached now, since as matters stand at present, civil twin-engined air-

planes could exist with 2000 h.p., capable of reaching 430 kilometers at an altitude of 4000 meters, and the saving mentioned above would become an increase of about 10%. The specific power of the engines has not yet been mentioned however. In this regard the greatest obstacle for increase of power is represented by cooling. A reduction of the surface required for the radiators would be obtained if the problem of engines cooled with liquid at 130-135 degrees could be resolved. An increase of power would not, therefore, mean an increase of drag with a result amounting to next to nothing. Five hundred kilometers an hour could then be reached easily and perhaps exceeded.

Do you think that regular air navigation in a near future, within fifteen or twenty years from now for instance, will get near to navigation altitudes close to the world's record?

The problem of flying at stratospheric altitudes with the exception of record flights has difficulties which can now be described as insurmountable. The integral high altitude engine has still to become an accomplished fact, namely, to be capable of giving a constant power for all the altitude on account of technical reasons concerning supercharging and cooling. In spite of the very low temperature and the great speed of the aircraft, cooling of the engines at altitude is almost out of the question on account of the lower density of the air, and if architecture is not to be radically changed. This would mean making it cumbersome and therefore harmful for the purposes of good penetration which is being looked for with altitude. And the supercharger which should establish the same pressure at 10,000 meters as on land, would cause such an enormous heating of the air as to become an obstacle for the engine's working.

Leaving aside the problems of the engines, of the propellers and of the support, there is another with much greater difficulties, namely, if it is possible to live in the aircraft. It is true that like Jules Verne, it is not difficult to think about hermetically closed cabins and supplied with air from suitable compressors, but the problem of flight is first of all a problem of weight, and nobody stops to dwell on the insurmountable difficulties to be met with on this path. The cabin would have to be completely air-tight and be able to hold out against working pressures from the inside to the outside of about 7000 Kg. per square meter. Further, all the problems exist in regard to the passage of the control-cables and not on account of the difficulty in itself, but owing to the enormous burdens of weight they bring about. It is quite out of place, however, to proceed any further with the examination as there is nothing else to be done but to come to the conclusion that flights at very high altitudes will remain for a long time in the field of sport without useful, practical and safe applications.

Ed. Note: This concludes the quotations made of special articles on various aspects of aviation, present and future, which appeared in the first international issue of the Italian aviation journal L'ALA D'ITALIA, published recently. These articles were printed in five different languages, namely, Italian, Englis h, French, Spanish and German. One reading these articles - the contributions of eminent men prominent in aviation affairs - cannot fail but be impressed by the serious thought and deep study which the subject of aviation is receiving in countries beyond our borders.

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35TH DIVISION AVIATION HAS NEW OFFICERS' CLUB

Officers of the 35th Division Aviation, Missouri National Guard, invite with no little pride Air Corps personnel and others connected with aviation to visit the new officers' club, located in the new addition to the hangar building at Lambert-St. Louis Municipal Airport, Robertson, Mo.

The club room has been decorated in unique style. The walls are covered with photo murals consisting of inter-related aviation subjects. The murals over the fireplace depict the first flight of the Wright Brothers at Kitty Hawk, and was made from the original picture autographed by Orville Wright. A beamed ceiling is paneled with paintings of 148 Air Corps insignias, including foreign insignias in addition to those representing Air Corps and National Guard organizations.

The pride and joy of the Missouri airmen is a bronzed frieze, 10½ feet long, 30 inches high, into which are modeled portrait likenesses of the officer personnel of the Squadron at the time Lieut. Colonel P.R. Love was leaving to assume his new duties as Division Air Officer. This was hung in a most appropriate place in the clubroom. A bust figure of Colonel Love is in the center and is surrounded by seventeen other heads arranged against a background of sky filled in minute detail with various types of planes, clouds, and landscape. The frieze was obtained by the Squadron through its friendship with Mr. E.A. Siebert, a St. Louis sculptor, who executed the bas-relief and presented it to the organization.

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INSTRUMENT REPAIR BUILDING FOR HAWAIIAN DEPOT

Construction has started on a new Instrument Repair Building for the Hawaiian Air Depot. The structure will be 22 feet by 55 feet. This additional unit has been badly needed for some time. In the past it has been necessary to send a large number of instruments to the mainland for overhaul. With the addition of this new building, however, all this work will be accomplished locally. The building has been especially designed for this work. Double walls will be provided to prevent the entry of dust, dirt and other foreign matter from the exterior. All air entering the building will be filtered through a ventilating system.

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The 23rd Bombardment Squadron, Luke Field, T.H., lost one of its Staff Sergeants, John Zane, who died at Tripler General Hospital on the morning of November 19th. Sergeant Zane was well liked in the Squadron and was a competent noncommissioned officer.

Advanced Flying School, Kelly Field, Dec. 19th

Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, inspected Kelly Field on December 8th, with a view to making recommendations regarding permanent housing here.

Major Edward V. Harbeck, Jr., on duty in the Inspection Division, Office of the Chief of the Air Corps, was at Kelly Field from December 7th to 10th as a technical inspector of Air Corps equipment.

First Lieut. Burton M. Hovey, Jr., reported for duty and was assigned to the 61st School Squadron as Supply Officer, Mess Officer, and Assistant Engineering and Operations Officer. He comes to us from duty in Panama, and was a member of this command before his detail to foreign service.

Luke Field, T.H., December 4th.

23rd Bombardment Squadron: The U.S.A.T. REPUBLIC, which docked in Honolulu on December 2nd, brought among its passengers Major Harold W. Beaton, Air Corps, who assumes command of the Squadron, relieving 1st Lieut. Ford J. Lauer. The latter departs aboard the REPUBLIC for duty at Langley Field with the best wishes of the organization. The 23rd is fortunate in its new commanding officer, who brings to the Squadron the experience of many years with Bombardment organizations.

Sergeant Robert L. Mullen was promoted to Staff Sergeant; Corporal Warren B. Caywood to Sergeant and Private, 1st Cl. George A. Heard to Corporal. Congratulations to all.

4th Observation Squadron: The Squadron had an "Aloha" dinner on November 23rd for the men leaving on the ST. MIHIEL transport on November 24th. Those leaving were Pvt. 1st Cl. W.L. Robinson, Pvts. J.M. Bracy, J.H. Lint, J.B. Olheiser, C.H. Pearson, R.H. Platts, A.W. Pound and J.V. White.

50th Observation Squadron: Lieut. C.F. Tiemann, who left for Randolph Field on the ST. MIHIEL, and Lieut. C.W. Phillips, who will sail on the REPUBLIC for Scott Field, have been replaced by Lieuts. E.T. Gorman and A.D. Olson, both from Mitchel Field. We are sorry to see Lieuts. Tiemann and Phillips leave, and welcome Lieuts. Gorman and Olson to the Squadron.

Hawaiian Air Depot, Luke Field, December 4th.

The Depot is now busy receiving a large shipment of Air Corps supplies brought into the post of Honolulu by U.S. Army Transports ST. MIHIEL, SCOTTSBURG and REPUBLIC, arriving in the order named.

The Air Corps supply system may appear to the casual observer as a rather cumbersome and awkward procedure. When consideration is given, however, to the large number of items handled by Air Corps Depots and other Air Corps activities, it is readily apparent that only properly systematized and controlled efforts will produce the desired results. The Hawaiian Air Depot stocks approximately 25,000 items, the money value of which runs into several million dollars. For economical reasons, if for no other reason, the greatest care must be exercised in replenishing these stocks. This is all based on carefully prepared consumption data, and such work is designed insofar as possible to provide an automatic flow of spare parts to these Islands. Stocks are gradually being increased in the Hawaiian Department.

Hawaiian Air Depot, December 18th.

On November 27, 1936, a meeting of employees of the Depot was held for the purpose of organizing a Federal Credit Union. More than 125 employees signified their intention of becoming members of this Credit Union, and participated in the election of committees. The committees elected were as follows: Board of Directors - E.W. Hailey, G.H. Miller, B.M. Johnson, Roscoe Coning and E.A. DeMello; Credit Committee - C.P. Fasig, R.M. Davis and R.G. Owen; Supervisory Committee - F.D. Wood, J.P. Biard and G.C. Hall. Officers elected by the Board of Directors are as follows: E.W.Hailey, President; Roscoe Coning, Vice President; and B.M. Johnson, Clerk-Treasurer. It is believed the organization, to be known as the Hawaiian Air Depot Employees Federal Credit Union, will be of great benefit to the members.

Actual construction work has been started on the new Instrument Repair Building for the Hawaiian Air Depot. It is expected that this building will be completed shortly.

A large quantity of modern machinery and shop equipment was recently received at the Depot.

Captain H.W. Serig, Signal Corps officer, reported for duty at the Hawaiian Air Depot in connection with the establishment of a repair unit for Signal Corps equipment.

Mr. E.W. Hailey, Chief Clerk of Depot Headquarters, and President of the Hawaiian Air Depot Employees Federal Credit Union, sailed on the USAT Republic on December 7th for a mainland visit.

The recently organized Hawaiian Air Depot Employees Federal Credit Union is apparently meeting with considerable success in the eyes of its members. Deposits to members' accounts now exceed one thousand dollars which, in view of the holiday season and the short time which this Union has been in operation, is rather exceptional.

Hamilton Field Air Base, December 26, 1936.

Hamilton Field has just received one of the new Douglas Cargo ships. Having been on the field not quite two weeks, it has already completed 28 hours and 35 minutes flying time.

The 5th Air Base Squadron entertained at a dance the night of December 23rd, and a grand time was enjoyed by all. A midnite lunch was prepared by the kitchen force, the serving of which was one of the highlights of the evening, and surely did its part in maintaining the good spirits of the approximately 500 members and guests. Gold braid was very much in evidence, the commanding officer, Colonel Davenport Johnson, and his staff all contributing much to make the dance a successful one. We had a grand time, and all are looking forward to the next one.

San Antonio Air Depot, Duncan Field, Texas.

Brigadier General George H. Brett, commanding the 19th Composite Wing at Albrook Field, Canal Zone, while at Randolph Field enroute leading the recent ferry flight of two amphibian and one cargo planes to the Panama Canal Department, visited this Depot December 11th greeting old friends and displaying great interest in viewing the changes in his old stamping grounds here. The General was commander of this station in 1918-1919.

Colonel F.L. Martin, Executive of the Air Corps Materiel Division, Wright Field, Ohio, on a flight to Randolph Field, paid a visit to this Depot December 10-11, discussing Air Corps materiel matters with the Commanding Officer.

Captain J.H. Hicks, of the Air Corps Materiel Division, Wright Field, arrived here December 11th for temporary duty, conferring on Air Corps supply matters and shop methods, and departing on the 18th on similar missions at Hensley Field, Post Field and Fort Leavenworth, traveling by air. His visit was enjoyed by his old friends here, as he was Assistant Depot Supply Officer of this Depot in 1934-1935.

Among cross-country visitors at the Depot during December were Lieut. F.E. Rouse, Air Res., and Flying Cadet P.S. Helmick, December 6-7, and Lieut. E.H. Schansler, Air Res., December 13-14, all of Selfridge Field, Mich., to ferry back P-26A planes to that station.

Mr. Frank Kunna, representative of the Eclipse Aviation Corporation, East Orange, N.J., visited the Engineering Department of the Depot on December 14-18, conferring on procedure in the preparation of Type C-20 Starters on A-17 planes for winter test.

Staff Sergeant Fred O. Tyler, who has been attached for duty to the 3rd Transport Squadron at this Depot since last September from the Base Headquarters and 1st Air Base Squadron, Langley Field, Va., has now been transferred from the latter organization to the Transport Squadron. The 3rd Transport Squadron has also gained during December Privates I.D. Anderson and I.L. Fenster by transfer from the 63rd School Squadron, Kelly Field, and Private James Lumpkins, Jr., by transfer from the Base Headquarters and 8th Air Base Squadron, Brooks Field, and has lost Private J.L. Russell by transfer to the Base Headquarters and 8th Air Base Squadron, Brooks Field.

Mr. V.H. Cortines, Radio Aircraft Electrician with the Signal Corps Radio Section at this Depot, attended a class of instruction in the repair of aircraft radio equipment at the Aircraft Radio Laboratory, Wright Field, Ohio, November 27 to December 8th.

Air Base Headquarters, Langley Field, Dec. 18.

2nd Bombardment Group: This Group during the past month has been engaged in extensive bombing operations. Both the range at Fort Eustis and Plum Tree Island have been in constant use when weather permitted. In addition, a slick dropped on water was used as a target from time to time.

Four members of this Group were recently honored by being awarded the Distinguished Flying Cross. Major Barney M. Giles, Air Corps; 2nd Lieut. James H. Patrick, Air Reserve; Staff Sergeant Donald E. Hamilton and Corporal Frank B. Connor, 96th Bombardment Squadron, GHQ Air Force, were given this award for the flight made last February from Concord, N.H. At about 12:00 midnight, the call came to Concord that a group of CCC boys were on an ice floe that was drifting out to sea off Cape Cod. Major Giles, with Lieut. Patrick as observer, Sgt. Hamilton as crew chief and Corp. Connor as radio operator, took off at 1:00 a.m., in a B-10B airplane and flew down to Cape Cod to search for them. The flying conditions were extremely hazardous at the time, but the flight was successful. The boys were located before daylight and another plane was dispatched to drop food and blankets to them. The Coast Guard succeeded in rescuing them later in the morning. The Group extends congratulations to all members of the crew for their success in accomplishing this hazardous mission.

37th Attack Squadron, GHQ Air Force: Lieuts. W.F. Day, Preston P. Pender and Anthony G. Eubanks, of the 37th, left Langley Field on November 23rd for March Field, Calif., in the YOA-5, piloted by Captain H.M. Wittkop and Lieut. W.W. Bowman, and arrived there on the 27th. They left for the return trip on the 29th, ferrying three A-17 airplanes as a flight led by Lieut. Day. After being detained several days enroute at Dallas, Texas, they reached Langley Field on December 4th. Two of the ships were assigned to the 37th Attack Squadron, which now leaves the Squadron with eight airplanes.

The bang-up ending of the calendar year planned by the 37th has been somewhat inundated by inclement weather. However, the non-flying days have enabled the Airplane Commanders to become better acquainted with detail maintenance of his airplane and equipment, in visualizing the importance of an intact and well trained crew. The interest of the pilot in his airplane will raise the morale of his crew, promoting maximum efficiency. Interest under the cowling will inform the young pilot that proper functioning of many accessories are inherent to the successful completion of his missions and that present day airplanes comprise more than the switch and the throttle.

The chemical tanks ordered in June of 1935 have arrived and will be shipped intact to the various organizations which now have our old A-8's and our good will. They will possibly be united to spend the last days together.

The 37th has been concentrating on qualifying rear gunners. To date the following have qualified as Expert Gunners: Master Sgt. Nero, Sergeant Oldson, Corporal Basore and Privates Dunn, East, Gangemi and Wagner. There are two men on D.S. at Chanute and two on furlough whom we hope to qualify in the near future.

One of our greatest acquirements in the last few weeks is a 1500-gallon gas truck, which removes the necessity of a flight from the balloon hangar to the main part of the post and the possibility of servicing from the wrong gas pit while there.

Headquarters, GHQ Air Force, Langley Field, Va.

Personnel of this headquarters was increased by the addition of four noncommissioned clerks

from other Air Corps fields. These valuable additions to the office force were Master Sergeant Horst W. Tittel, Mitchel Field, who was assigned to the Inspection Department; Staff Sergeant Ray L. Trimble, from Selfridge Field, and now in the file room; Staff Sergeant Paul Jones, Barksdale Field, now in the Adjutant General's Department, and the new orders clerk, Staff Sergeant Richard G. Winters, from the 19th Bombardment Group, March Field.

A recent visitor to this headquarters was Major Earl S. Hoag, Adjutant of the First Wing of the GHQ Air Force, who was enroute home from the Miami air maneuvers.

While at Miami, the five officers of the Hqrs. GHQ Air Force, on duty as observers at the Air Meet, were royally entertained by the Commanding Officer of Chapman Field, Major Wm. V. Andrews, and Mrs. Andrews.

While his colleagues at this Headquarters were shivering under the force of Chesapeake Bay breezes, Lieut. Colonel Edward Montgomery, Chemical Officer of the GHQ Air Force, was enjoying a month's leave in the balmy atmosphere of Haiti, Venezuela, and other points in the West Indies. The Colonel reports that the weather was very enjoyable, suggesting that officers planning a similar cruise should do so in January or February, thereby escaping the worst of a northern United States winter.

When asked about economic conditions in the Caribbean, Col. Montgomery stated that all people he spoke to were enthusiastic concerning the increase in the cargoes of outgoing vessels. He said that the three countries he visited appeared to have suffered little during the depression. Living expenses were higher in Venezuela than in the United States, but much lower in Haiti and Curaco, he declared.

A.C. Detachment, Municipal Airport, Oakland, Cal.

Reserve activities at this station took on added interest during the first 28 days of November, with the usual quota of PT-3A's doing their stuff, and two BT-9's being well patronized. However, if permissible, mention could be made that a number of days were lost to flying on account of a strange weather condition. If allowed to speak out loud from previous experience on both east and west coasts, it appeared to be fog.

On November 29th, misfortune came stalking into our hangar and pointed her finger at Captain Alexander S. Gregory, Air Reserve, and our newest BT-9. Captain Gregory was killed when his airplane crashed at Menlo Park, Calif., about 20 minutes after the start of his second hour of flying on that morning. No witnesses from this station saw the accident.

Captain Gregory entered the service in July, 1917; went through the Texas war-time training centers, and was commissioned a 2nd Lieutenant in the Air Service in March, 1918. He was ordered to the port of embarkation for overseas duty 12 days before the Armistice, thus missing action in the war. Discharged in December, 1918, he accepted a commission as second lieutenant in the Air Reserve in January, 1919, and was active therein to the time of his death.

Lieut. Gregory is survived by his wife and his brother, Captain H.W. Gregory, of Seattle, Wash. His loss is sorely felt by his fellow officers of the Second Reserve District, many of whom attended his funeral and burial in the National Cemetery, Presidio of San Francisco.

This is the first time a Reserve officer of this District met death during Reserve flying. This activity has a record to be proud of when the amount of flying performed by the pilots of this District during the past 15 years of its existence is considered.

Mitchel Field, L.I., New York.

The annual Christmas Party for the youngsters of the post was held at the Post Gym on the afternoon of December 24th, under the sponsorship of Major N.A. Jones, Chaplain. A realistic Santa Claus gladdened the hearts of all the kiddies with suitable presents and candy. The party was a complete success due to the untiring efforts of Major Jones and his staff.

The annual New Year's Eve party and celebration of the N.C.O. Club was held in the Post Gymnasium and was a "howling" success. Attended by over 100 members with their guests, the capacity of the Gym was taxed to the utmost.

Dancing to the music of an excellent orchestra, an excellent floor show and appropriate refreshments were enjoyed by all present until the wee small hours. All in all, the consensus of opinion was that the celebration welcoming Baby 1937 was the most successful effort of its kind sponsored by the Club in many years. A thoroughly enjoyable time was had by all, and the various committees whose labors produced the result are to be highly commended.

99th Bombardment Squadron: The Squadron now enjoys virtual leadership in the leader squadron athletic tournaments at Mitchel, being tied for first place in basketball and a close second in bowling.

On December 18th the Squadron led the Group to Langley Field to drop live bombs on Plum Tree Island, the bombs ranging in size up to 1100 pounders.

Lieut. F.L. Rivard was transferred to Chanute Field for the Armament Course, and Cadet Jack Thomas was transferred to Brooks Field for the winter season.

Barksdale Field, Shreveport, La., Jan. 5,1937.

77th Pursuit Squadron: Twelve noon, December 23rd, saw the beginning of the Christmas holidays and the subsequent "scattering to the four winds" of the Squadron Personnel. Flying Cadet Learned took 15 days leave, which he spent in Minneapolis, Minn.; 2nd Lieut. Carter spent the holidays at his home in Port Lavaca, Texas; Lt. J.W. Hinton went to Fort Worth, Cadet Lessig to Shreveport; Cadet Wood to Haynesville, La.; Lieut. Wilson to Hearne, Texas; and Lieut. Piper to New Orleans. Lieuts. Puryear and Gowen were the only two pilots of the Squadron who failed to take leave or furlough, with the result that much of their spare time was spent on boards and guard.

Back to work on January 4th and confronted with gas mask drill and the wearing of gas masks from 8:00 a.m. to 3:00 p.m. for one week. Lt. Puryear, the Squadron Chemical Warfare Officer, in charge of the training, met with some diffi-

culty in giving commands through a gas mask at the first two or three sessions, but after that his voice had developed to the point where it jumped through the mask with the greatest of ease. Lieut. Puryear was ably assisted by the Squadron gas noncommissioned officers, Staff Sgt. McLean and Sergeant Cook.

Air Base Headquarters, Langley Field, Va.

33rd Pursuit Squadron: Lieut. Paul H. Dane, recent graduate of Kelly Field and one of those to receive a regular commission as a result of the last examination, took leave of absence during the holidays and returned to sunny California to be married. Lieut. and Mrs. Paul Dane will return to Langley Field after the holidays.

Winter tests finds three PB-2A's on the line ready to go to the Fairfield Air Depot for installation of winter equipment.

35th Pursuit Squadron: After a very busy fall and early winter season of activity, the Squadron welcomed the arrival of a relaxation period during the Christmas holidays.

36th Pursuit Squadron: Flying Cadet James M. Jones, of the 8th Pursuit Group, GHQ Air Force Flying Cadet Detachment, was attached to this organization for flying and tactical training on December 8th. All officers and enlisted men of the organization bid him welcome to his new environment.

37th Attack Squadron: Christmas has come and gone and, from all reports, all the personnel of the Squadron, except Staff Sgt. Soderstrom, enjoyed themselves immensely. Sgt. Soderstrom, always a gentleman, was opening the door of his car for his wife, stepped back, stumbled over the curb, hit his arm against the corner of a building, and broke his wrist. This a serious temporary loss to A-17 number 16, because it is feared that the plane will not function for its Swedish Commander, Lieut. K.P. Berquist, if it is not kept in condition by its Swedish Crew Chief, Staff Sgt. Soderstrom. In spite of this casualty, the good old 37th will be ready to start the new year off with a bang, and it hereby extends New Year greetings to all its friends.

2nd Bombardment Group: Due to the continuance of bad weather, the training of the 2nd Bombardment Group has been greatly hampered during December. Bombing on both the range at Plum Tree and Mulberry Islands has gone on whenever ceilings permitted. With the use of two ranges, we are getting some highly efficient bombers for our combat crews.

First Lieut. Douglas M. Kilpatrick, A.C.; 2d Lt. John B. Montgomery, Air Res., and Staff Sergeant Ernst Chaput, 49th Bombardment Squadron, recently qualified as Expert Aerial Bombers.

During the holidays, a large number of the officers and cadets seized the opportunity to get away from combat crews, operations orders, altimeter tests, altitude bombing, etc., and scattered all over the eastern United States. The balance have had to be content at home during the holidays with guard and airdrome duties to keep them in touch with the military.

TECHNICAL INFORMATION AND ENGINEERING NEWS
Air Corps Materiel Division

Kodalk MQ Developer:

An Engineering Section Memorandum Report covers the results of tests to determine the effects of substituting Kodalk for sodium carbonate in the Air Corps Standard Metol-Hydroquinone developer. In the conclusions it was stated that Kodalk may be substituted for sodium carbonate in the ratio of approximately three parts Kodalk for one part Sodium carbonate, nonhydrated. The use of Kodalk produces a developer which gives higher threshold speed and greater shadow detail at a given gamma than can be obtained with the same developer containing sodium carbonate. The use of Kodalk produces a developer having sensitometric characteristics which should make it desirable for use in the development of aerial negatives.

Light-Weight Track-Laying Tractor:

A representative of the Materiel Division visited Aberdeen Proving Ground, Aberdeen, Md., to witness tests on a light-weight track-laying tractor built by the Ordnance Department for the Air Corps. The unit appears to meet the requirements laid down by the Air Corps and has the appearance of being well designed and constructed. The vehicle has a top speed between 40 and 45 miles an hour and a drawbar pull with ballast of 3200 pounds on dry cement. In general, it is considered that the vehicle will be satisfactory for the purpose intended, although some minor changes are anticipated.

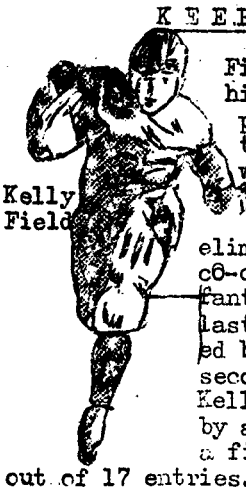
Parachute, Training, Type T-3.

A recent report furnishes information relative to standardizing the Type T-3 training parachute. This parachute is composed of a double harness of light weight 3000-pound tensile strength linen webbing, to which is attached a 28-foot diameter hemispherical canopy as a back parachute and a 22-foot diameter hemispherical canopy as an auxiliary chest parachute The pack assemblies for both canopies are identical to the conventional four-flap elastic-operated packs which have been in service for the past number of years. A conventional spring-operated pilot parachute is attached to the back type parachute for assurance of fast withdrawal of the canopy.

Type B-1 Wind Direction Indicator Tower:

Service Test Requirements have been prepared for test of a Type B-1 wind direction indicator at Brooks Field. The winch and cable arrangement are designed to facilitate raising the tower with indicator installed thereon to an upright position or lowering same until the tower is approximately horizontal. Adjustments are provided to allow for variation in weight of indicator or tower or the combined center of gravity. The tower is designed with a factor of safety of three for the following loads: a. Weight of indicator totalling 2,000 pounds; b. Wind impact and/or pressure load of wind upon indicator and tower for velocities up to 90 m.p.h.

KEEPING FIT



Kelly Field

First Lieut. E.J. Timberlake's high-powered Kelly Field Flyers provided the biggest upset of the season on December 12th, when they held the Randolph Field Ramblers to a 13-13 tie, which automatically eliminated Randolph Field from a co-championship with the 9th Infantry and Brooks Field. The last game of the season was played between Kelly Field and the second place 9th Infantry team, Kelly Field going down to defeat by a 13 to 6 score, resulting in a final standing of sixth place out of 17 entries. Kelly won but one game out of six played, with one tie game to their record. However, it is believed that Lieut. Timberlake has coached a nucleus for a mighty strong 1937 aggregation.

Brooks Field

The football team, a lone David among the Goliaths of the San Antonio Football League, has emerged from the season just closed with the local Army Football Championship.

The championship was the result of Major "Andy" Smith's fine groundwork in previous years. Major "Andy" had to leave at the beginning of the season for school, but he turned the coaching job over to Lieut. George R. Smith, Jr., and Staff Sergeant Leonard F. Girard, who continued his fine work with such highly satisfactory (to Brooks Field) results.

The Brooks Field Ganders played the following powerful teams and won five out of six games. Defeats were handed out to the 15th Artillery Sparkies, 30-0; Kelly Field Flyers, 27-7; 9th Infantry Manchus, 13-7; 23rd Infantry Doughboys, 13-6 and 12th Field Artillery Caissons, 56-6.

Upsets were plentiful, and the Ganders' flashy, speedy, pony backfield and stubborn fighting line had plenty of stiff opposition. They lost but one game, and that to Lieut. 'Ted' Landon's Randolph Field Ramblers. The Ramblers were in turn defeated by the 9th Infantry Manchus and tied by the Kelly Field Flyers. The Manchus' defeat by the 23rd Infantry Doughboys left the Ganders on top of the heap.

Five members of the Ganders squad were selected by the Official Association for the All-Army League Team: James C. "Woody" Woodyard and Davis U. Weaver, backs; Edward G. Fanning, Center; Kenneth W. Hale, Guard, and Melvin B. Reist, end.

Other members of the squad who distinguished themselves by their playing are:

R.E. "Snake" Naranjo, a spectacular end.

Collin R. Biffle, a blocking and line-charging back.

"Paddy" Ryan, a blocking and ball-carrying back.

Wayne A. "Red" Brown, a powerful guard.

J.F. McCrelless, another power at guard.

Eugene W. Robinette, a reliable end.

Dock Robinson, the iron man at tackle.

Victor E. Lobpries, another powerful tackle.

Will A. Hillscher, a spectacular and really dangerous tackle.

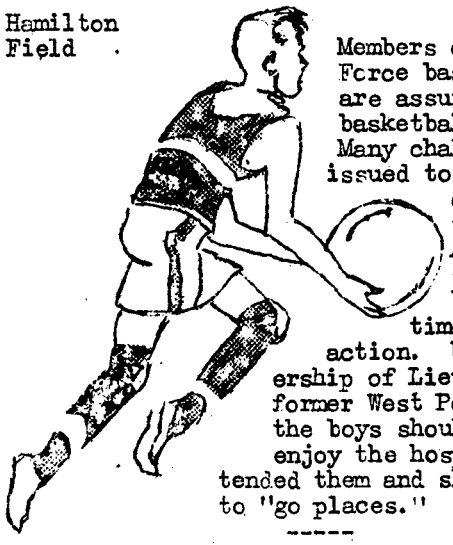
Ben. R. Wagnon, another powerful guard.

Simon G. Seanz, a line-plunging back.

Beverly L. Roche, a blocking and ball-carrying back.

The Ganders' old C.O., Colonel Frank D. Lackland, on a visit here from Wright Field, saw the Ganders' last game in company with the present C.O., Lieut. Colonel Henry J.F.Miller. In honor of the occasion, the Ganders ran wild over the Caissons to pile up the high score of 56 to 6.

Hamilton Field



Members of the Base Force basketball squad are assured of a busy basketball season. Many challenges were issued to the Fliers by different teams in this Area, thus assuring the members of a good time and lots of action. Under the leadership of Lieut. D.O. Smith, former West Point basketeer, the boys should be able to enjoy the hospitality extended them and should be able to "go places."

Luke Field

The 23rd Squadron came out second best in the inter-squadron basketball competitions, losing out to the 4th Squadron. Outclassed at the beginning of the game, they staged a last period rally to come up and give the 4th Squadron a tough game. The team is to be complimented on their efforts throughout the season, and Lieut. Bisson should receive mention for the skillful handling of the team, particularly through the last games of the league. The team was given a party after the final game to relieve the tension created by the competitions of the past weeks.

The basketball season came to a close recently when the 4th Squadron put the 23rd Squadron in the shade in an exciting game. The 4th won the Basketball Championship.

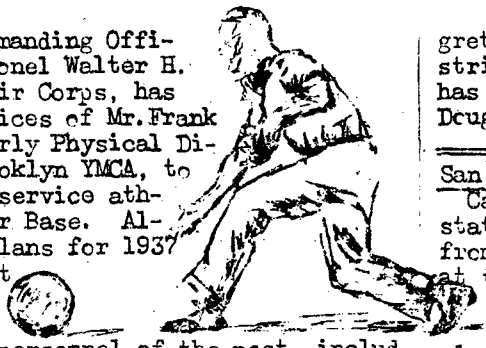
Scott Field

An inter-squadron basketball League was recently organized, comprising teams from the 15th Observation Squadron, 7th Air Base Squadron, 9th Airship Squadron, and Staff. The season begins January 12th and ends February 2nd, twelve games being scheduled. In games played with outside teams, the 7th Air Base Squadron thus far won its contests with Lawrenceville Merchants, the 1st Baptist Church five and the Holy Name Society five. The 1st Baptist quintet took two lickings from the 7th.

The 15th Squadron played a mixed team from Lebanon and lost by the close score of 29 to 24.

Lieut. Fahey coaches the 15th quintet; Lieut. Landon, the staff team; Corporal Clapp, the 9th Squadron, and Sergeant Boucher, the 7th Air Base Five.

Mitchel Field



The Commanding Officer, Colonel Walter H. Frank, Air Corps, has obtained the services of Mr. Frank E. Robbins, formerly Physical Director of the Brooklyn YMCA, to help promote all service athletics at this Air Base. Already elaborate plans for 1937 are under way that will include athletics of every form for all the personnel of the post, including families of officers and enlisted men. Under such sponsorship and guidance, the personnel of the Base is certain to benefit greatly by the contemplated program.

Two tournaments now in progress are the inter-squadron basketball and bowling leagues. At the time of this writing we find the Photo Section, 1st and 99th Bombardment Squadrons tied for first place in the basketball league. The rest of the teams are right on the heels of the leaders and are making them hit on all cylinders and in high gear at all times to hold their place. Along with the old stars of the past, this tournament has brought to light a few stars that will be shining during the coming season, promising to give Mitchel Field a first class team. Lieut. J.L. Randall, our post team coach, is very happy about the prospects and outlook for this season.

Games with high class civilian teams are being booked, and with the opening of the Sixth Annual Series of the "All Service League," the basketball team is promised a busy season. The "All Service League" consists of the following posts: Forts Jay, Totten, Hamilton, Hancock, Slocum, and Mitchel Field. The opening game is scheduled for January 18th.

The inter-squadron bowling league is something new for this post and, judging from the interest shown thus far, we will have a fine team entered in the "All Service League Tournament" to be held in February. Top honors for bowling belongs to the 18th Reconnaissance Squadron at the present time. Several bowlers are averaging very high in the 180's.

A basketball free throw tournament for the posts entered in the "All Service League" was scheduled to be held at Mitchel Field on January 14th. This is the second year for this event and, with the competition shown last year, a thriller was promised for this year.

Mitchel Field has an outdoor swimming pool under construction, which will open sometime next spring. We are hoping to have some bowling alleys in the near future.

18th Reconnaissance Squadron: The Squadron bowling team has been going great guns since the inauguration of the inter-organization league. To date the team has bowled over three formidable opponents and is leading the league in games won and in total pins demolished. Lt. Dietz, Staff Sgt. C.L. Smith, Corp. Dexter, Pvts. Lee, Swol and Sebasky are the Squadron's Alley Slingers.

With less success but nevertheless with just as much fight, the basketball team has been giving the other outfits plenty to worry about. Record to date - 3 won - 3 lost. The team regrets the loss of "Whitey" Wacliwicz who, stricken with the urge to tramp, tramp, tramp, has left the outfit for service with the Doughboys in China.

San Antonio Air Depot, Texas, January 5th.

Captain F.G. Irvin, returning to his home station at the Materiel Division, Wright Field, from the West Coast, and flying an O-46, stopped at this Depot Dec. 22nd for a brief conference with the Depot Engineering officers.

Recent visitors on ferrying missions included Major W.A. Maxwell, of Selfridge Field, bringing in a P-26A and leaving with a P-26 for Wright Field; Lieut. D.C. Barrow, Air Res., Selfridge Field, securing a P-26A for that station; Major F.D. Lynch and Lieut. J.M. Chappell, Post Field, Okla., in two O-19E's, leaving one for overhaul and returning in the other; Lieut. E.J. Hale, Maxwell Field, Ala., securing an overhauled B-6A for that station.

Christmas at this station was celebrated with a Christmas Tree for the military personnel and those civilians, residing on the post and their families, on the afternoon of December 24th, at the recreation room of the 3rd Transport Squadron. Santa Claus was present in the person of Tech. Sgt. D.M. Towns, of the Kelly Field Station Hospital.

Lieut. Colonel Morris Berman, Depot Executive Officer, departed December 28th on a month's leave, visiting in Mineral Wells, Texas.

Major J.P. Richter, Chief Engineering Officer of the Depot, and Mrs. Richter, enjoyed a motor trip to Mexico City and other points of interest in Mexico during the course of a 15-day leave.

Mr. Zachaeus C. Morris, Civil Service Aircraft Woodworker in the Engineering Department of this Depot, having reached retirement age, was retired January 1st. He had been employed at the Depot since March 21, 1922.

Mr. Cary Thomas Rhoades, 41, Civil Service Senior Aircraft Electrician in the Engineering Department of this Depot, died suddenly of a heart attack, while at his work, on December 19th. He has been in the service at this Depot since February, 1923. Funeral Services were held in San Antonio on December 20th, and the body was sent to Miamisburg, Ohio, his native city, for burial.

Mr. Rhoades was an overseas veteran of the World War, and was affiliated with the American Legion, the Alzafar Shrine Drum Corps of San Antonio, and the Shrine of Dayton, Ohio. Survivors are his widow, a daughter, Betty Jean Rhoades, of San Antonio, and two brothers, Melville and Charles Rhoades, both of Dayton, Ohio. His long and efficient service and his genial, friendly nature had won him the high esteem of a host of friends who sincerely mourn his departure.

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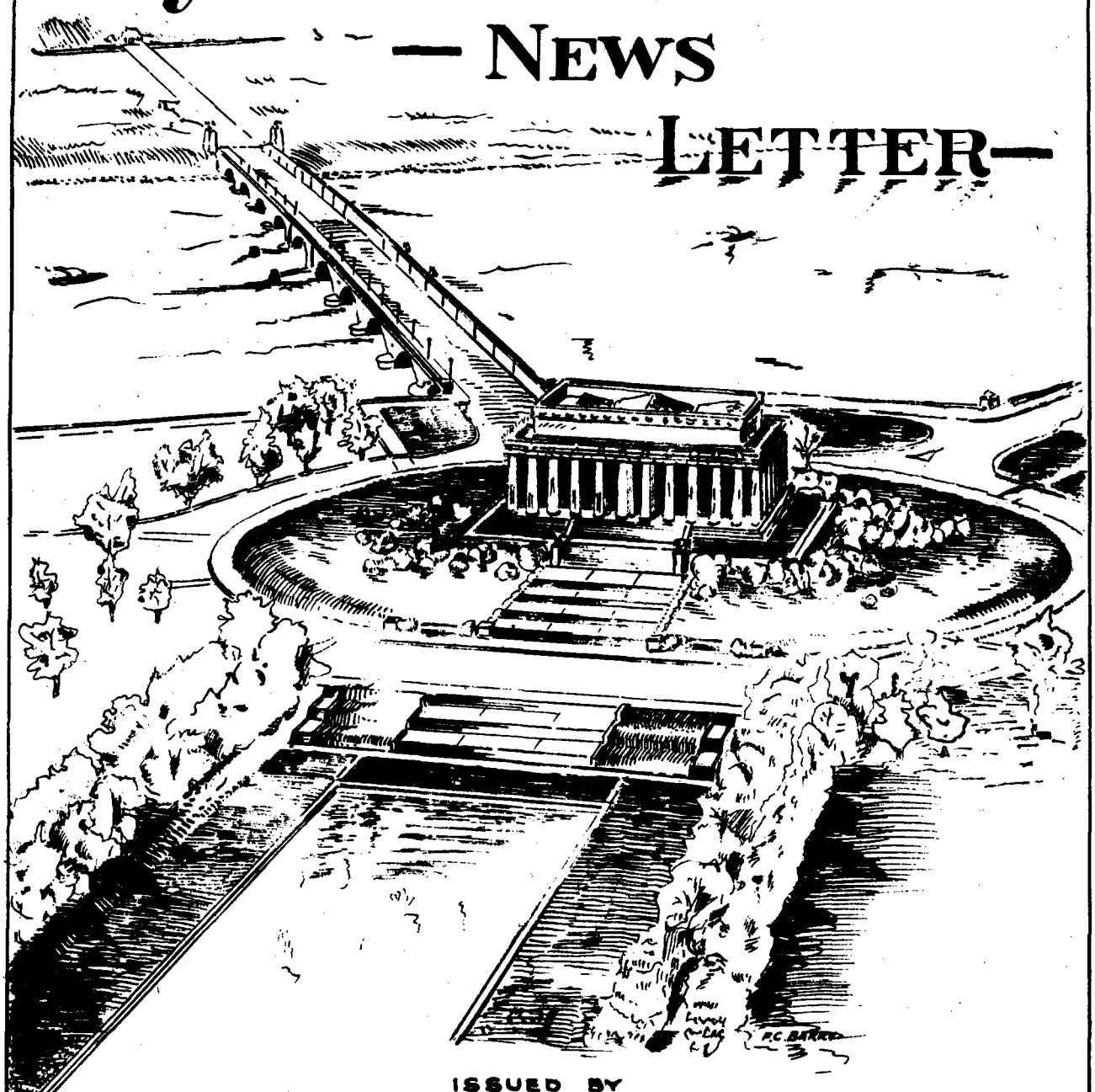
From the 2nd Bombardment Group, Langley Field, the second crew departed for the Boeing aircraft factory, Seattle, to secure the second YB-17 for that field. The crew comprised Major Caleb V. Haynes, Lt. R.F. Travis, Lt. F.L. Waldron, Tech. Sgt. Adolph Cattarius, Sgt. Mark R. Lauer, and Pvt. 1st Class James E. Sands.

AIR CORPS
— NEWS
LETTER—



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AIR CORPS NEWS LETTER

VOL. XX NO. 3

Information Division
Air Corps

February 1, 1937

Munitions Building
Washington, D.C.

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

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STUDENT TRAINING AT THE AIR CORPS TRAINING CENTER

By Captain J.B. Burwell, Air Corps

It seems to be a universal custom among graduates of any institution to regard their diploma as a permanent license to return to their Alma Mater ad lib, shake their graying heads filled with reminiscences and cry in despair that "the place has gone to hell."

A group of old graduates of the vintage of about '99 returned to a certain eastern college in the early 20's to discover that the students no longer had to thaw out the single spigot in the yard and await their turn to fill a bucket with cold water, dash back to their rooms and perform their morning ablutions. Instead, the spigot had been moved into the building to prevent its freezing and make it more accessible. The undergraduates who snickered at that tirade over an obvious improvement were themselves destined to return a few years later, discover the spigots moved into each room, which change prompted them to join the older graduates in the usual doleful dirge, for another improvement had been made.

Fortunately, such remarks are usually prompted by the old graduate's sincere interest in the institution and a desire to be shown that any changes made since his regime have actually been beneficial and produced favorable results.

In addition to giving the older officer an excuse to reminisce and the younger ones a brief description of the old system of training, these remarks are intended to show that student training has made steady progress.

Classes entering the Primary Flying School at Brooks Field between March, 1924, and March, 1927, inclusive, were trained under the "A" plan. They spent six months at the Primary Flying School, receiving approximately 75 hours of primary instruction and practice, and then moved to the Advanced Flying School at Kelly Field, where they spent another six months' period and received approximately 125 hours' instruction. Their primary instruction was very similar to that given today, but their basic instruction began at the Advanced Flying School and was given under the stage system. After a student once soloed on DH's, he had no regular instructor but progressed from stage to stage, being careful to avoid unoccupied check pilots, until he had completed the twelve weeks' basic course. About ten weeks of specialized training then followed.

Students soon learned to pull the prop through and get the retreating portion of their anatomy out of the way of the hungry propeller which was always greedy for a slice of steak. What little night flying the student received was quite different from such flying as practiced today. A few hops around the field and perhaps a short cross-country sufficed. He had no flares such as are dropped today, but a kind of burning torch under each wing, which, in case of emergency, were ignited from the cockpit. If they burned at all, they were liable to catch the wing on fire as well. When he approached the field for a landing, he found an old war-time truck chugging away in an effort to maintain a flickering beam from an antiquated searchlight.

Almost everyone believed that a pilot flew "with the seat of his pants" and was equally convinced that this could be done in bad weather as well as in good weather. When he graduated, a student had a total of approximately 200 hours' flying time, but knew nothing of instrument flying, radio beam work, or many of the other phases taught today. Even so, he was regarded as being one of the best trained pilots in the world, and it was not unusual, near graduation time, to see representatives of commercial lines on the

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field offering students who were about to graduate contracts calling for three or four times the rate of pay they were to receive in the Army.

After the passage of the Air Corps Act of 1926, a five-year program was placed into effect to graduate and commission more students without lowering the standard of the School. The Training Center was organized about that time, the "B" plan of training placed into effect, and only shortly afterward the first class entered March Field in November of 1927. Under this plan, training methods were improved, additions made to the curriculum, the percentage of graduates increased, and plans formulated to further improve the system.

The last major change occurred in 1931, when all primary and basic instruction was moved to Randolph Field, and Brooks and March Fields were discontinued as schools. This change has also produced satisfactory results, and other improvements have continually been made. The "B" plan calls for four months of primary and four months of basic instruction at Randolph Field, followed by four months of advanced training at Kelly Field.

When a student graduates today he has received approximately 330 hours of instruction and practice in the air. He is an accomplished instrument pilot as judged by the standard required of all pilots in the Air Corps. He is a better formation flyer, navigator, night flyer and all-round pilot when he graduates than the "old grad" was. He is qualified and capable of readily assuming the duties of pilot of any type airplane now in the Air Corps with but a short period to acquaint himself with the airplane, and is ready to absorb the latest ideas on tactical employment.

The problem of graduating a higher percentage of students has been given serious study, and the following plans have been considered.

If the course were lengthened without increasing the number of hours of instruction, the students would have more time and could, if necessary, be given more instruction in any one phase of training. This has been tried, and it was found that of those students who were unable to progress with the rest of the class a smaller percentage could complete the course even with additional instruction than is the case with new and inexperienced students. This method does not produce results in proportion to the additional cost of training.

If the entrance requirements were raised, the percentage of graduates would undoubtedly be increased. By more rigid mental examinations practically all of the academic failures could be eliminated, and by more rigid physical requirements, most of the physical disqualifications could be avoided. During recent years, over one hundred students have been eliminated from the Primary Flying School alone for physical disqualifications. If preliminary flying instruction at another station in the vicinity of the applicant's home were given each candidate and only those who showed aptitude sent to the School, as is at present done by the Navy, a large percentage of eliminations for flying would be avoided. Under these conditions it would be possible to graduate and rate as airplane pilots a much higher percentage of those entering the Primary Flying School.

The question of lowering the standard of the School in order to increase its output has been advocated by some and has been under continual study. Experience has proven that work done in the School by a student is a direct indication of what he will do when he joins another unit. Weak students are almost invariably unsatisfactory pilots in other organizations.

Transferring a man from the School to a tactical or other organization will not change his personal characteristics, his judgment, his ability to think or his coordination. The young flying instructors at the School are in general fresh from tactical units, where they have been leading elements, flights and squadrons in carrying on the tactical training of combat units. They know the type and scope of the flying required of the young graduate in the tactical units in carrying out their missions and whether or not their students can be brought up to a standard to meet those demands.

The Training Center is desirous of fulfilling whatever mission might be assigned to it and has constantly studied and frequently made recommendations with a view to improving the system of training. For example, some two years ago a plan was submitted whereby students would not only be pilots qualified in instrument flying, radio work, formation, navigation, night flying, et cetera, but would also have some knowledge of the tactical employment of aircraft and be proficient in gunnery and bombing. Another study has recently been completed and recommendations made to improve the all-round piloting ability of the graduates without lengthening the course.

The Training Center could arbitrarily graduate any percentage of students indicated by proper authority. For example, if it were placed at 95%, this could be done by simply selecting the ninety-five best students out of each hundred and graduating them. If this were done, however, tactical and other units would soon have a number of pilots incapable of complying with the War Department and Air Corps Training Directives, and, unless the missions assigned to these pilots were restricted to certain types of flying that they might be able to perform,

they would soon eliminate themselves as well as other personnel by their inability to fly.

Briefly, the mission of the Training Center has been considered to be the training of a sufficient number of pilots who are capable of assuming the duties of a junior officer in the Air Corps. As to the first part of this mission concerning the number of graduates, let us consider only the period since the passage of the Air Corps Act of 1926. From that time until the present day, the Training Center has graduated 2,287 rated pilots. Of this number only 23 were foreign officers and only 22 were enlisted men training in grade. Thus, 516 commissioned officers and 1,726 flying cadets have been graduated as rated airplane pilots. Had the proper number of these graduates been commissioned in the Air Corps and been put on extended active duty as Reserve officers, the Air Corps would be up to its strength today; that is, 1,650 Regular officers and 550 Reserve officers on extended active duty, as authorized by the Act Corps Act of July 2, 1926. As to the second part of the mission, the graduates themselves are demonstrating in the Service every day that they are capable of performing the duties of a junior officer in the Air Corps.

The following comparisons will illustrate some of the improvements effected in the Training Center. Under the "A" plan of training less than one student in five who entered the Primary Flying School graduated from the Advanced Flying School and received the rating of airplane pilot. From the time the "B" plan was placed into effect until July, 1931, approximately one student in three was graduated and rated. Since the primary training has been conducted at Randolph Field, almost one out of every two students has completed the course and received the rating of airplane pilot. Although the course has been of the same duration during each period discussed, the amount of actual flying training has been increased more than 60%, nearly three times the percentage of students are now being graduated and every graduate is a much better qualified pilot. During the past nine years, or twenty six classes, only eight students, or about one-third of one percent (1/3 of 1%) were eliminated at the Advanced Flying School for failure to make satisfactory progress in flying training.

The Training Center personnel are not completely satisfied with the results obtained today. Just as "the best race hasn't been run yet," it is more than likely that no one has yet discovered the "best" method of doing anything. Improvements will undoubtedly be made in the future. Any reasonable recommendation or suggestion toward this end is always welcome.

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WHY? WE'LL BITE

The Materiel Division Correspondent states that recently two reports have come to the attention of the Power Plant Branch which are at this writing unexplained.

The first: Lieut. Ben Kelsey, returning to Wright Field one night in a Martin B-10B, had reached the vicinity of Columbus, Ohio, when the left engine quit "as though the switches were cut." After some gas valve and ignition switch manipulating, the engine started up with the gas valve in the "off" position, gasoline flowing freely from the exhaust pipe. On starting, the flames ignited the gasoline on the wing, which also ignited the fabric rear portion of the wing. The engine then began to operate normally and, after deciding against taking a chance on the Columbus Airport fire fighting facilities, Lieut. Kelsey raced the fire to Wright Field. A few inches from the aileron the fire lost, and Lieut. Kelsey, after a few practice cloud landings, shot a "hot" flapless landing successfully at Wright Field with only a little more than half the left wing surface remaining. When asked why he didn't jump, he answered: "I had an electric train in the back for the boy."

The other report was very similar except that the cloth portion of the wing did not ignite. However, the paint was damaged.

Major S.M. Connell, also in a Martin with engine installation identical with Lieut. Kelsey's, was flying in the vicinity of Warrenton, N.C., when the right engine quit and flooded. When the fire broke out, the passenger was told to jump. Major Connell landed the plane safely.

In both of these cases the gas valve had been changed a few minutes prior, but not immediately before the incident. Attempts to duplicate the trouble by flooding the carburetor have proved unsuccessful. No faulty mechanism has been found in either installation. Cross-feed valves were open in both cases so that a by-pass valve failure should have flooded both engines. Lieut. Kelsey's left engine, Major Connell's right.

The Power Plant Branch will be satisfied when it gets its engines to work as well as the cockpits were working in these two cases. A prompt solution is hoped for by the Power Plant Branch as a result of the detailed study of the matter which is now being made.

KELLY FIELD STUDENTS FLY TO UNIVERSITIES

Aviation training flights of Kelly Field students may be routed to points in Alabama, Georgia and Louisiana, where universities are located, instead of following the usual route touching Fort Sill, Oklahoma, and Fort Bliss, Texas.

Major Robert D. Knapp, Director of Flying Training at the Advanced Flying School, Kelly Field, left recently by plane to visit the University of Alabama at Tuscaloosa, Ala.; the University of Georgia, Athens, Ga.; Alabama Polytechnic Institute, Auburn, Ala.; Louisiana State University at Baton Rouge, La., and the Georgia School of Technology.

The announced purpose of his trip was to investigate the practicability of having the students of the Advanced Flying School fly over a route which will take in the four universities along with a number of others in the southern part of the country. Such flights to university cities would create among the students in the schools more interest in the Air Corps and would give them the opportunity to see the flights and inspect the planes. Major Knapp will determine whether facilities are available at these places for the proposed flights.

Each class at Kelly Field must, before graduating, go on a 4-day routine navigation training flight, one day of which is devoted by the students to performing the necessary daily check and maintenance of the planes they use. The usual route has been to Fort Sill and Fort Bliss and return.

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CADET APPOINTMENTS FOR ENLISTED MEN

Six enlisted men of the Air Corps and two enlisted men from other branches of the military service are under orders to proceed to Randolph Field, Texas, and report to the Commandant of the Air Corps Primary Flying School on March 1, 1937, for appointment as flying cadets and assignment to the March, 1937, class, viz:

Private William C. Clark, Base Hq. & 14th Air Base Squadron, Bolling Field, D.C.

Private Melvin J. Richardson, Hq. and Hq. Sq., A.C. Technical School, Chanute Field, Ill.

Privates J.C. Bailey, Jr. and Glen W. Raker, 46th School Squadron, Randolph Field, Texas.

Private Homer C. Payne, 5th Air Base Squadron, Hamilton Field, Calif.

Private Thomas F. Carolan, 19th Airship Squadron, Moffett Field, Calif.

Private Frank J. Anneberg, Station Hospital, Fort Leavenworth, Kansas.

Private, 1st Class, Arthur G. Pinkham, 3rd Signal Service Company, Det. Hq. Co., 13th Infantry, Fort Devens, Mass.

INSTRUCTION IN "ARTILLERY MISSIONS."

The students of the Observation Section at the Air Corps Advanced Flying School, Kelly Field, Texas, are now receiving instruction in one of their most important phases of training - "Artillery Missions." This training is being conducted at Camp Stanley, Texas. A Battery (Battery "C") from the 12th Field Artillery, commanded by Captain W.E. Waters, is being used so that students may observe the actual firing from the air as well as the adjustment work. Eight days are being devoted to this phase. Captain Russell E. Randall, the Ground School instructor in Artillery Missions, is also in charge of the Camp Stanley training.

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RADIO COMMUNICATION AT BROOKS FIELD

Brooks Field, San Antonio, Texas, is very proud of their new radio installation which has recently been completed. This installation is in the office of the Operations Officer. It is complete with transmitter, receiver, and numerous other aids and gadgets which make it an excellent model for any radio station. It enables the Operations Officer to keep in touch with personnel performing any missions.

"In a recent test," says the Brooks Field Correspondent, "our new C-33 Transport went to Timpas, Colorado, to take some parts for an O-43A which had been forced down at that place. Constant communication was kept with the plane throughout the trip, and we feel that this is something for which we can be pardoned in exhibiting great pride. We feel that we are now well in the fore with regard to the radio world."

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A TOUCH OF WINTER IN SUNNY CALIFORNIA

"On a flight above the San Francisco Bay on January 5th in a BT-9," reports the News Letter Correspondent of the Air Corps Reserve activity at Municipal Airport, Oakland, Calif., "the pilot and observer blinked their eyes, rubbed their heads and finally decided that they had not fallen asleep. After a lengthy conference over the interphone and much peering through the cockpit enclosure, they agreed that it was snowing. The little BT-9 picked up her skirts and ran for quite a way before finding a quiet place under a shivering palm."

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Captain H.R. Yeager, 1st Lieuts. S.E. Anderson, W.L. Kennedy and 2nd Lt. C.L. Sartain recently ferried four O-25's to Rockwell Field, Calif., and returned to Kelly Field with four P-12's which will be used at the Advanced Flying School.

V-7217, A.C.

MAJOR LYNCH AND SERGEANT MURRAY SELECTED FOR CHENEY AWARD

For performing an act of valor and self-sacrifice worthy of the highest commendation, the Board of Air Corps officers appointed to select the person or persons deemed most worthy of receiving the Cheney Award for the year 1936, decided that this honor should go jointly to Major Frederick D. Lynch, Air Corps, and Staff Sergeant Joseph L. Murray, 1st Balloon Squadron, Air Corps.

The Board, which was composed of Cols. Rush B. Lincoln, William C. McChord, Lieut. Colonel Vincent B. Dixon, Majors George L. Usher and Edward W. Raley, Air Corps, while having before it the names of a number of Air Corps officers and men who during the past year performed acts of bravery involving risk of life, considered that the courageous conduct of Major Lynch and Staff Sergeant Murray constituted the most outstanding and meritorious act performed by any individuals eligible to receive the Cheney Award for 1936.

Major Lynch was a passenger in a free balloon which took off from Fort Sill, Okla., at 9:40 a.m., July 10, 1936, and which was piloted by Staff Sergeant Murray, whose aide was Master Sergeant Ralph J. Rumpel. Staff Sergeant Douglas M. Tucker was the fourth occupant of the balloon. The aeronauts had been in the air about three hours and 35 minutes and were traveling north, rapidly approaching the South Canadian River. Sergeant Murray decided not to cross the river, there being very few bridges and the truck following them would have had difficulty in finding them. He was preparing to land on a clear space he had observed from a high altitude and, after indicating his intentions to the men in the truck, he explained to his passengers and aide what he planned to do. The country at this particular place is very rough, and most of the hills are covered with scrub timber.

As they were flying over a valley between two hills, the balloon started to descend rapidly. Sergeant Murray immediately dropped all the ballast he thought he could afford and believed sufficient to raise the balloon over the next hill. He had used much ballast during the course of the flight in attempting to maintain the altitude decided upon before starting the flight. As the balloon approached the top of this hill, it again descended and hit the ground very hard. More ballast was released and the balloon was raised enough to clear the trees and it started traveling north along the ridge of the hill. The ballast was nearly gone by this time and what was left was barely sufficient to make a landing.

The balloon was oscillating badly at this time, but no one was alarmed and Sergeant Murray felt confident he could make a safe landing in a small clearing immediately ahead. Approaching this clearing, he started to valve the gas, and the balloon with basket still oscillating, descended slowly toward the ground. Immediately before hitting the ground, the basket seemed to stick in the underbrush.

Warning all members of the flight to remain in the basket, the pilot, with another member of the flight, pulled the rip-cord to release gas from the balloon. There was an explosion at that time and the basket turned over. It was only a matter of seconds before the entire area was a mass of flames. Major Lynch was thrown clear of the basket by the explosion. Sergeant Murray was caught in the rigging by his parachute.

Major Lynch, with utter disregard for his own safety and despite the fact that he was suffering from burns, bruises and shock, returned to the balloon basket, plunged into the wreckage, where the heat from the burning balloon and hydrogen gas was most intense, and dragged Sergeant Murray from the burning basket. Then they both ran to Sergeant Tucker, who was rolling on the ground and whose clothing and chute were on fire. They attempted to put out the fire and cut his clothes from him.

By this time several natives arrived on the scene. One of them suggested throwing dirt on Sergeant Tucker, which was done. Then Sergeant Murray lost consciousness and was placed under a nearby tree. One of the natives assisted Major Lynch in finishing the job of cutting the clothing from Sergeant Tucker. He then issued instructions to get Sergeant Rumpel out of the fire if that was possible. When the latter was removed from the ruins, he was dead. Both Sergeants Murray and Tucker were severely burned, and were taken to a hospital at Anadarko, Oklahoma. Sergeant Tucker subsequently died as the result of his injuries.

The Cheney Award which will be presented to Major Lynch and Staff Sergeant Murray was established in 1927, in memory of 1st Lieut. William H. Cheney, Air Service, who lost his life in an air collision at Foggia, Italy, on January 20, 1918. The donors of the award are Mrs. Mary L. Schofield, the mother of the deceased war-time flyer, and her daughter, Mrs. Thomas W. (Ruth Cheney) Streeter. They have jointly set aside a trust fund of $15,000, the interest accruing therefrom to be used to make the award, which is bestowed annually by the Chief of the Air Corps for an act of valor, or of extreme fortitude or self-sacrifice in a humanitarian interest, not necessarily of a military nature, but which shall have been performed in connection with

aircraft. Those eligible to receive the award are officers of the Air Corps and Air Reserve and enlisted men of the Air Corps and Air Reserve and, in the event of a posthumous award, the widow or next of kin.

A bronze plaque is struck off yearly, the name of the recipient or recipients engraved thereon, and the memento is presented together with an engraved certificate describing the act of valor performed, and either a sum of money or a suitable gift, as designated by the Cheney Award Board. Although the income from the trust fund exceeds $500 per annum, the balance is placed in a sinking fund for possible use in the event more than a single individual is recommended for the award, as is the case in the award for 1936.

The first presentation of the Cheney Award was made in 1927 to master Sergeant Harry Chapman, Air Corps, for conspicuous bravery in the airship ROMA disaster, February 21, 1922. Captain Uzal G. Ent, Air Corps, was presented the Award for 1928 for heroism during the National Elimination Balloon Race, when he rode down a burning balloon, struck by lightning, in an attempt to save his companion, the late Lieut. Paul Evert.

Captain William A. Matheny was tendered the Award for 1929 for the rescue of a companion, Lieut. Dwight Canfield, from the burning wreckage of their bombing plane which had crashed in the Nicaraguan jungles while enroute to Panama. No awards were made for the years 1930 and 1934.

For 1931, 1st Lieut. Robert D. Moor received the Award posthumously for his piloting of an airplane, disabled in an air collision, for a length of time sufficient for his passenger to save himself by a parachute jump. It was then too late for him to resort to this means of escape. Private John B. Smith also received the Award for that year for the rescue of the pilot of a wrecked and burning airplane in which he had been a passenger.

For 1932, Private Arden M. Farley received the Award for the rescue of Lieut. William H. Dum from a wrecked and burning airplane.

Lieut. W. L. Bogen, Staff Sgt. Doy D. Dodd and Sergeant Thomas J. Rogers jointly received the Award for 1933 for acts of valor during the rescue of two men trapped in a burning airplane.

The late Lieut. Robert K. Giovannoli received the Award for 1935 in recognition of his extreme bravery in the rescue of two men from a burning airplane which had crashed during a test flight. Lieut. Giovannoli lost his life in an airplane accident before the actual presentation of the Cheney Award to him.

Unfortunately, also, Lieut. Bogen lost his life last December while flying as co-pilot of a Western Air Express plane, which crashed during a fog.

MAJOR FREDERICK D. LYNCH

Major Frederick D. Lynch, Air Corps, now on duty with Air Corps troops at Fort Sill, Okla., was born on March 11, 1893, at Chicago, Ill.

He attended grammar school at Ottumwa, Iowa; high school at St. Louis, Mo., and graduated from Washington University of that city in 1915. For nearly three years he followed the profession of an accountant in civil life. During the World War he enlisted in the Field Artillery, Illinois National Guard, which was subsequently mustered into the Federal service. Shortly thereafter, he was transferred to the Aviation Section, Signal Corps, and after graduating from the School of Military Aeronautics, Texas State University, Austin, Texas, he was transferred to Kelly Field, Texas, for his flying training.

Qualifying as a Reserve Military Aviator, he was commissioned a second lieutenant on May 24, 1918, and assigned to active duty at Chanute Field, Rantoul, Ill. After further flying training at Chanute Field for several months and for a brief period at Langley Field, Va., he completed the course of instruction at the School of Aerial Gunnery at Taliaferro Field, Fort Worth, Texas, and was then ordered to duty overseas.

Following gunnery training at the Aerial Gunnery School at St. Maxient, France, and advanced flying training at the 2nd Aviation Instruction Center, he was assigned to duty as an observation pilot in the Zone of Advance. Following the Armistice, Major Lynch served as a member of the First Aero Squadron with the American Army of Occupation in Germany.

Honorably discharged from the service on August 20, 1919, Major Lynch, after passing the examination for appointment in the Air Service, Regular Army, was commissioned a second lieutenant, July 1, 1920. He received a refresher course of flying training at the Primary Flying School at Carlstrom Field, Arcadia, Fla., graduating from that school in April, 1921, following which he took advanced training as a Bombardment pilot at the Advanced Flying School at Kelly Field, Texas. He was rated an "Airplane Pilot," August 4, 1921, and remained at Kelly Field on duty as Supply Officer, 11th Bombardment Squadron, until February 25, 1922, when he was transferred to the Philippines, where he performed various duties at Kindley Field, Fort Mills, P.I.

Following his return to the United States, Major Lynch was assigned as a student and pursued a communications course at the Air Corps Technical School at Chanute Field, Ill. He then pursued a one-year course in communications at the Sheffield Scientific School, Yale University, and upon completing the course returned to Chanute Field, where he served as an instructor in communications until

November 18, 1929. He was then transferred to Kelly Field, where he served for ten months, mostly in the capacity of communications officer of the Advanced Flying School.

From September, 1930, to November, 1931, Major Lynch was on duty at Dodd Field, Fort Sam Houston, Texas, where he served as communications officer of that field and of the 12th Observation Squadron. For nearly four years thereafter he was on duty at Brooks Field, Texas, where his duties were mostly concerned with communications work. He was then transferred to his present station, Fort Sill.

STAFF SERGEANT JOSEPH L. MURRAY

Staff Sergeant Joseph L. Murray, who is now stationed with the First Balloon Company at Post Field, Fort Sill, Okla., and who holds a commission as a second lieutenant in the Air Reserve, was born at Philadelphia, Pa., February 18, 1903. He graduated from the Girard College Preparatory School at Philadelphia, and enlisted in the Regular Army on March 7, 1922. After serving at Langley Field, Va., with the Airship School Detachment, and later with the 24th Airship Service Company at Scott Field, Ill., he qualified in July, 1923, for appointment as a flying cadet and commenced training at the Balloon and Airship School at Scott Field, September 10, 1923. He completed the course of instruction at this school August 15, 1924, whereupon he was commissioned a 2nd Lieutenant in the Air Reserve. He was rated "Balloon Observer and Airship Pilot," effective August 29, 1924.

Sergeant Murray was promoted to the grade of Corporal in April, 1925; to Sergeant in September, 1925; and to Staff Sergeant in February, 1930.

Upon reenlistment in 1925, he was assigned to the 12th Airship Company at Scott Field and served in the capacity of pilot, rigger and crew chief on the various types of non-rigid airships assigned to that organization.

When the First Balloon Company was organized in May, 1929, and assigned to station at Fort Sill, Okla., Sergeant Murray was transferred to this organization.

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The Headquarters and Headquarters Squadron, 8th Pursuit Group, Langley Field, Va., now has a B-10B Bombardment type airplane which is being used to tow machine gun targets for the use of the entire Group. Heretofore the problem of firing at towed targets at altitudes higher than 10,000 feet was difficult to solve. By using this large ship designed for higher altitudes, and with a large amount of power, any size target can be easily towed at a speed which gives the attacking airplanes a fairer approximation of the speeds now encountered in attacking modern aircraft.

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SOLDIER'S MEDAL TO PRIVATE WELSH

For a deed of heroism performed while in the service of the United States Army when stationed at the Presidio of Monterey, Calif., Stanley R. Welsh, of Vallejo, Calif., received the Soldier's Medal at a review held on January 9th at Hamilton Field. Lieut. Colonel Russell presented the medal after reading of the citation by Major John M. Davies, Adjutant of the Air Base. The citation reads as follows: "Stanley R. Welsh, (Army Serial No. 6549561), Private, Headquarters Troop, 11th Cavalry, United States Army. For heroism displayed in saving a man from drowning in the Merced River, Yosemite National Park, Calif., on June 20, 1936. While sitting on the bank, Private Welsh noticed that a man was in distress out in the river about 75 yards distant. With utter disregard for his own safety he plunged into the swift current, succeeded in bringing the man to the surface and towing him to the beach where he immediately administered artificial respiration until the man was revived."

After the presentation, Mr. Welsh stood with Colonel Russell and received the review of troops - members of both the Base force and the Seventh Bombardment Group.

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UNWELCOME GRASS

A patch of green grass is restful to the eyes and generally a welcome sight. But there are exceptions. The News Letter Correspondent from Luke Field, T.H., states that war has been declared and is now being bitterly fought for the possession of Luke Field's new and widely advertised landing mat. Sinister and mysterious forces are at work beneath the mat, possibly the Menehunes (Hawaiian brownies to you), causing glorious lush green grass to grow on the flying field where it would never grow before and burst through the surface of the mat in engaging green patches.

Second Lieut. William I. Fernald, Air Reserve, Airdrome Officer, marshalling the forces at his command, recently opened a vigorous offensive with liquid chemicals, and just plain hoes and shovels, to destroy the importunate enemy. At this writing the latter is at least temporarily overcome, though the situation is fraught with uncertainty.

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The News Letter will welcome the receipt of items relating to the activities at Randolph Field, Texas.

NEW TYPE OF LANDING GEAR

Pilots from the Office of the Chief of the Air Corps and Bolling Field recently spent several days testing and making reports on a new type of landing gear for cargo airplanes. It was installed on a Douglas OA4-B Amphibian at Wright Field and the plane was brought to Bolling Field by Lieut. Pearl H. Kobey, Air Corps, for further tests. The regular retractable landing gear was moved back about two feet on the hull of the plane and fixed in the down position.

This change in the location of the landing gear placed the center of gravity well forward of the wheels, so a third wheel was fixed to the front of the fuselage. This wheel aligns itself to the direction in which the plane is traveling and keeps it in a level position instead of the usual "tail down" position. Such an arrangement precludes any possibility of the plane nosing over from the sudden application of brakes and considerably lessens the possibility of ground loops. The pilots who tested the equipment were well pleased with its performance.

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OLD WRIGHT TRICYCLE LANDING GEAR BOBS UP

"Just sixty-five miles south of Langley Field and a little over 33 years ago," says the scribe of the 33rd Pursuit Squadron, Langley Field, Va., "the Wright Brothers flew their first aeroplane, a contraption man said would not fly. It had a tricycle landing gear, and today, after all these years of aeronautical engineering, it seems as if the boys at Wright Field think that the tricycle landing gear was not so bad after all.

And now at Langley Field we watch an OA4-A equipped with about the same type of tricycle landing gear. The two main wheels have been moved back and a third wheel placed on the nose. It takes off, flys, lands and taxies all in flying position, lands down wind, cross wind or just any way the pilot cares to, and it has no tendency to ground loop at all. To see it land you would think it might nose over, but instead she rolls along, 'hands off'."

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RAIN PREVENTS INAUGURAL DAY FLIGHTS

Inauguration Day in Washington means much to thousands of people who travel long distances to witness not only the inauguration ceremonies but also the great parade that follows. Since most of the parade consists of details from all arms of the service, it would not be complete without a representation from the Air Corps droning overhead in perfect formation. Although the Air Corps was included in the parade plans, inclement weather in the form of steady rain and a ceiling below 500 feet prevented any flying. The day before the Inaugural, Major Harlan T. McCormick, leading a flight of twelve P-26's, and Major Warren A. Maxwell, leading a flight of twelve PB-2's, arrived at Bolling Field from Selfridge Field, Mich., in anticipation of joining another flight from Langley Field and supplementing similar flights from the Marine Corps at Quantico, Va., and from the Navy.

But Inauguration Day started out with a steady rain that lasted nearly all day and, though it did not prevent the ground parade, it did prevent flying.

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COMMAND AND GENERAL STAFF SCHOOL DETAILS

A total of 37 Air Corps officers were, under Special Orders of the War Department recently issued, designated as students at the Command and General Staff School for the 1937-1938 course. These officers are relieved from further assignment and duty at their present stations, effective at such time as will enable them to comply with their orders, are then assigned to station at Fort Leavenworth, Kansas, will proceed at the proper time to that station and report between August 19 and 21, 1937, to the Commandant of the Command and General Staff School for duty. These officers are --

Lieut. Colonel Floyd E. Galloway (Major) Fort Lewis, Wash.

Lieut. Colonel Leo A. Walton, March Field, Calif.

Majors George H. Beverley and Milo McCune (Captains) Barksdale Field, La.

Majors Eugene L. Eubank, Barney M. Giles, Clements McMullen and Ennis C. Whitehead (Captains), Langley Field, Va.

Major Frederick W. Evans (Captain), Captains Ray L. Owens and Robert M. Webster, Maxwell Field, Ala.

Major George C. McDonald, (Captain), Mitchel Field, N.Y.

Major Younger A. Pitts (Captain), Hqrs. 7th Corps Area, Omaha, Nebraska.

and the following-named officers now attending the Air Corps Tactical School:

Major Harold H. George

Majors (Captains) James D. Givens, Frederick M. Hopkins, Jr., John W. Monahan and Bob E. Nowland.

Captains Orvil A. Anderson, Earl W. Barnes, James M. Bevans, Lawrence J. Carr, Clinton W. Davies, Usal G. Ent, Donald F. Fritch, Robert W. Harper, John R. Hawkins, Joe L. Loutzenheiser, Edmund C. Lynch, John F. McBlain, Earl E. Partridge, James S. Stowell, Yantis H. Taylor and Wallace E. Whitson.

1st Lieuts. Joseph G. Hopkins, William A.R. Robertson and Willard R. Wolfinbarger.

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NEW MINIATURE RANGE AT KELLY FIELD
By the News Letter Correspondent

Kelly Field has a new building! As if wonders will never cease, be it hereby told in secret conclave that the Advanced Flying School now boasts the cornerstone of permanent construction is nearing completion as the new Miniature Range takes on its finishing touches. Visiting civilians, itinerant aviators, and even permanent post personnel have wondered and questioned just what that constantly growing octagonal cement structure at the extreme eastern end of the hangar line might be. It has been called everything from a grain elevator to a lethal gas chamber.

As a receptacle of incarceration it could not be improved. Towering 84 feet high, with walls of reinforced concrete two feet thick, and having an inside diameter of 60 feet, 4 inches, it is a veritable fortress. There are two balconies for student observers, at 46 feet, 10½ in. elevation, and 56 feet, 10½ in. elevation, respectively. The instructor's platform extends out from the south wall 20 feet, and is several feet above the top balcony. It is felt that all instructors will desire a safety belt firmly wired to the platform. The height is not only enough to make an aviator dizzy, but any slip of one's foot would mean a 60-foot drop.

Parachutes have been suggested as required equipment. Located around the two balconies are stations for students, each to be equipped with signal communications so they may send and receive messages. A motion picture booth is located in the top center of the building.

Similar to the method now used, a terrain board is to be installed on the ground floor on which will be represented appropriate terrain in relief and to scale, with highways and railways, and two opposing ground forces. The terrain board will have numerous perforations beneath which will be lights which may be flashed on or off from the instructor's control board to give the effect of shell and shrapnel bursts. The terrain board proper, on the floor level, is four feet above the circular pit, which allows access to the wiring and light system.

There will also be installed on the ground floor an Infantry and Artillery panel system to demonstrate one-way procedure. These panels will be illuminated and controlled by switches from the control room switchboard. The proposed arrangement is to give the effect of ground forces displaying the different panels to the airplane flying overhead. A new plan of instruction is under consideration, and with its adoption and perfection it is believed that the Infantry and Artillery courses will be more easily and accurately presented to the student. The sensing problem will be more realistic and as close to observing real fire as possible.

First, moving pictures are to be taken from the air of Artillery and Infantry in action, with the camera actually recording all types of adjustments and the sound apparatus reproducing the communication of the adjustment. These pictures will be projected on a horizontal screen installed on the ground floor. This motion picture screen is to be constructed on rollers so it could be superimposed on the terrain board without difficulty.

The motion picture booth is to be built into the top center of the building and will provide ample room for two projectors to be installed vertically.

With the actual movies as one method of illustration, still another idea is being developed to give the student practice in sensing shots and procedure. The second plan is to have the Signal Corps make animated moving picture diagrams of problems involving all types of adjustments. The student views the shots as from the airplane and proceeds with his sensings and actual ground communication. This plan has the advantage over the terrain board with lighted holes, in that the bursts appear in their normal shape as picked up by the camera or eye; they drift and disappear as they normally would, while the lights are necessarily fixed in position and size and merely represent the position of a shot.

It is felt that this new miniature Range will be a vast improvement over the old one. And the permanency of this structure leads to the hope that in the not too distant future Kelly Field may join the other air fields and boast of all new buildings too.

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THE GEM OF THE YEAR

The Douglas was flying blind. A woman passenger looked out to the right side through the window, called the stewardess, and asked, "What's that light out there?"

"That's a navigation light."

Later she moved to the other side of the ship in order to get the reading light over her left shoulder. She called the stewardess again, "What's that other light out there?"

"That's a navigation light, too."

"Now, isn't that simple? All the pilot has to do is to keep the airplane between those two lights."

Well, it isn't simple if you don't.

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There are 270 young women employed as hostesses and 42 men employed as stewards on American-operated air lines.

V-7217, A.C.

LANDING AT AN AIRPORT DURING "SOUPY" WEATHER

In a recent issue of THE AIR LINE PILOT, a monthly aeronautical publication, a chief pilot of one of the commercial airlines lets fly several sharply pointed darts at the ground men of airline organizations, particularly the traffic control tower men. First off, he advances what appear to be plausible reasons as to why airplanes are spoken of in the feminine gender, to wit:

"She made two hundred miles an hour; then she let me down."

"You push 'em left and they go right; you push 'em right and they go left; you don't push 'em and they go mad."

In view of the above mentioned lack of consideration and agreeableness, the chief pilot proposes that the Sperry Gyro Pilot be so designed that the ailerons and rudder could be turned over to the Sperry, while the pilot maintains his influence with the flippers. The advantage of this expedient is manifest. The way it is now, when making a blind approach on a beam, the pilot listens with his left ear to the radio beam, with his right ear to the traffic control tower man in order to keep him calm when he asks -

"So you're blind, eh? Well, where are you now?"

The T.C.T. man can't use this information for any purpose of aiding the plane to a landing, because the answer always is -

"All right, I'll bite. Where am I?" Or, more poetically, "Shut up."

The purpose of this inquiry is to keep the pilot from getting bored. The pilot doesn't want to know where he is. He knows that, all right. He is in a mess. What he wants to know is, where the ---- the field is.

The chief pilot urges that all pilots, faced with such cheering prattle, reply:

"We're up here. Where are you?" Now that information could be used, if he could get it. It's just as bright one way as the other.

Then the T.C.T. man says -

"Are you underneath yet?"

This is important. Depending upon this information the mighty Tower man knows whether to scratch his left side or his right side.

With the other ear the pilot listens to his company, represented by the radio operator who hopes the crack-up will be where he can see it, for it's a dull night; the flight superintendent, who wishes he had taken a look at the weather the last hour or two instead of clearing the ship in; and the weather expert, who does look at the weather, though, of course, not the actual weather - that's against the rules - but at a sheet of yellow paper which looks professional as all get out.

The operator says -

"What's your altitude? Two hundred? Ceiling is one thousand feet and visibility two miles."

Then the pilot should enter into the spirit of the joke and chortle, "Ha, ha!"

The flight superintendent says -

"If you can't land, don't do it. Go to Albany. You say that's closed in! I guess I'll have to look at the teletype."

The pilot then says - "Attaboy!"

The weather expert says -

"What's the weather?" He's simply got to get that dope so that he can tell the pilot, because that's his job - and its cold and wet outside.

The pilot, with his other ear - how are we running on ears now? Oh!

With his left hand the pilot takes a putty knife and chips a peep hole in his windshield for his left eye. In practice he won't be able to see anything with that eye - except his finish. With this same hand he controls the ailerons and flippers. With the other hand he works the throttle and pitch controls. With the other hand he holds the microphone, and with the other he handles the beam volume control and the radio switches and the tuning dials.

Now, while keeping his left eye glued on the peep hole, he corkscrews his right eye over the blind flying and motor instruments, and the altimeter and the clock and the airspeed. All of this is mighty important - at least to his creditors.

The ship acts like a broken field runner, but the pilot throws her for a loss at the end of the runway, brings her to the ramp, brushes the ice off his lap and the sweat off his face and goes into the operations office, where he is told how to fly a beam. Those boys can bring in a swivel chair every time, drift and all.

Now, if the pilot could turn over the rudder and ailerons to Mr. Sperry, he would have two hands and three eyes left for contingencies. The idea seems at least worth a good trial.

But in essence the idea is not so very new after all. Pilots since the old Wright pusher days have been turning over all controls. Where stands the aviator who can claim that he has never said, - "Here, God, you take her!"

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Second Lieut. Ralph Wm. Rodieck, of Palestine, Texas, transferred from Panama to Barksdale Field, was given extension of active duty to June 15, 1939. Second Lieut. George Kenneth Crain, Air Reserve, of Birmingham, Ala., was also assigned to active duty at Barksdale Field, his tour to terminate January 14, 1940. This date also terminates the active duty tour of 2nd Lieut. Alfred George Witter, Air Reserve, of Bennefonte, Pa., assigned to station at Mitchel Field.

V-7217, A.C.

NONCOMMISSIONED OFFICERS QUALIFIED FOR MASTER SERGEANT, AIR CORPS
Effective January 1, 1937

1 Trager, William*
2 O'Sullivan, Mortimer*
3 Binder, Michael*
4 Sanders, Aaron J.
5 Mathews, Wardell L.*
6 O'Donnell, James D.
7 Francisco, Ray
8 Bohrat, Joseph
9 Bernier, Alfred
10 Grisham, James S.*
11 Napier, Wythe J.
12 Tingle, Dan W.
13 Johnson, LeRoy L.*
14 Booth, Brainard D.
15 Bray, Neal
16 Adams, Arthur H.
17 Riley, William J.
18 Duke, Robert*
19 Arnold, George
20 Mooney, Harry
21 Small, Ballard B.
22 Glendy, Elga M.
23 St. John, Ruben
24 White, Benjamin*
25 Laver, Joe G.*
26 Maxwell, Edcil C.
27 Bollenbach, John
28 Miller, Edward
29 Wetteran, Edward W.
30 Moody, William T.*
31 Goff, Ira A.
32 Duprey, Joseph A.
33 Grimme, John P.*
34 McKnight, Charles H.
35 Klinger, Benjamin H.*
36 Carr, Lynn B.*
37 Kretz, William
38 Rohlik, Waldoe*
39 McAndrews, John
40 Bentley, Leonard L.
41 Malloy, Stephen A.
42 Hobson, Earl
43 Pearson, James
44 Ceccato, Peter
45 Walters, Clyde L.
46 Stoser, Walter
47 McNeely, Ralph
48 Suggs, John M.
49 Leffler, Charles E.
50 Kendrick, Bryan J.
51 Carpenter, Ross
52 Hohensee, Emmett F.
53 Harrison, George E.*
54 Kohn, Louis
55 Harris, Arthur H.
56 Ashby, Walter G.
57 Justice, Nye P.
58 Draper, Charles W.
59 Witsch, Henry A.
60 Winans, Edward L.*
61 Ward, Leamon V.
62 Lorimer, Robert R.*
63 Johnson, Lonnie M.
64 Davids, Ewald*
65 Gordon, Frederick
66 Moslander, Charles E.
67 Innes, Victor A.
68 Cobb, Horace W.
69 Swanson, Nels E.
70 Wing, Richard E.
71 Doyell, Clyde W.
72 Hans, Karl L.M.
73 McGhee, Lloyd H.
74 Darby, Harry
75 Shepard, Delana A.
76 Wentzell, James H.*
77 Lantz, Carl G.
78 Wheeler, Adam L.
79 Ritenour, Ervin W.
80 Herb, Donald P.
81 Schmidt, George E.
82 LeRoy, Harold D.
83 Stein, Joseph J.
84 Brown, Lee E.
85 McCartney, George D.
86 Blais, James G.
87 Haffner, Hans G.C.
88 Von Euw, John B.
89 Wiedekamp, Karl T.
90 Blackden, William H.
91 Hluchan, Charles
92 DesMarais, William
93 Auer, Adam M.
94 Jensen, Peter
95 Hill, James W.*
96 Albin, Louis B.
97 Alexander, Harry W.*
98 Cheska, Benjamin A.
99 Graham, John
100 Crone, Carmon
101 Gargus, Alvin W.*
102 Downing, Harvey J.
103 Miller, Fred P.
104 Turner, William H.
105 Hopper, Walter S.
106 Goad, Robert L.
107 Apple, William V.
108 Raymond, Edgar J.
109 Jones, Hurley D.
110 Van Matre, William H.
111 Jackson, Paul B.
112 Roberts, Carl C.
113 Hoijer, Richard E.
114 Filkins, Joseph A.
115 Grabsky, Walter*
116 Williams, Wallace
117 Schaefer, Chris J.H.
118 Willison, Thomas L.
119 Lofley, William J.
120 Peckham, Russell C.
121 Valtierra, Leobardo
122 Gibbins, Stanley K.
123 Simons, Wilbur J.
124 Baros, Rudy J.
125 Fisher, George H.
126 Thermenos, Nicholas*
127 Glasscock, Harry
128 Jewell, Arvin B.
129 Boward, Richard C.
130 Koziboski, Edward A.
131 Chambliss, John R.
132 Adams, Firman S.
133 Stanowich, Steve*
134 Warren, Luther*
135 Christian, Walter
136 Mueller, Charles
137 Merian, August
138 Fusz, Charles F.
139 Hobart, Clyde J.
140 Loomis, Sidney E.
141 Himes, Olin C.
142 Mathews, Daniel A.
143 Dreier, Elmer L.
144 Laroul, John J.
145 Glasscock, Benton D.
146 Myers, Allen G.
147 Fitzgerald, John E.
148 Palmer, Clarence A.
149 Kelly, Robert J.*
150 Smith, Alfred N.
151 Logsdon, Jewel G.
152 Casto, Clyde R.
153 Moorhead, William B.
154 Cattarius, Adolph
155 Thompson, Benton T.
156 Hoffman, Carl
157 Thomas, Robert H.
158 Tupper, Hobson
159 Thomas, Edwin D.
160 Sampson, Harold F.
161 Baldwin, Thomas J.
162 Ferrell, Bruce R.
163 Clark, Irvin L.
164 Craig, Don J.
165 Bell, Charles C.
166 Jones, William L.*
167 Dombeck, Jacob S.
168 Mick, Vernon
169 Stolte, Arthur
170 Lawrence, Harry E.*
171 Johnson, Harold V.
172 Waters, Claude G.
173 Bosser, John C.
174 Swisher, Douglas M.
175 Moore, Virgil
176 Casey, Patrick T.*
177 Freshwater, Glenn E.
178 Parrett, Raymond C.
179 Burroughs, John J.
180 Wright, Lee R.*
181 Wallace, John R.D.
182 Revert, Artie L.
183 Waddell, Walter A.
184 Forrest, James A.
185 Freathy, Albert E.
186 Hartley, Ernest N.
187 Henneck, Michael P.
188 Townsend, William B.
189 Fox, William B.
190 Olson, Gilbert
191 Scott, Elliott
192 Redifer, Karl B.
193 Randles, Arthur E.
194 Hughes, Raymond J.
195 Pope, William E.
196 Faust, Carl M.
197 Miller, Joseph J.*
198 Silvers, Lee
199 Gossett, Henry
200 Marth, Hugh J.
201 Reist, Emil
202 Akers, Thornton
203 Tomberlin, George D.
204 Waytulonis, Victor M.

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205	Foster, Edwin C.	216	Brown, George D.	227	Siebenaler, Frank J.
206	Hamilton, Robert E.	217	Scott, Grover B.	228	Hahn, Richard*
207	Grossman, Paul	218	Axford, Leo W.*	229	Cayhue, Arthur H.
208	Callaghan, George	219	Harmon, William T.*	230	Hewitt, Albert G.
209	Croy, William D.	220	Brees, William M.	231	Dryer, Howard H.
210	Junkert, Albert G.	221	Crawford, Wallace W.	232	Grey, Joseph R.
211	Walsh, Lambert C.	222	Field, Charles B.	233	Fulkrod, Benjamin F.
212	Gray, Henry H.	223	Dozier, John	234	Totman, Theodore C.
213	Herman, Leo I.	224	Schooler, Oscar H.	235	Johnson, Lloyd N.*
214	Mitchell, Gregory A.	225	Holt, Jewel A.*	236	Mannion, Martin D.
215	Ferguson, Archie L.	226	Philapy, Russell L.	237	Hudson, Littleton

NOTE: Names marked with an asterisk denote the grade of First Sergeant. All others carry the grade of Technical Sergeant.

It is hoped to publish the list of Staff Sergeants eligible for promotion to the grade of Technical Sergeant in the February 15th or, at the latest, March 1st, issue of the News Letter.

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7TH BOMB. GROUP CONDUCTS CHEMICAL WARFARE SCHOOL

The 7th Bombardment Group, Hamilton Field, Calif., conducted its first Group Chemical Warfare School just before the 1936 Christmas holidays. One officer and two enlisted men were selected as students from each of the 9th, 11th, and 31st Bombardment Squadrons, the 88th Reconnaissance Squadron, and the 7th Bombardment Group Headquarters Squadron. The 5th Air Base was also represented by three students, making a class of eighteen.

Classes were held daily, from 11:00 to 12:00, over a period of ten days. A variety of subjects were covered as thoroughly as possible in what turned out to be a surprisingly limited amount of time. Chemical agents, gas mask drill, individual and collective protection, chemical weapons and munitions, training methods, care of equipment, and probable Air Corps use of chemical agents were some of the subjects taken up. The course wound up with a demonstration of the new "tomato can" method of laying down heavy concentrations of mustard gas from low flying attack planes.

The officers and soldiers who attended the school will act as instructors in their squadrons during the months of January, February and March, in preparation for the Wing Manoeuvers in April, when it is expected that each squadron must defend its airdrome, its personnel and its equipment against chemical attacks to be launched by squadrons of the 17th Attack Group.

Instructors detailed for the school were 1st Lieut. L.O. Peterson and 2nd Lieut. R.E. Jarmon. Both officers had graduated from the First Special GHQ Air Force Officers' Course held at the Chemical Warfare School, Edgewood Arsenal, Md., during the month of May, 1936.

Students attending the school were: Major R.E. Morrison, 2nd Lieuts. J.E. Shuck, E.W. Virgin, R.C. Kugel, H.R. Volin, L.A. Walker,Jr., Technical Sergeant H.B.R. Adams Staff Sergeants A.R. Levesque, F.E. Deyo, Sergeants B.I.Doughty, O.C. Yeager, Corporals C. Dixon, L.E. Capps, Privates, 1st Class, J. Gardner, V.L. Richardson, Privates O.R. Kamstra, R.W. Echkardt and J. Mathison.

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The News Letter Editor would welcome the contribution of items covering activities at March Field, Calif., and Wheeler Field, T.H.

LT. KNIERIEM AND PVT. ROBERTS DIE IN CRASH

Second Lieut. Herbert E. Knieriem, Air Reserve, pilot, and Private, 1st Class, Hartley E. Roberts, radio operator, of Hamilton Field, Calif., crashed to their deaths on the night of January 4th. Their plane, a B-10B Bomber, was one of two sent out by the 11th Bombardment Squadron for a training flight over the San Joaquin Valley. They left the field at 7:00 p.m., and were due to return at 10:00 p.m. Having completed their mission, they were returning to the base when heavy winds and blinding rain squalls were encountered in the vicinity of the Bay Area, and especially around Hamilton Field. The radio station at Hamilton Field was in communication with Private Roberts up until 9:50 p.m., and had sent out the warning to land as soon as possible, as there was imminent danger of the blinding curtain of rain closing in on the field. Private Roberts answered with an affirmative "OK."

What happened after that is a matter of conjecture. His flight leader, Lieut. A.K. Dodson, landed at 10:55 p.m., but, due to the heavy winds, was forced off the paved runway and escaped by a narrow margin from being blown over. Lieut. Knieriem was coming in for the landing when the squall closed in, shutting off the view and necessitating the need of altitude.

After a search of twenty hours, the wreckage was found scattered over an area of 300 yards radius in the northern part of San Pablo Bay, some seven miles from the air base. Part of the fuselage was found in one spot, while almost 200 feet away were found the engines, giving mute evidence of the terrific impact. All signs indicated that the plane was flying at a speed of 200 miles per hour or better.

Up until the time of this writing, no trace of the bodies of the two men has been found. Divers from the Navy and the Army blimp from Moffett Field assisted searching parties, but all to no avail, necessitating the notation "Missing in line of duty" being placed after the names of both men.

Lieut. Knieriem was born February 7, 1906, at Corbett, Idaho. After graduating from grammar schools and high school he attended

the Modesto, Calif., Junior College for two years, and for 2½ years thereafter he attended the San Jose State Teachers College, Calif., from which he graduated in June, 1929. For 4 years he was affiliated with the 184th Infantry, California National Guard, and his vocation in civil life was that of an instructor in manual training at the city schools of Visalia, Calif.

Enlisting in the Air Corps, he served with the 75th Service Squadron, Wheeler Field, T.H., from August 26, 1931, to September 20, 1932, and with the 6th Pursuit Squadron, Wheeler Field, to October 2, 1933, when, passing the examination for appointment as a Flying Cadet, he was sent to the Air Corps Training Center for primary flying training at Randolph Field, Texas. He completed the course of instruction in June, 1934; was transferred to the Advanced Flying School, Kelly Field, Texas; specialized in Bombardment Aviation; graduated October 13, 1934; was rated an "Airplane Pilot," effective that date, and assigned to duty under his Cadet status for the period of one year with the 11th Bombardment Squadron at Hamilton Field, Calif. He was then commissioned a second lieutenant in the Air Reserve and remained a member of the 11th Bombardment Squadron until his untimely death.

Private Roberts was born on October 16, 1906, at Hagerman, Idaho. He enlisted in the Coast Artillery on June 1, 1928, and transferred to the Air Corps on November 7th, of that year, serving with the 23rd Bombardment Squadron at Luke Field, T.H., until August, 1931, when he was transferred to Chanute Field, Rantoul, Ill., where he pursued the course of instruction in parachute rigging at the Air Corps Technical School.

Following his graduation as a Parachute Rigger, November 13, 1931, Private Roberts was assigned to the 11th Bombardment Squadron, then stationed at March Field, Calif., and his service with this organization was continuous from that time.

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

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TRAINING IN THE 9TH BOMBARDMENT SQUADRON

Normally, one month of good weather is required to complete bombing for approximately 20 officers. However, the 9th Bombardment Squadron, Hamilton Field, Calif., has found it difficult to train its officers within the past three months, due to extremely poor weather conditions.

Heavy forest fires in the northwest and 100 miles to the south of Hamilton Field cast a blanket over the West Coast for almost two full months. These fires started in October and lasted throughout November. At times this blanket of smoke covered altitudes from zero to seven thousand feet. Only at altitudes greater than 7,000 feet could a pilot have good visibility. This smoke haze presented almost as great a problem as fog. On the few missions which were flown during these two months, it was necessary for the pilots to fly by instruments with no aid from the horizon.

An approximate compass course was flown toward the target. When the target became visible to the bombardier, he made last minute corrections and aided the pilot to get accurately on course. Usually the bombardier did not pick up the target until within two or three miles of it. Since most of this bombing was performed at airspeed in excess of 160 miles per hour, the short time which the two to three miles left for the pilot to get accurately on course, the bombardier to set up his drift and rate of travel can be appreciated.

"It is hoped that the weather conditions improve enough to complete the bombing satisfactorily during the balance of the fiscal year," says the Hamilton Field Correspondent.

The 9th Bombardment Squadron is developing its technique in bringing a formation through a fog area where favorable weather conditions exist at either end of the area.

The Squadron leader, upon approach to the area, announces over his radio the altitudes for each flight, the calibrated airspeed and the magnetic heading to be flown. The first flight flies the exact thousands of feet altitude and the second the five hundred and, where there is a third flight, it flies the exact thousands as assigned to the first flight. Thus, with three flights, "A," "B" and "C," and with 7,000 feet sufficient altitude to clear all obstacles, "A" Flight would be assigned the altitudes 7,000', 8,000', 9,000'; "B" Flight, 7,500', 8,500', 9,500'; "C" Flight, 7,000', 8,000' and 9,000'.

The squadron is then put in right echelon, and circling to the left the airplanes leave in their respective order at one minute intervals, flying the heading, altitude and airspeed assigned.

As soon as the formation has cleared the fog area, the squadron commander announces over his radio, "Fog area cleared, assemble at _____ feet," - an altitude above those assigned the airplanes. He then ascends to the announced altitude and begins circling to pick up the squadron. As each airplane clears the fog area and spots the squadron commander, he joins in formation with him. As soon as the entire squadron has joined the squadron commander, the flight leaders leave the formation to be joined by their wing men and then return to normal javelin formation. With the perfection of technique, the altitudes between airplanes may be decreased.

This technique has not yet been used in actual fog condition. During the recent field exercises at Stockton, Calif., the squadron used it, assuming that the fog covered a definite area, and the pilots going under the hood during the time necessary to cover that area.

This Squadron has had success in problems of this kind, and believes this technique to be the answer to the problem of moving formations of Bombardment through fog areas. Such technique is necessary in areas such as the Pacific coast where localized fog may occur.

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Major Walter L. Miller (Captain), Air Corps, stationed at Randolph Field, Texas, is under orders to proceed to his home and await retirement.

RESERVE COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets of the Air Corps, members of Class No. 24-B which graduated from the Advanced Flying School, Kelly Field, Texas, February 15, 1938, and who will shortly complete their year of active duty with Air Corps tactical units, under their Cadet status, have been recommended for commission as Second Lieutenants in the Air Reserve on March 1,1937, and to be placed on extended active duty on the day following.

The names of these Flying Cadets and the stations at which they are now serving follow:

Barksdale Field, Shreveport, La.:	
Bruce, Bertrand B.	Los Angeles, Calif.
Camp, Wilbur D.	Arlington, Texas
Campbell, Arch Graham	Fort Worth, Texas
Fariss, Wolcott Austin	Sacramento, Calif.
Hawes, E. Hugh	Seedrift, Texas
Lessig, Cecil Parker	Salina, Kans.
Stevens, Kermit D.	Portland, Ore.
Wade, David	Minden, La.
Whitt, John Doyle	Austin, Texas
Wood, Robert Carroll	Haynesville, La.
Young, Harry Blake	Birmingham, Ala.
Brooks Field, San Antonio, Texas:	
Harcos, Bela A.	Los Angeles, Calif.
Ryder, Robert W.	Minneapolis, Minn.
Hamilton Field, Calif.:	
Finn, Ryder Waldo	McCoy, Ore.
Hayes, William L., Jr.	Sacramento, Calif.
Walker, David Henry	Sacramento, Calif.
Selfridge Field, Mt. Clemens, Mich.:	
Johnston, Robert Loughery	Bellevue, Pa.
Marion, Charles Emlen	Detroit, Mich.
Langley Field, Va.:	
Cavenah, Kenneth Andrew	Helper, Utah
Eakin, John Hitt	Hudson, Ohio
Gibson, Kenneth H.	Salt Lake City, Utah
Johnson, Lowell F.	Lafayette, Ind.
Longacre, Clarence Kinney	Williamsport, Pa.
Ruster, Chris H.W.	Waco, Texas
Willoughby, Earl	El Centro, Calif.
March Field, Calif.:	
Brown, Nelson T.	Tulare, Calif.
Hardy, John Spencer	Logansport, La.
Reynolds, Elbert D.	Beaumont, Texas
Warren, Beverly Howard	Plainview, Texas
Mitchel Field, L.I., New York:	
Burnham, Robert F.	Battle Creek, Mich.
Creer, William Edward	Spanish Forks, Utah
Donicht, Harry Louis	Glencoe, Minn.
Helfert, Howard W.	Sioux Falls, S.D.
Lancaster, Charles C., Jr.	Lexington, Ky.
Olinger, Robert L.	Angola, Ind.
Sexton, Robert Curtis	Los Cruces, N.M.
Sherman, Willard E.	Mt. Vernon, S.D.
Wackwitz, Ernest F., Jr.	Rockville Center, N.Y.
Walker, Audrin R.	University, Ala.

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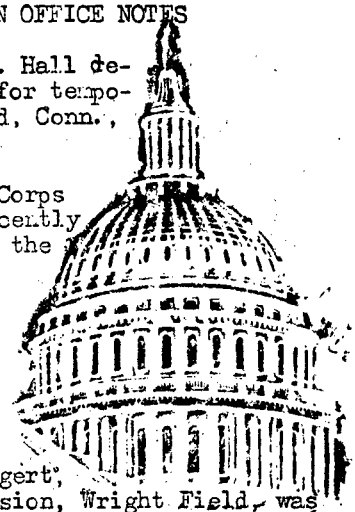
Recent operations of the 31st Bombardment Squadron, Hamilton Field, Calif., were devoted mainly to instrument flying and dead reckoning navigation. Seventy-five percent of the officers qualified in instrument flying, and the navigation training is well under way.

WASHINGTON OFFICE NOTES



Colonel Chalmers G. Hall departed January 27th for temporary duty at Hartford, Conn., and New York City.

Officers from Air Corps stations who were recently on temporary duty in the Chief's office were: Lieut. Colonel Carl Spatz, from Langley Field; Major L.P. Hickey and Captain E.R. McReynolds, Langley Field

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Major Howard Z. Bogert, of the Materiel Division, Wright Field, was in Washington January 18th, attending a meeting of the National Advisory Committee for Aeronautics.

Recent visitors to the Chief's Office were: Major W.C. Morris, Instructor, 37th Division Aviation, Ohio National Guard, Cleveland; Capt. W. H. Hardy, from Kelly Field, Texas, and Captain A.Y. Smith, of Langley Field, returning from a ferrying trip.

Captain John J. Honan, J.A.G. Dept., returned from temporary duty at Wright Field.

Major A.W. Marriner departed January 21st for temporary duty at Wright Field.

Lieut. Colonel G.E. Brower departed for New York City January 25th to attend meetings of the Institute of Aeronautical Sciences and the Aviation Show.

Lieut. Colonel H.H. Young, who had a siege of the "flu," returned to duty January 29th.

Lieut. Colonel Ross G. Hoyt, of the Information Division, returned to duty January 28th after ferrying an C-46 from the West Coast to the Boston Airport.

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ACCURACY PLUS

Near the first of the year, the Air Corps detachment at Peter Pan Airport, Pine Knot, Calif., was snow-bound for a week. A record five-foot snowfall blocked both roads into the Big Bear Valley, in which the airport is situated. Radio messages indicated an impending food shortage. The 19th Bombardment Group was then ordered to drop food and other supplies to the detachment personnel at the camp.

Flying Cadet Ketcham, 30th Bomb. Sqdn., ordered to deliver the supplies to the camp, flew a B-10B, with Flying Cadet Boyd and Corporal Wellwood as crew. Some of the supplies were attached to parachutes, while others were wrapped so that they could be dropped in the snow with no damage. After trying several approaches to determine which one was most favor-

(Continued on Page 22)

BIOGRAPHIES

LIEUT. COLONEL CLINTON W. HOWARD

Lieut. Colonel Clinton W. Howard, Air Corps, now attending the Army War College, was born at Brockton, Mass., November 27, 1890. After attending Clark University at Worcester, Mass., for two years, he received appointment as cadet at the United States Military Academy, from which he graduated June 12, 1915, when he was appointed a second lieutenant and assigned to the 3rd Field Artillery.

He served at Sparta, Wis., to September 20, 1915; at Fort Sheridan, Ill., as instructor at the First Training Camp to October 15, 1915; at Fort Sam Houston, Texas, to November 16, 1915, being assigned to the 4th Field Artillery on November 2nd. He served with this regiment at El Paso, Texas, to March 18, 1916, and then with the Punitive Expedition into Mexico. He was promoted to 1st Lieutenant, July 1, 1916.

Attached to the Aviation Section, Signal Corps, July 7, 1916, Col. Howard completed flying training and received the rating of Junior Military Aviator, April 6, 1917, which automatically promoted him to Captain. He served as Supply Officer at the Signal Corps Aviation School, San Diego, Calif., to August, 1917, and was then transferred to Post Field, Fort Sill, Okla., and assigned to duty as Officer in Charge of Flying. In March of 1918, he was transferred to Langley Field, Va., where he was commanding officer of the School for Aerial Observers until August 15, 1918. From that date until March, 1919, he was in command of Langley Field and, after several weeks' duty at Rockwell Field, Calif., as Officer in Charge of Maintenance and Supply, he was assigned to the command of the Air Service Flying School at Payne Field, West Point, Miss.

Col. Howard assumed command of Post Field, Fort Sill, Okla., on January 10, 1920. In July of that year he was placed in command of Pope Field, Fort Bragg, N.C., and remained on this duty until October 28, 1931, when he was assigned as student officer at the Air Service Engineering School, McCook Field, Dayton, Ohio. His graduation from this school in August, 1921, was followed by duty for a period of two years as a student at the Massachusetts Institute of Technology, Cambridge, Mass. He then returned to McCook Field for duty in the office of the Chief Engineer, Engineering Division. He was appointed Chief Engineer of this Division in July, 1924, and remained on this duty for a little over a year, when he was transferred to foreign service, serving in the Philippines as Commanding Officer of the 4th Composite Group and Nichols Field, to December, 1927.

Assigned to duty at the Materiel Division, Wright Field, Dayton, Ohio, Col. Howard served as Chief of the Airplane Branch until August, 1928, and as Chief of the Experimental Engineering Section (later the Engineering Section) until January, 1934, when he was assigned to the Office, Chief of the Air Corps, Washington, D.C., where he was on duty in the Training and Operations Division for a year, and thereafter, until August, 1935, he served in the capacity of Assistant Executive.

After completing the one-year course at the Army Industrial College, from which he graduated in June, 1936, Col. Howard was assigned as student at the Army War College.

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LIEUT. COLONEL BENJAMIN G. WEIR

Lieut. Colonel Benjamin G. Weir, Air Corps, now on duty in the Panama Canal Department as Commanding Officer of Albrook Field and the 16th Pursuit Group, was born at Springfield, Ohio, July 25, 1891. Upon his graduation from the U.S. Military Academy, June 12, 1914, he was commissioned a second lieutenant and assigned to the 4th Infantry. He served with his regiment at Vera Cruz, Mexico, September 16 to November 19, 1914; at Galveston, Texas, to September 4, 1915; in the Brownsville, Texas, District, to June 11, 1916. Attached to the Aviation Section, Signal Corps, he was assigned as student at the Aviation School at San Diego, Calif., and, upon the completion of his flying training, his next tour of duty was at Kelly Field, Texas, where from July 12, 1917, to August 31, 1917, he commanded the 3rd Aero Squadron. He was transferred with this organization to Post Field, Fort Sill, Okla., and was stationed there until March 19, 1918. Following duty at Langley Field, Va., as director of the School for Aerial Observers, and for a short period as Engineer Officer, to February 5, 1919, Col. Weir was transferred to Washington, D.C., for duty in the Office of the Chief of Air Service as Assistant to the Chief of Engine and Plane Maintenance Section, Supply Group to September 7, 1919.

Transferred to the Air Depot at Fairfield, Ohio, he was on duty as Engineer Officer to January, 1920, and Commandant of the Stockkeepers School until October 8, 1921, when he was assigned to the command of the Little Rock, Ark., Air Intermediate Depot. In September, 1922, he sailed for duty in the Philippines, where he commanded Kindley Field and the 2nd Observation Squadron until March, 1923, and Nichols Field and the 4th Composite Group to September, 1924. Upon his return to the United States, he served as Commanding Officer, 7th Division Air Service, Marshall Field, Fort Riley,

Kansas, for eight months. For the last three months of this period he also assumed the duties of Commanding Officer of the 16th Observation Squadron and of Richards Field, Kansas City, Mo.

From September, 1925, to March, 1926, Col. Weir was on duty as student at the Army Industrial College, Washington, D.C., and then as Procurement Planning Representative, Air Service, New York City, to August 23, 1929, when he was assigned as student at the Air Corps Tactical School at Langley Field, Va. His graduation from this school in June, 1930, was followed by a two-year period of duty as student at the Command and General Staff School at Fort Leavenworth, Kansas.

Following his graduation from Fort Leavenworth, Col. Weir served as an instructor at the Infantry School at Fort Benning, Ga., until September, 1936, when he was ordered to duty in Panama.

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PHYSICAL EFFECTS IN ALTITUDE FLIGHTS

In a memorandum report prepared in the Engineering Section of the Air Corps Materiel Division on the physiological effects of flight in the Transcontinental and Western Air high-altitude Northrop Gamma airplane at altitudes above 30,000 feet, the conclusions were stated as follows:

a. The oxygen equipment used in the Northrop Gamma airplane was capable of maintaining normal human efficiency to altitudes of 35,500 feet and above 30,000 feet for a period of 1-3/4 hours only under conditions of almost complete inactivity. A marked degree of oxygen-want existed above 30,000 feet, such that a small drop in oxygen pressure or moderate activity produced a comatose condition. This equipment, while it operated satisfactorily and is the most efficient of its kind, is not satisfactory for routine military or commercial use at altitudes above 30,000 feet because of the method of administration, because of the narrow margin of safety and because of the chronic oxygen-want which results in ultimate inefficiency of personnel, followed by undue fatigue and physical illness. It is not satisfactory for military use due to the fact that liquid oxygen is not readily available in war.

b. The sudden removal of the oxygen supply at 30,000 feet produces gross mental and physical inefficiency in from 30 to 60 seconds and induces complete unconsciousness in 60 to 90 seconds.

c. A descent from 30,000 feet at the rate of 2,000 feet per minute without oxygen results in unconsciousness after 90 seconds and gross inefficiency for nine minutes or until about 12,000 feet is reached.

d. Severe oxygen-want may cause mental retardation and confusion for 30 minutes after the oxygen-want has been relieved.

e. Ascent to 30,000 feet and above at a rate of 1,000 feet per minute may cause joint and muscle pains of unknown origin.

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AUTOGIRO ACTIVITIES AT FORT SILL

The Y G 1 A Autogiro is still undergoing test under the direction of the Autogiro Board of the Field Artillery School at Fort Sill, Oklahoma. Due, however, to adverse weather conditions during the last few weeks and maintenance troubles, very little has been accomplished since the latter part of December. The News Letter Correspondent hopes that the maintenance mechanical troubles will be ironed out in the near future and maintenance troubles will settle down to a mere routine.

During the middle of January, Mr. Kellett, of the Kellett Autogiro Co., was an overnight visitor at Fort Sill.

One of the three pilots now on duty with the autogiro at Fort Sill will be ferried to the Kellett factory at Philadelphia in the near future to take delivery on another autogiro, to be ferried to Langley Field, Va.

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The long anticipated event, namely, the arrival at Fort Sill from Wright Field, Ohio, of the YG1A, came off on December 8th. The autogiro or "Jeep," as it is better known to the enlisted men, was piloted by Lieut. E.S. Nichols, Air Corps, of Langley Field. The "Jeep" was welcomed by quite a large crowd, including the Commandant and higher ranking officers of the Field Artillery School, civilians from Lawton, Okla., numerous newspaper reporters and photographers. Lieuts. Gregory and Nichols, aptly dubbed the "Windmill Salesmen," were on detached service at several stations carrying out tests with the "Jeep" before coming to Fort Sill with it. Their mission at this station is to carry out various tests in artillery adjustments, reconnaissance tests in artillery adjustments, etc., with a board of officers from the Field Artillery School to determine the suitability of the "Jeep" as an observation plane to work with the Field Artillery.

Says the News Letter Correspondent: "The 'Jeep' will remain here, on test, for a period of about six weeks, but to date, after numerous tests, it is not known whether or not the 'windmill salesmen' have sold their pet to the Artillery."

Our Correspondent adds that the two 'windmill salesmen' mentioned above were joined by another budding 'salesman' on December 30, 1936, when Lieut. Snyder arrived from Brooks Field, Texas, for three months instruction with the "Jeep."

GOOD WILL FLIGHT TO COLOMBIAN REPUBLIC

A formation flight of five new B-10B planes belonging to the 7th Observation Squadron cleared the airdrome at France Field, Panama Canal Zone, bound for Bogota Colombia. The first stop enroute was at Medellin, Colombia, some 416 miles from the Canal Zone. There the planes were refueled and remained on the ground for about one hour, during which time the personnel of the flight were greeted by high officials of that town. After the planes had been serviced by the enlisted men, with the cooperation of a few of the Pan American Airways employees stationed at the field, the flight proceeded to the capital of the country.

Due to the high mountains on the route from Medellin to Bogota, it was necessary for the pilot to maintain a very high altitude in order to clear some of the high snow-covered peaks. Arriving over Bogota, the flight personnel noted the rather unusual location of this capital city - on the side of a mountain over 8,700 feet above sea level. Bogota, with a population of about 300,000, has an entirely different climate than the Canal Zone, although it is in the tropics and much closer to the equator. Because of the rarefied condition of the atmosphere, the officers and enlisted men of the flight found it difficult to breathe freely in the strange air.

Arriving over Bogota, Major Willis R. Taylor led the Squadron in perfect formation in a review over the capital in salute to the Colombian government. At the Municipal Airport, Scadta Field, a Colombian guard of honor was drawn up awaiting the landing of the airplanes.

The entire flight was welcomed by the high officials of the Colombian government. The officers and enlisted men were escorted to the Granada Hotel, the most luxurious hostelry in the city, where they were quartered for their short stay. Every courtesy and respect were shown to the men who participated in this Good Will flight.

On the morning of December 17th, the flight proceeded to Cali, Colombia, where the primary military and flying school is located. Here, also, the flight was received with as great a welcome as was accorded it at Bogota. Incidentally, the officials of this school are composed mainly of former American Army Air Corps men. The town of Cali appeared to be a rather pleasant place, the climate of which is about as ideal as that of San Jose, Costa Rica, which in general is much better than that of Bogota.

After remaining overnight in Cali, the flight left on the morning of the 18th on a non-stop journey to France Field.

Officers who participated in this Good Will flight were: Majors Willis R. Taylor, flight commander; Charles R. Glenn, Flight Surgeon; Captain Charles A. Ross; 1st Lieuts. John A. Feagin, navigator; Isaac W. Ott, engineering officer; Richard M. Montgomery; Ernest P. Gabel, Billeting officer; Thomas B. Hall, supply officer; James D. Underhill; Frederick W. Ott; David D. Graves; William H. Maverick; William D. Eckert, and 2nd Lieut. William B. Keese, operations officer. The enlisted men on the flight were: Crew Chiefs - Sergeant Henry T. Swanson, Corporal Guy H. Groco, Jack P. Merril, Joseph J. Benedetti; radio operators - Joseph J. Zizzi and Edward W. Pictras.

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ACCURACY PLUS

(Continued from Page 15)

able, the supplies were dropped. "And so great was the accuracy of the bombing team," declares the News Letter Correspondent, "that one of the free bundles dropped through the roof onto the kitchen table. Now that, gentlemen, demonstrates technique."

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NAVIGATION FLIGHT BY ADVANCED FLYING STUDENTS

Orders were issued by the Secretary of War, authorizing the Maintenance and Navigation flight of the present class at the Advanced Flying School, Kelly Field, which is expected to graduate on February 17th, next.

This flight, which culminates the year's flying training, is designed to give the student individual navigation over the Federal Airways, using all types of aids to navigation, together with group navigation in formation, and maintenance experience while on field maneuvers.

The flight schedule for this class has been arranged to include stops at a General Headquarters Air Force station, the Air Corps Tactical School, and several colleges having R.O.T.C. units. The trip is expected to prove of value not only by its own training but by observation of actual service operations. The stops at the various colleges will allow mutual exchange of ideas between the students, and give the R.O.T.C. an opportunity to inspect the visiting Air Corps Advanced Flying School students.

All sections are scheduled to depart from Kelly Field on February 2nd for Barksdale Field, Shreveport, La. They will inspect the field there in the afternoon and remain overnight. All except Pursuit are routed direct and at intervals for the purpose of individual navigation. The Pursuit Section will go via Hensley Field, Dallas, individually.

On the second day, all sections fly formation to Maxwell Field and thence to Tuscaloosa, Ala., where they will visit the University of Alabama and remain overnight.

On the third day, the Attack Section goes to Maxwell Field; Observation flies to Athens, via Birmingham, Ala.; Pursuit and Bombardment to Athens, Ga., via Atlanta, Ga. These three sections will remain overnight at the University of Georgia.

A mass flight to Atlanta will be made on the fourth day to visit the Georgia School of Technology.

Note: Pages 19 to 22 are omitted from this issue.

V-7217, A.C.

On the fifth day, all sections fly in mass formation to Auburn, Alabama, where they visit the Alabama Polytechnic Institute until 3:00 p.m. They proceed from there to Maxwell Field to visit the Air Corps Tactical School.

The sixth day will be spent in maintenance of the airplanes and inspecting the Tactical School.

On the seventh day all sections in formation will fly to Baton Rouge, via New Orleans, to visit Louisiana State University, remaining overnight. Eighth day, return to Kelly Field via Houston or Galveston.

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WINTER TESTS OF EQUIPMENT BY GHQ AIR FORCE IN SELFRIDGE FIELD AREA

The functioning of the trim and speedy new airplanes with which the General Headquarters Air Force of the U.S. Army is equipped will be tested under severe winter conditions in the Selfridge Field, Michigan, area from February 1st to 24th, 1937. Details of the tests were just made public by Brigadier General Henry C. Pratt, commanding the 2nd Wing of the GHQ Air Force, Langley Field, Va., whose command is charged with responsibility for conducting the tests.

"We are not only going to test the performance of our Pursuit, Attack and Bombardment airplanes under severe winter conditions," General Pratt declared, "but we will test the efficiency of ground and flying personnel under these conditions and test new flying clothing, lubricants and maintenance equipment."

Over 300 enlisted men and 100 officers will converge on Selfridge Field from all points as far distant as Barksdale Field, La.; Mitchel Field, L.I., N.Y., and Langley Field, Va. Selfridge Field will furnish one squadron of the 1st Pursuit Group as a participating unit, and Selfridge Field has been designated as the operating base.

The participating units have been organized into the "Provisional Cold Weather Equipment Test Group," and Colonel Walter H. Frank, Commanding Officer, Mitchel Field, has been designated to command the Provisional Test Group, which will consist of:

27th Pursuit Squadron, Selfridge Field,
Major Warren R. Maxwell, Commanding.
8th Attack Squadron, Barksdale Field, La.
Major Lester Maitland, Commanding.
1st Bombardment Squadron, Mitchel Field, N.Y.
Major Claude Duncan, Commanding.
Hq. and Hq. Detachment, Provisional Cold Weather Test Group, Mitchel Field, N.Y.

All personnel and supplies for the tests will be transported by air in nine new Douglas Transport 16-passenger airplanes and two Lockheed Electras, in addition to the Bombardment, Pursuit and Attack airplanes of the tactical units.

The necessity for conducting winter tests of cold weather equipment was realized some years ago, and such tests have been held during several winters in various localities from New England to Montana. Cold weather requires the use of lubricants which will not congeal and which at the same time retain their lubricating qualities and thus permit the proper functioning of the various mechanisms and gadgets essential to military airplanes. Years ago skiis as a substitute for landing gears were tried, but have been abandoned in favor of conventional wheels on cleared runways. Protective clothing for airplane combat and maintenance crews presents a problem toward the solution of which much progress has been made. The last winter tests were held in New England in February, 1936, and the present tests are a continuation. Complete answers to all the problems involved will probably not be secured for several years to come.

Officers and civilian engineers from the Materiel Division of the Air Corps at Dayton, Ohio, will be present to supervise the numerous tests of equipment to be conducted.

Present plans call for operations being conducted simultaneously from the Selfridge Field Gunnery Camp, Camp Skeel, Oscoda, Michigan, and from the base at Selfridge Field.

It is anticipated that numerous high ranking officers of the Army will visit Selfridge Field on visits of inspection during the tests. These will probably include Major General Frank M. Andrews, Commanding General, GHQ Air Force, Langley Field, Va.; Brigadier General Henry C. Pratt, Commanding General, 2nd Wing, GHQ Air Force, Langley Field, Va.; Brigadier General Gerald C. Brant, Commanding General, 3rd Wing, GHQ Air Force, Barksdale Field, La., and possibly Major General Oscar Westover, Chief of the Air Corps, and Major General Charles D. Herron, commanding the 6th Corps Area, Chicago, Ill.

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Arrangements were completed by the Air Reserve officers of the Second Corps Area and the Reserve officers of the New York Air Corps Procurement District for a dinner at the Hotel Algonquin in New York City, on Tuesday, February 2nd, in honor of Major General Oscar Westover, Chief of the Air Corps, and Colonel Charles F.H. Johnson, Specialist Reserve, Chief of the New York Air Corps Procurement District.

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Special Orders of the War Department, recently issued, direct the following-named Air Corps officers to proceed to the Philippines for duty:

Captain Jack Greer, from Langley Field; 1st Lieuts. Charles H. Anderson and Ernest K. Warburton, Selfridge Field; Harry N. Burkhalter, Jr. Frederick E. Calhoun, David N. Motherwell and Fred O. Tally, Barksdale Field; Talma W. Imlay, Mark K. Lewis, Jr., Randolph Field.

To Panama Canal Department: 1st Lieuts. Millard Lewis, Hamilton Field; Robert M. Lee, Douglas T. Mitchell, Barksdale Field; Donald B. Smith, Randolph Field; Robert F. Travis, Langley Field; 2nd Lieut. William H. Gist, Jr., Langley Field.

War Department Special Orders recently issued direct the retirement of Captains Armor S. Heffley and Harold R. Rivers, January 31, 1937, for disability incident to the service.

GHQ AIR FORCE PLANES USED IN GLOOD AREAS

Airplanes of the Army's General Headquarters Air Force are playing an increasingly important role in the rescue and relief of the distressed persons in the flood areas.

Responding to an urgent call from the Corps of Engineers, General Malin Craig, Chief of Staff of the Army, has directed Major General Frank M. Andrews, Commanding General of the GHQ Air Force, to furnish three photographic teams in as many planes for the survey of flood conditions in the stricken Ohio Valley, and perhaps later on in the threatened Mississippi River valley area.

Two of the photographic teams have already left for Dayton, Ohio, where they will report to the Commanding Officer of the Air Corps Materiel Division at Wright Field. These two teams are from the Eighth Photographic Section at Mitchel Field, Long Island, New York, and the Second Photographic Section at Langley Field, Va. The third plane, from the 5th Photo Section at Barksdale Field, Shreveport, La., will be held on the "alert" to await further contingencies. It is in a strategic position at Shreveport in case the river rises dangerously near the Delta.

Another Air Force plane has already done much photographic work in connection with the flood.

Returning from Wright Field with the speedy Douglas Bomber belonging to the Headquarters Squadron of the GHQ Air Force, based at Langley Field, Major Eugene L. Eubank, Squadron Commander, described the work that the huge fighting craft had accomplished on its errand of mercy during the three days that it had been on detached service in the flood regions. Major Eubank with Lieut. Hugh McCaffery and Sergeant Joseph Moran ferried the plane to Dayton, where it was turned over to the expert photographers from the Air Corps Materiel Division at that station.

"The crew in the plane have been mapping the entire Ohio River valley in the flood area all the way from Portsmouth to its mouth at Cairo, Ill., including its tributaries. The photographers were favored with three days of excellent weather for photography," it was explained. "This is the only plane in the Army Air Force which has sufficient carrying capacity, speed and cruising range sufficient to accomplish a photographic mission of such great magnitude in so short a time.

It is believed that these photographic records, showing water in the actual contours, will be invaluable to Army engineers in their future studies of flood control.

The task of the two Fairchild C-8 photographic planes will be to photograph the levees and other parts of the flood regions so that Army engineers may gain some idea of the breakages which have taken place and the gains and losses which have occurred. These pictures will be used by the Corps of Army Engineers to make a survey of estimates so that necessary measures for controlling the flood and evacuating inhabitants may be undertaken without delay.

Another Langley Field plane, the OA-4, by virtue of its amphibian ability to land in water as well as on land, should prove to be of value in making difficult rescues and ferrying supplies. This Amphibian plane is now at Columbus, Ohio.

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PROMOTION OF AIR CORPS OFFICERS

The following-named Air Corps officers received permanent promotion to the rank indicated: To Lieut. Colonel: George E. Stratemeyer (Temp. Lieut. Colonel), rank from Jan. 1,1937; To Major: John I. Moore (temporary Major), to rank from January 1, 1937; To Captain: 1st Lts. Earl C. Robbins, A.J. Kerwin Malone, Russell Keillor, Ernest H. Lawson, John E. Bodle, Russell Scott, Burton M. Hovey, Jr., Richard E. Cobb, Dale D. Fisher, Henry W. Dorr, Carlisle I. Ferris, Elwood R. Quesada, Willard R. Wolfinbarger, with rank from January 22, 1937,for the first eight captains, and from January 23, 1937, for the last five.

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CHANGES OF STATION OF AIR CORPS OFFICERS

To Selfridge Field, Mich.: Major Willis R. Taylor and 1st Lieut. Robert S. Israel from Panama Canal Department.

To Mitchel Field, N.Y.: 1st Lieuts. Flint Garrison, Jr., and George R. Greer from Panama; Major Theodore J. Koenig (Captain) from duty as Assistant Military Attache for Air to Germany, The Netherlands, Denmark and Sweden.

To Fort Riley, Kansas: 1st Lieut. Gerry L. Mason, from Panama.

To Hawaii: Major Ames S. Albro (Captain) from duty as Technical Supervisor, San Antonio Air Depot Control Area.

To Randolph Field, Texas: Major Albert B. Pitts, from Philippines, for duty at Air Corps Training Center.

To Chanute Field, Ill.: 1st Lieut. Richard M. Montgomery, from Panama.

To Barksdale Field, La.: 1st Lieuts. John W. Kirby, Phineas K. Morrill, Jr., Willard R. Shephard, Wycliffe E. Steele, from Philippines.

To Wright Field, Ohio: 1st Lieut. William M. Morgan, from Philippines.

To Langley Field, Va.: 1st Lieuts. Richard S. Freeman, Francis H. Griswold, from Hawaii.

To Patterson Field, Ohio: Captain Signa A. Gilkey, from Wright Field.

To Rome, Italy, for duty as Assistant Military Attache for Air: Captain Jack C. Hodgson, from Bolling Field.

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The following-named Air Reserve officers have been placed on active duty for a period of three years at stations indicated:

At Barksdale Field, La.: 2nd Lts. Troy Wm. Crawford, Mangham, La., and Fred Oscar Easley, Jr., Fordyce, Ark., to Jan. 14,1940; A.J. Bird, Jr., Metter, Ga., to Jan. 31, 1940.

To Langley Field, Va.: 2nd Lt. Cyrus Wm. Kitches, Laurens, S.C., to January 31, 1940.

To Hamilton Field, Calif.: 2nd Lt. Francis H. Matthews, Houston, Texas, to January 31, 1940.

To Patterson Field, O.: 2d Lt. Thomas Smith Davis,Jr., Fernandina, Fla., to January 31,1940.

Kelly Field, Texas, January 21, 1937.

Col. E.A. Lohman, Asst. Commandant, has been busy with details on the proposed new navigation flight of the present class at the Advanced Flying School.

Major Robert D. Knapp, Chief of the Flying Department, and Captain Glen C. Jamison, Chief of the Attack Section, were sick in quarters recently

Major Edgar E. Glenn, Intelligence and Supply Officer of the 2nd Wing, Langley Field, was held at the field for several days on account of weather. He flew an A-17 to Duncan Field for installation of oil dilution system for cold weather flying and engine starting.

Lieut. Colonel Ross G. Hoyt, of the Information Division, Office of the Chief of the Air Corps, and 1st Lieut. Waldorf, of the California National Guard, were recen visitors at Kelly where they were delayed on account of weather. Col. Hoyt was ferrying an O-46 to Boston Airport. The weather also held up 1st Lieut. Marion Huggins at this field a few days. He had a forced landing at Ringgold, Texas, on the 14th, having encountered a heavy fog in Montague County. He came to grief again at McKinney, Texas, when an oil line clogged up and he was forced to land a second time. In landing, his plane was damaged slightly, and mechanics from Hensley Field were dispatched to repair same.

Warrant Officer Vernon L. Roberts, assigned to the Panama Canal Department, was scheduled to leave by transport from San Francisco on February 2nd. He had been at Kelly Field since 1928, having transferred as an enlisted man from the Cavalry. He was made a Warrant Officer in 1935, being one of those on the original list of 1920. During the World War he served as a 2nd lieutenant of Field Artillery. While at Kelly Field he served as clerk to the Executive Officer and also worked in the Air Corps Supply.

During the Christmas holidays, 24 out of the 32 Flying Cadets left for their homes on 10-day furloughs. During the same period, extended navigation training flights were made by Major Knapp to Los Angeles, Calif., and by Captain Bryte and Lieut. Spivey to Mitchel Field, N.Y.

Hamilton Field, San Rafael, Calif., Jan. 22d.

The Hamilton Field basketeers have been setting a hot pace in the games played so far this year. The fliers under the leadership of 1st Lieut. Dale O. Smith have won seven of the eight games played, the solitary defeat being a close contest where one point was the deciding factor. The boys are looking forward to the month of February, as they have contacted several teams in the Bay Area that will put up games exciting and worth while witnessing. There is a possibility that the Fliers will journey to March Field in the south or to Fort Lewis in the north. The team is composed of Lieut. Dale O. Smith, coach; Corp. L.L. Lash; Pvts. W.F. Layton; W.B. Malloy; J.P. Shadco; Buford C.May; Grant M. Stiles; S.L. Fouts; W.E. Ashby; A.K. Probasco. Managers, Sgt. W.W. Bain and Pvt. 1st Cl. Chausse; Referee, Corp. J.C. Hardy.

31st Bombardment Squadron: The Squadron has lost three of the old timers. Lieut. Garland was ordered to Panama and Lieut. Proper to Hawaii, while Lieut. Timber went over to the United Airlines on January 15th. This leaves only three officers who were with the Squadron when it moved to Hamilton Field on December 5, 1934. These officers are Lieuts. Virgin, Sanford and Keppler.

Second Reserve District, Municipal Airport, Oakland, Calif.:

The Air Corps Reserve activity at this station closed out the old year with satisfactory results in all phases of training possible at this airport.

On December 22nd, Captain George E. Henry, Unit Instructor, in the role of Santa Claus (minus the whiskers) came slipping through a misty sky with the final North American BT-9 to be assigned this station on the first contract. The new addition is equipped for instrument flying under the hood and has an adjustable bucket seat in the rear cockpit. Telephones immediately began clanging with pilots asking information about the weather for flying.

We do not wish to get in bad graces out here, but we surely would have liked to have had more of the famous sunshine during the past two months. Seven airplanes have been in the hangar most of the time champing at the propellers, held down by low ceiling, lack of visibility and this "haze" business. It must be called by another name - perhaps it has been "Fog." The sun just peeked out at this writing - no pilots around - and is our face red!

January 7th saw the arrival of our BT-2B1 and, after a double check, an additional group of Reserve pilots will receive transition and graduate to the BT-9.

Fort Sill, Oklahoma, January 22, 1937.

Since the onset of cold weather, very few pilots from other stations have visited Post Field. Of interest, however, was the overnight visit of Colonel Wm. C. McChord on Dec. 13th.

Major W.C. Farnum took a short leave during the past week to attend an Episcopal Church Conference held at Ponca City, Okla.

Lieut. W.F. Lester, Air Res., returned to this station January 21st after a month's leave.

All of the personnel at this station were pleased to learn that the Cheney Award for heroism for this year (1936) was awarded to Major F.D. Lynch and Staff Sergeant Joseph F. Murray, for their efforts in the free balloon accident of last July.

Luke Field, T.H., January 2, 1937.

72nd Bombardment Squadron: This Squadron made a reconnaissance flight to the southern islands of the Hawaiian group for the purpose of acquainting new officers just arrived from the Mainland with the fields on those islands.

Staff Sgt. Hines goes to Langley Field, Va., on the next transport. Staff Sgt. Henry also

goes back on the next transport, destination unknown to date. Sgt. Lindsey has his fingers crossed, however, there having been no orders issued in his case.

Among the new arrivals at Luke Field on the last transport, the following-named officers were assigned to the 72nd: 1st Lieuts. Paul E. Ruestow, 2nd Lieuts. Downs E. Ingram, Willis F. Chapman and Thomas Wildes, Air Corps, and 2nd Lieuts. Paul Waterman and Joseph A. Thomas, Air Reserve.

First Lieuts. William G. Bowyer and William L. Travis, Air Corps, attached to the 72nd, are leaving on the next transport, the former to go to Randolph Field and the latter to Mitchel Field.

Langley Field, Va., January 13, 1937.

Hq. and Hq. Sqdn., 8th Pursuit Group: On January 5th, Captain Clarence D. Wheeler assumed command of this squadron. He came to us from the 36th Pursuit Squadron, where he had served for 3½ years. Lieut. John E. Bodle, who had been in command since the squadron was organized, was assigned to the 35th Pursuit Squadron. To Lieut. Bodle goes the credit for the shaping of the squadron organization and the preparation of our administrative quarters in the rear of the Headquarters hangar. In the difficult days during the organization of the squadron, Lieut. Bodle showed himself to be a past master in the art of disentangling administrative details.

2nd Bombardment Group: This Group welcomes three new officers who recently reported for duty. First Lieuts. Curtis E. LeMay and Ford J. Lauer, A.C., just arrived from a tour of duty in Hawaii and were assigned to the 49th Bombardment Squadron. Second Lieut. James W. Furlow, Air Reserve, reported for three years' active duty and was assigned to the 96th Squadron.

The 49th Squadron has just learned that their prize hard luck man will be absent for several more months. Corp. William R. Murray, who sustained a broken leg and other painful injuries as a result of a crash at Fort Leavenworth last September, seems to be destined to remain in the Fort Leavenworth hospital for some time. He was convalescing nicely when he fell from his wheel chair and refractured his leg. It is believed he pulled his nose up on a turn and spun in.

35th Pursuit Squadron: Inclement weather and wet field conditions have considerably curtailed the flying activities of the 35th Pursuit Squadron for the past two or three weeks. During this period, however, there has been no lack of activity. Routine maintenance work and ground training schedules have kept both officers and men pretty well occupied, and there has been little time for thumb-twiddling.

Arrangements were completed by the 8th Pursuit Group Operations for conducting long range shooting with front guns on a sleeve target, towed by a Martin B-10.

The officer strength of the squadron was increased by the assignment of Lieuts. Bodle and Borden.

36th Pursuit Squadron: Captain Clarence D. Wheeler, Air Corps, was relieved from assignment to the 36th Pursuit Squadron, January 4th, and assigned to Hqrs. Squadron, 8th Pursuit Group, GHQ Air Force. Captain Wheeler came to the 36th on July 1, 1933, from Chanute Field. His principal duties while with the organization were Intelligence and Operations Officer. He commanded the organization from March 14th to August 24th, 1936, being relieved by Captain Walter L. Wheeler, Air Corps. The good wishes of the officers and enlisted men of the organization follow Captain Wheeler, and it is regretted that his transfer breaks up the only "two Wheeler" outfit.

Second Lieut. Douglas E. Williams, A.C., started out the New Year by getting married on January 2nd. The bride is the daughter of Lt. Colonel and Mrs. Charles C. Drake, Q.M. Corps. The marriage took place in the Post Chapel at Langley Field in military style. Immediately following the ceremony the bridal pair departed on their honeymoon. The best of wishes are extended to Lieut. and Mrs. D.E. Williams.

37th Attack Squadron: The Squadron suffered a great loss when Lieut. S.G. McLennan was transferred to the Base Squadron to become S-2 and Base Chemical Officer, but was also fortunate in gaining Captain Ramsay, who has taken over the task of handling Operations and Intelligence.

With the return of Cadet Willoughby from the West Coast, our pilots again are all present and the rainy day hangar sessions are "knee deep", especially with "Pop" Willoughby telling of the fast trip in his new automobile and his other experiences (seems rather reticent about the latter) during his journey to the West Coast, and with Cadet "Red" Russell trying to explain the absence of paint from the leading edges of the wing. stabilizer and motor cowling of his A-17 after his flight to Florida.

Our Hangar Chief is starting the New Year right by reporting for duty with his right hand all wrapped up in a bandage. We strongly suspect this is just a camouflage to relieve him from running errands and passing tools, but to hear him tell about the incident there must be somewhere a trail of dead bears and wild cats.

Another good "story" comes from our red-headed Recruiting Sergeant who has just returned from the wilds of Pennsylvania with a score of no strikes, no hits and what errors. He reports that numerous offers of jobs in the steel mills almost caused the Air Corps to have a Recruiting Sergeant recruited by industry. His progress was probably curtailed by "swinging doors."

Two more men have just returned from furlough. Staff Sgt. Richards, who visited at Long Beach, Calif., has promised to lecture on "Tourist Travels and Troubles," with emphasis on the negotiating of icy mountain roads. Master Sergeant Albee reported back to duty after a furlough celebrating his promotion. What, no cigars?

After all this palaver on personnel, we shall conclude this news item by a remark that indicates that we do work in this outfit. Priority in our Combat Exercises has been given to the six hundred 50-lb. bombs allotted this organization and ready to be delivered by the Ordnance Department.

San Antonio Air Depot, Texas, Jan. 19th.

Major Levi L. Beery, Capt. Charles W.O'Connor and Lieut. Thomas B. McDonald, of the Air Corps Materiel Division, ferried a B-10B here for overhaul on January 4th. They ferried a BT-2B1 from Randolph Field to the Fairfield Air Depot, and two BT-2B's from this Depot to Chicago and the Fairfield Air Depot, respectively.

Major Edgar E. Glenn, of Langley Field, flew an A-17 to the Depot, January 6th, for installation of an oil dilution system, returning on the 14th. Major Glenn was formerly a resident of this post while on duty at Kelly Field a few years ago.

Mr. W.S. Reid, representative of the Wright Aeronautical Corporation, Paterson, N.J., and an expert in aeronautical shop practice, arrived January 14th for a month's visit in this vicinity, principally in the Engineering Department of this Depot, conferring on engine maintenance matters.

Mr. Eugene W. Hailey, Junior Administrative Assistant with the Hawaiian Air Depot, Luke Field, T.H., on leave of absence in the States, was a visitor at this Depot January 7th and 8th, chatting with friends over old times here. He was on duty at this Depot for a number of years until his transfer to Hawaii in 1932.

During December, 1936, the Engineering Department of this Depot overhauled 17 airplanes and 51 engines and repaired 21 planes and 30 engines.

Staff Sgt. Paul S. Blair, pilot, was transferred to the Squadron January 13th from the 1st Photo Section, Brooks Field, having been attached to this organization (3rd Transport Squadron) since November 20, 1936. Sergeant Joseph O. Roberts joined the squadron January 13th, by transfer from the 12th Air Base Squadron, Kelly Field, making a mutual transfer with Sergeant Luther S. Whitley to the latter organization.

Hqrs. A.C. Det., Long Beach, Calif., Jan. 11.

The New Year came in with a lot of zip and super-exhilaration - a sizeable group of us boys and girls gathering here in the Club to greet the "rosy young feller" who always promises so much but who sometimes forgets to deliver.

Now that the holidays are over and our annual New Year's storm, we expect to get busy and see how many hours we can roll up. At last we've gotten our three BT-9's - honest. We have to make a trip down to Long Beach every few days just to assure ourselves that the imagination is not playing tricks. And in addition, we've also inherited a BT-2. Now those of our Group who did not get checked out on the borrowed BT-2 can get busy. During the first half of the flying year we have flown something over 1900 hours. We're going to do better than that for the next six months, now that we have some service type ships.

Just when we think we're all set for business, someone throws a smoke bomb in our midst. The latest "snatch" deprives us of our Ford automobile - our one and only transportation. When we by some unplanned design sit down upon some distant and desolate terrain, Captain Martin will have to come to pick up our scrambled remains with the tug. Of course, if we should die in transit, 'twill be just "An Act of God."

Among our visitors last week was Major John H. Gardner, Air Corps, Unit Instructor for the Air Corps Reserve at Seattle, Wash. Major Gardner was ferrying home a PT-3 from Rockwell. Flying conditions were pretty bad, so we offered to take the ancient ship off his hands, but the Major said he liked "old things."

The 479th loses five more officers to active duty - Lieuts. Norman L. Callish, James C. Cochran, Nathan H. Coddington, Kenneth R. Kreps and John P. Stewart.

During Christmas week, our Squadron was visited by its former Unit Instructor, Captain John K. Nissley, who is now at the Air Corps Tactical School, Maxwell Field. Ye Scribe did not see the Captain, but hearsay would indicate the Captain has not played much golf or devoted many evenings to cross-word puzzles. It seems he speaks of horseback riding and other things like the "nth dimension." Wonder what his horse would say if it could speak English?

First Lieut. Norman E. Border, Air Reserve, who came down on two weeks' active duty from the Douglas factory, was on no vacation. He stated that he never would have believed it possible for one Captain to have on hand so many and such a variety of official duties to delegate to just one Lieutenant.

On the 10th, "A" Flight went to March Field for 64's, and "B" Flight was scheduled to follow up a week later. Sixty-four's are hazards very nice to have behind.

The terrific cold spell which has descended upon us is proving a decided handicap to flying. The pall of smudge smoke is worse than the soupiest fog. The unusually cold weather has necessitated the use of smudge pots in the orange groves to the north and east of the field thus inducing a man-made ground haze which ordinarily does not lift until around noon. At times visibility is reduced to 500 yards or less.

Brooks Field, Texas, January 19th.

A new? Octopus has the officer personnel of Brooks Field firmly emeshed in his tenacles. Its grip is, indeed, terrifying. It seems that none have succeeded in eluding his grasp. The name of this terrible monster is CRIBBAGE. All have succumbed to its wiles and blandishments, and have become so proficient in this new? game that there is an open challenge to any officer of any post who desires to take his life in his hands and meet the personnel of Brooks in mortal combat - over a cribbage board. By this we mean that we are good. We may not be the best, but we're the best that we ever saw. We'll acknowledge that, and we stand ready to back this feeling with money, marbles or chalk (mostly chalk, Quartermaster issue).

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Second Lieut. William Brewer Kiese, of Wyoming N.J., was placed on active duty to June 15,1939, and transferred from the Panama Canal Department to Mitchel Field, N.Y.

Second Lieut. Charles Moritz Dittrich, Jr., Air Reserve, of Meriden, Conn., was placed on active duty to January 20, 1940, and transferred from Mitchel Field to Panama Canal Department.

[illegible]

Engineering Section Memorandum Report furnishes the results of installation and test of B.F. Goodrich deicers (mechanically attached type) on a YB-12A airplane.

In the conclusions it states that attachment of inflatable rubber tube deicers to the leading edges of wings and empennage surface by means od screws and rivnuts was found to be more reliable and dependable than by means of any known cements. Installation and removal of the screw-attached deicers did not require any greater period of time than that of the cemented-on-type, and mechanics with average training could execute the work.

These deicers remained in place and completely removed ice from the leading edges each time it was encountered.

Tests of this type of deicing equipment will be continued to build up further evidence of the superiority of this principle of deicing, which is the most satisfactory employed up to this time.

External Energizer.

Sixteen Type A-3 external energizers were prepared for service test during the Winter Maneuvers (activities recommended to conduct tests were Selfridge, Langley and Mitchel Fields). This energizer is designed to energize the flywheels of inertia starters from a 110-volt alternating or direct current source of supply. It is equipped with a double-end drive shaft suitable for either direction of starter shaft rotation. It is also equipped with an automatic clutch adjusting device for eliminating the shock loading of the starter shaft.

Tachometers (Magnetic) Type C-4.

Ten Type C-4 tachometers (magnetic), procured from the Kollsman Instrument Company, Inc., Brooklyn, N.Y., are ready for service test. The magnetic tachometer, Type C-4, is of the shaft driven type and consists of a magnetic rotor, an inductor, and a calibrating spring. The rotor induces a current in the inductor which, in turn, causes a torque of the inductor against the calibrating spring. Gearing at the back of the instrument makes it possible to drive it in either direction. The indicator dial corresponds very closely with that required for the Type C-2 chronometric tachometer.

Color Blindness Test and Equipment.

An Engineering Section Memorandum Report covers the results of a study to devise a test and design the necessary equipment required for a practical test of color blindness in Air Corps pilots. It was recommended that this equipment be made available at all Air Corps stations and that pilots who are unable to pass the regular office color vision test be reexamined, as explained, and classified according to their ability to pass this test.

Wind Cones.

An Engineering Section Memorandum Report furnishes information for service test of wind cone assemblies, Drawing No. 37G2324. This type wind cone is fabricated in the form of a 24-inch sleeve diameter with mercerized cotton fabric. The fabric is first impregnated with synthetic rubber which produces a smooth waterproof surface. The treated fabric has a high resistance to soiling, thus prolonging the maximum visibility beyond that of dyed fabric cones.

Randolph, Langley, March and Mitchel Fields are recommended to conduct tests of these wind cones.

Type E-5 Dead Reckoning Computer (Magnetic)

An Engineering Section Memorandum Report, on service test of Type E-5 dead reckoning computer by the Air Corps Tactical School, Maxwell Field, Alabama, reveals that this computer consists of one face of the Type E-1 on a smaller scale, together with a double drift diagram and a log sheet on the reverse side. It was found to be more awkward to handle than the Type E-1B, and the double drift diagram is of too small a scale to give the required precision. The Type E-1B has been standardized in preference to the Type E-5, limited standard classification being recommended for the Type E-5.

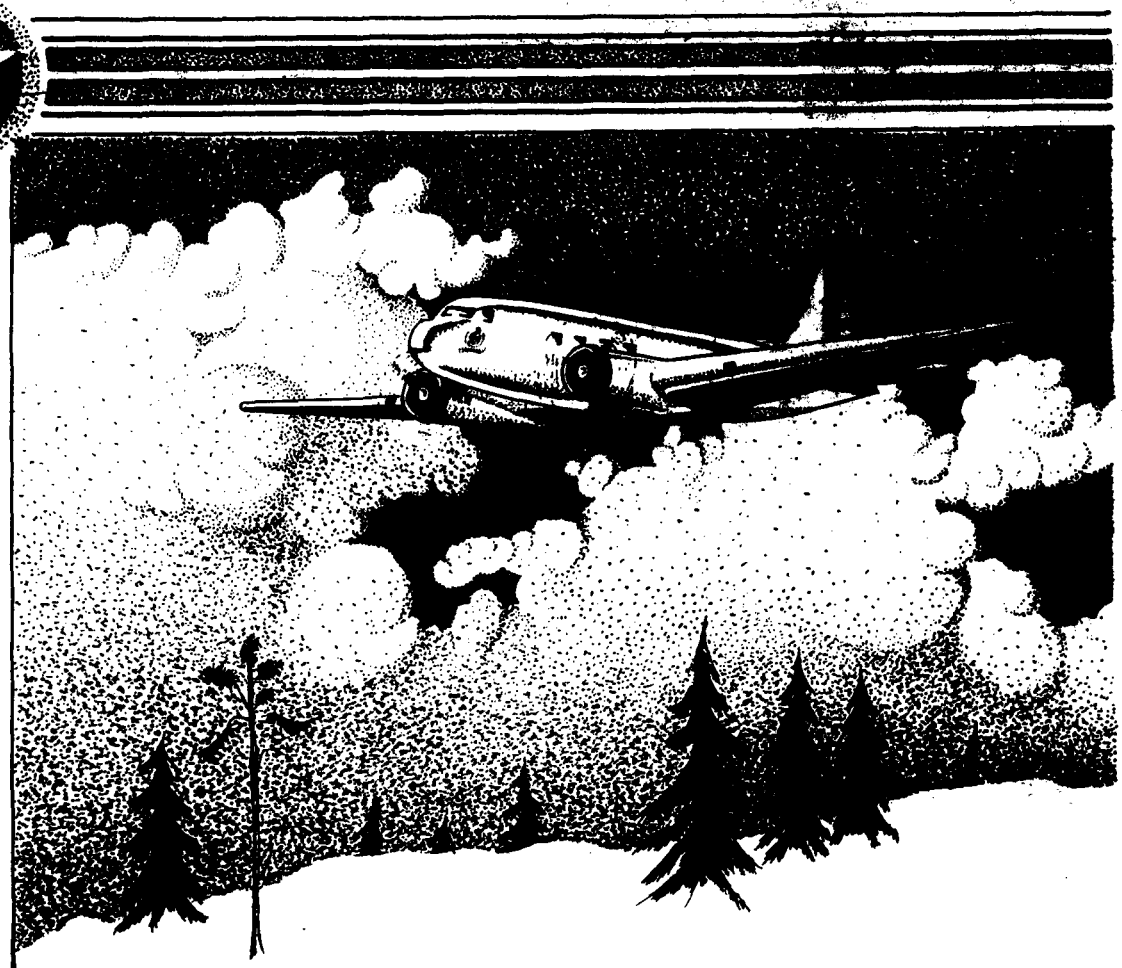
Before some 500 members of the American Legion, attending from nearly every post within a wide radius of Hamilton Field, Lloyd Andrews Hamilton Post No. 540, Department of California, The American Legion, was recently officially constituted an integral part of the national organization with appropriately impressive ceremonies. The Chaplain of the Marin County Council invoked the blessing of Almighty God on the convened assembly.

The county council commander recited the preamble to the Legion constitution, the members

(Continued on next column)

present repeating the words after him. With their colorful uniforms, the Legionnaires still looked the part of the soldiers they were in '17. A number of Department, County Council and Post Commanders from points as far distant as Ukiah were present and were introduced from the rostrum by Mayor Clark, County Council Commander of Marine County.

On behalf of Col. Davenport Johnson, Commanding Officer of Hamilton Field, Lt. Col. C.W. Russell welcomed the Legionnaires to the Air Base. Gail Apperson, Chairman of the Marin County Board of Supervisors, welcomed the visitors on behalf of the civil officials of that county. James J. Fisk, Dept. Adjutant,, in his address, exhorted the members present to continue service to the Post, State and Nation. During the course of his address it developed that Mr. Fisk had been an intimate friend of Lt. Hamilton, after whom the Legion Post and the Hamilton Field Air Base are named, in wartime days. Department Commander Tom Riordan was the principal speaker of the evening.



AIR CORPS NEWS LETTER

ISSUED BY

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WAR DEPARTMENT, WASHINGTON, D.C.

FEBRUARY 15, 1937.

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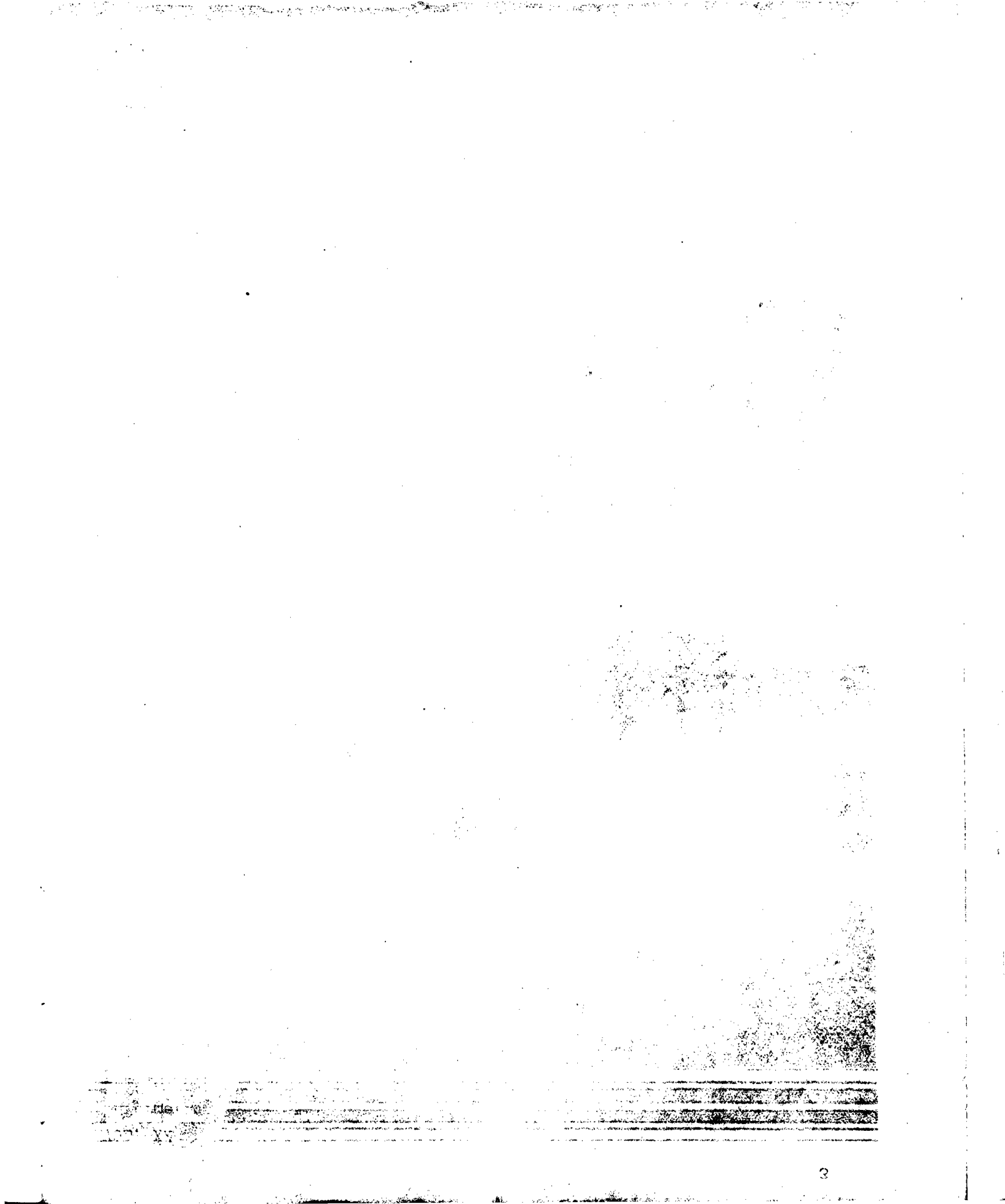
NO.4.



VOL. XX AIR CORPS NEWS LETTER NO. 4.

Information Division
Air Corps

February 15, 1937

Munitions Building
Washington, D.C.

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

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POWER PLANT LABORATORY UNDERGOES OVERHAULING

By the Materiel Division Correspondent

In order to keep a few steps ahead of power plant development, the Power Plant Laboratory at the Materiel Division, Wright Field, Dayton, Ohio, is now undergoing some general overhauling. Thanks to the foresight of the engineers who originally built our laboratory, it has withstood the rapid progress of the past several years. A thousand-horsepower, combination electric-water brake dynamometer sufficed for engines then under development and gave plenty of room for increase in power from the 200 to 500 horsepower engines up to our present engines in the thousand horsepower class. A 600 horsepower blower fan gave us an airspeed of some 180 miles per hour over the fins of our air-cooled engines, simulating approximately the speeds of airplanes then under development.

We are now going over the thousand horsepower hump, and with it come the added complications of accurate altitude performance testing. To accommodate new developments, we are again taking another look into the future.

Three new combination electric-water brake dynamometers of 3000-horsepower capacity are being installed. A 1500-horsepower centrifugal blower will replace one 600-horsepower fan and step our airspeed from 180 miles per hour up to about 400 miles per hour. Two 600-horsepower centrifugal fans will serve the altitude test stand with similar increase in speeds. Each of the stands will have remote controls over the entire system and with new soundproofed control rooms we will still keep our position as the most up-to-date Power Plant Testing Laboratory in the world.

The above improvements are costing well over one hundred thousand dollars; the power required to run the stands would supply a fair size city with power. This expense will be justified by further development in the power and safety of aircraft engines and pass on the benefits through the military services to our commercial lines and in turn to the general air-minded public.

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SCOTT FIELD IN FLOOD RELIEF WORK

Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Belleville, Ill., is cooperating with Colonel Joseph A. Atkins, at Jefferson Barracks, Mo., in charge of Southern Illinois flood relief, by sending supplies, troops, airplanes and airships to the flood zone a little more than a hundred miles to the east and south. Colonel Kennedy not only supervised the execution of all orders from Colonel Atkins, but also made personal visits to the flood zone by airplane and airship.

Scott Field pilots have made frequent flights daily to obtain information and photographs and to make maps which have been helpful to rescue parties. The TC-14 airship was flown to the flood area on various occasions.

Four complete mobile field kitchens, each manned by a mess sergeant, two cooks and two helpers, have been standing by awaiting orders to proceed wherever needed to establish food stations for flood refugees.

Scott Field's amateur radio station, W9CJH, was active in handling flood relief messages from January 22nd to February 7th - 401 consecutive hours - and working in conjunction with the U.S.Army Radio Net. Private, 1st Class, Frank W. Brashears, its owner-operator, was assisted by Privates Reynold J. Castelli, C.C. Smith, Ben Taylor, Lewis J. Rudy and Fred J. Hicks.

The amateur station was an important link between W9AMR, Army 6th Corps Area Station, and a dozen emergency radio stations in the flooded area, these including W9PSP at Cairo, Ill., and WGBE at Marion, Ill. The station had regular hourly schedules with these stations, making contacts little more than five minutes apart.

During the hours from midnight to 5 a.m., all W9CJH relief traffic, particularly that regarding missing friends and relatives, was rebroadcasted by WEW, a commercial station at St. Louis, Mo.

(Continued on page 15)

THE NEW CLASS AT RANDOLPH FIELD, TEXAS.

The new class which will begin flying training at the Air Corps Primary Flying School at Randolph Field, Texas, on March 1st, next, totals at this writing 112 students, comprising one officer of the Coast Artillery Corps, U.S. Army (1st Lieut. Dabney R. Corum), 9 enlisted men of the Air Corps, 5 enlisted men from other branches of the military service, and 97 candidates from civil life. The enlisted and civilian students will undergo their flying training under the status of Flying Cadets.

The course at the Primary Flying School is of eight months' duration, of which four months are spent by the students on the Primary Stage and four months on the Basic Stage. The instruction on the Primary Stage is given on a training type airplane, known as the PT, and consists of dual instruction, the fundamental flying maneuvers, accuracy work and acrobatics. On the Basic Stage, the student advances to a larger, more powerful and speedier airplane, known as the BT type. In this airplane the student reviews all of the work done on the Primary Stage, but in an airplane with different flying qualities and one which more nearly approaches those employed by Air Corps tactical squadrons. At this Stage he also takes up formation flying, strange field landings, instrument flying under the hood, and day and night navigation flights. The objects sought so far have been perfection in flying technique and the development of headwork.

Students successfully completing the eight months' course at Randolph Field are transferred to the Advanced Flying School at Kelly Field, Texas, where for a period of four months they specialize either in Pursuit, Bombardment, Attack or Observation Aviation, employing service type airplanes.

In addition to intensive flying training in their own specialty, students are also given considerable experience in day and night navigation, instrument flying, and transition to all types of military airplanes available at the Advanced Flying School.

Upon graduation from the Air Corps Training Center, the Flying Cadet is given his "Wings" and the rating of "Airplane Pilot," and is then assigned to extended active duty with a tactical squadron at one of the Air Corps stations in the United States.

In the matter of representation of native sons in the March Class, California leads with 13 students, followed by Texas with 10 and Washington with 8. In the cities represented, Seattle, Wash.; Columbus, Ohio, [illegible], Ill., and Austin, Texas, [illegible] with three each.

List of Flying Cadets (Civilians)

Bourland, Russell R.	Camden, Ark.
Tillman, Cleburne	Little Rock, Ark.
Tribble, George Stuart	Stephens, Ark.
Hagerman, Elmer D.	Avenal, Calif.
Garman, Ralph Sheldon	Avenal, Calif.
Adams, Robert Starr	Los Angeles, Calif.
Kearby, Neel Earnest	Los Angeles, Calif.
Reedy, Allen Dale	Ontario, Calif.
Iwerks, Franklyn Merrill	San Bernardino, Calif.
Pardee, Elliott Thomas	San Francisco, Calif.
Schubert, Hilmar Bruns	San Francisco, Calif.
Maupin, Robert Norton	Santa Barbara, Calif.
Edmundson, James V.	Santa Monica, Calif.
Alexander, Hugh S.	Winton, Calif.
Hays, MacDonald Herbert	Denver, Colo.
Heintz, Adam Joseph	Greeley, Colo.
Broomfield, John Danridge	Hartford, Conn.
Breathitt, James, III	Washington, D.C.
Clements, Robert E., Jr.	Moscow, Idaho
McPherson, Clarence Edward	Moscow, Idaho
Maloney, Robert G.	Chicago, Ill.
Kummrow, Robert A.	Morrison, Ill.
Snow, Daniel Lloyd	Vienna, Ill.
Flannery, Edward J., Jr.	Winnetka, Ill.
Wanamaker, Martin Eugene	Barnes, Kans.
Spies, Albert Joseph	Hays, Kans.
Woltz, Eugene Carl	Wichita, Kans.
Morris, George William	Bowling Green, Ky.
Harrison, Oliver Cecil	Montgomery, La.
Capitell, Alfred John	Belmont, Mass.
Smith, Dana Andrew	Brookline, Mass.
Proxmire, Theodore S., Jr.	East Boston, Mass.
Howe, Dana Hill	Gardner, Mass.
Ames, Richard Austin	Lynn, Mass.
Noyes, Richard Whitney	Melrose, Mass.
Caluory, Francis David	Battle Creek, Mich.
Cleveland, Parker Menzie	Fort Snelling, Minn.
Marks, Magnus B.	Minneapolis, Minn.
Kruse, Robert Roland	Kansas City, Mo.
Martin, Kenneth Ray	Kansas City, Mo.
Benson, Harry Anderson	Liberty, Mo.
Arndt, Clarence William	Marshall, Mo.
Ott, William Dunnica	University, Mo.
Lambert, Richard Francis	North Platte, Neb.
Glasier, Robert Adolf	Carlsbad, N.M.
Nacrason, Edmund Joseph	Cooperstown, N.Y.
Howard, Orrin Mather	Crown Point, N.Y.
Aronsen, Charles Millard, Jr.	Eltingville, N.Y.
Coupland, Don	Kenmore, N.Y.
Uzdavinis, Walter Alfred	New York, N.Y.
Zipp, Marvin Stoll	Rockville Center, N.Y.
Beverly, Ernest Haywood	Laurinburg, N.C.
Helbert, Lewis Peter	Ashland, Ohio
Brannon, Dale Donald	Columbus, Ohio
Fisch, Frank	Columbus, Ohio
Wasem, Clinton Curtis	Columbus, Ohio
Landis, Frank Calvin	Doylestown, Ohio
Foster, Orland A.	Ada, Okla.
Mason, Robert Julian	Norman, Okla.
Workman, Clyde Lowell	Norman, Okla.
French, Donald James	Eugene, Ore.
Acheson, John Russell	Medford, Ore.
Emmens, Robert Gabel	Medford, Ore.
West, Graham Warren	Portland, Ore.
Rodziewicz, Casimir A.	New Kensington, Pa.
Dwyer, Thomas A.W., Jr.	Philadelphia, Pa.
Anderson, Dale L.	West Pittsburgh, Pa.
Denesi, Marius Caesar	Providence, R.I.
Fineman, Ernest	Providence, R.I.
Watson, Theodore Provost	Anderson, S.C.
Mall, Don W.	Brookings, S.D.
McNickle, Melvin Francis	Vermillion, S.D.
MacNicol, George Mabin	Memphis, Tenn.
Armstrong, Hal Burrage	Austin, Texas
Broadbent, Harry Hartwell	Austin, Texas
Ranck, Nathan Hoover	Austin, Texas
Ceyanes, Lencho	Brownsville, Texas
Vernon, Randall Mitchell	Harlingen, Texas

(Continued on Page 21)

THE COLOMBIAN FLIGHT

Supplementing the article in the previous issue of the News Letter on the above subject, additional data relative thereto was just received from the France Field Correspondent, who goes on to say that a fine opportunity to visit another South American country presented itself not long ago - andopportunity had to knock but once. Under command of Major Willis R. Taylor, of France Field, a flight of five Martin B-10B's proceeded on an aerial journey from France Field, C.Z., to Bogota, Colombia. The purpose of the flight was two-fold - it helped to strengthen the friendly relations already existing between Colombia and the United States and, in addition, it provided valuable experience for Air Corps personnel. The following very complete account of the flight is taken from Major Taylor's diary of the flight:

Instructions were received from Wing Headquarters in October, 1936, for the 7th Observation Squadron to proceed on an extended navigation flight to Bogota, Colombia, via Medellin, Colombia, on December 14th, returning via the same route on December 17th. The flight, per verbal instructions of the Wing Commander, was authorized to utilize B-10B airplanes. Inasmuch as five airplanes were authorized for the flight, and only 4 B-10B airplanes could be spared from France Field, it was thought it would be both interesting and educational if an extra B-10B plane from Albrook Field, with four officers, could be authorized. In addition, it was suggested that one officer and a flight surgeon from Albrook Field be furnished, and this suggestion was agreed upon.

The flight cleared France Field at 7:30 A.M. December 14th, in partially cloudy and inclement weather, but with a good weather report at Medellin, Colombia, where the first landing was scheduled to be made. Because of these weather conditions, the flight proceeded down the East Coast of Panama to Turbo, Colombia (Pan-American Airways Field at Turbo), thence on a direct line to Medellin. The flight proceeded through the mountainous country over a nine-tenths broken cloud layer, at an elevation of about 11,000 feet. Two check points were picked up through the clouds en route to Medellin. The Medellin landing field is situated at an elevation of approximately 4,000 feet on the south side of a 10,500-foot peak and lower range. The north side of the peak was visible on arrival in the vicinity of Medellin, but the Medellin landing field was closed in. Radio contact had not been established with Bogota, some 150 miles further on, and one of three decisions had to be made, viz: to return to Turbo or France Field; proceed on to Bogota without a weather report, or stay in the vicinity of Medellin for a time in the hope that conditions would clear up. It was decided to wait for a while, and a circle of that immediate area was made. After about 30 minutes, a hole was located in the clouds, through which the flight proceeded to the Medellin Valley, a landing being made at Medellin 3 hours and 20 minutes out of France Field. Here the planes were serviced. A favorable weather report was obtained from Bogota. The ceiling at Medellin was partially broken by this time, and the flight took off at 12:20 P.M., went up through the clouds to about 15,000 feet and a course was laid for Bogota, 150 miles distant. One check was obtained on the Magdalena River en route. Arriving, however, in the vicinity of Bogota, the clouds were broken and a landing was made at 1:40 P.M. The landing field elevation at Bogota is 8,700 feet.

Upon landing at Bogota, the flight was met by the American Minister, Mr. William Dawson; the representative of the President of Colombia; The Minister of War, Dr. Mendoza; and various other Government Officials. The Minister of War stated he was very glad to welcome the personnel of the flight and that President Lopez, of Colombia, had directed that while the flight was in that country they were to be the guests of the Colombian Government. The Director of National Aviation then invited the officer personnel of the flight to the Granada Hotel to meet various government officials, including the Minister of War, and to go through the ceremony of the "Copa de Champagne", or a toast in champagne to one another, which is considered an extremely high honor. That evening the officer personnel were entertained at the home of Captain Clayton C. Jerone, Marine Corps, Naval Attache to the American Legation, to which the members of the Colombian Air Corps were invited and many of the members of the American and European Colonies. On December 15th, a mid-day reception was given for the officers of the flight at the home of the American Minister, Mr. Dawson, which was attended by the Vice-President of Colombia, members of the Cabinet, high officials of the Army and Navy, and the Ministers of all the foreign legations. At this reception the Director of National Aviation, Major Santa Maria, stated that he hoped to have our flight return to France Field

via Cali, Colombia, the Colombian Military School of Aeronautics. The American Minister dispatched a cablegram at this time to the Commanding General, Panama Canal Department, requesting authority for the flight to return via that route and stay overnight at Cali. Permission was granted by return cable. After the reception the officers of the flight were taken on a sight seeing tour of the City of Bogota by Colombian Air Officers. There was no official function for all the officers that evening. Major Taylor and Major Charles R. Glenn, flight surgeon, however, were invited to attend the National Theatre with the American Minister in his box, the occasion being a recital of music and poetry by the winners of the National Poetry Contest. President Lopez attended in his box, and during the intermission Majors Taylor and Glenn were presented to the President and his family.

The flight left Bogota on the morning of the 17th at 9:00 o'clock for Cali, Colombia, some 150 miles distant. The intervening range between Bogota and Cali has a high point, en route, Mt. Tolima, altitude 18,500 feet. The mountains were completely covered and it was necessary to take flight to an altitude of approximately 20,000 feet for a few minutes to clear the range, after which the altitude was decreased rapidly down into the Cali Valley, where a landing was made one hour and 10 minutes out of Bogota at the Cali landing field, which is at an elevation of 3,500 feet. The officers of the flight were taken to the Officers' Club at the Cali Air Base and then to the Hotel as guests of the officers of the Air Base. That day at 6:00 P.M., the officers of the flight were entertained by Colonel Liborio Orejuela, Commanding Officer of the Local Fort and Military School "PINCHINCHA", and in the evening the American officers and the Colombian aviation officers were entertained at dinner by Lieutenant John H. Hayden, American Aviation Instructor to the Colombian Government.

The flight left Cali at 10:30 A.M., December 18th, for a direct flight of 365 miles to France Field. This course was intended as a navigation problem since for some 200 miles it lay about 45 miles off shore. France Field was reached 2 hours and 20 minutes after the take-off.

Cooperation was given in radio communication by the PanAmerican Airways at France Field, Medellin, and by the Scadta Airways at Medellin, Bogota, and Cali, Colombia. This was not altogether successful, due probably to the unfamiliarity between the Spanish and American operators and also to the fact that the operators in the planes were cold and uncomfortable due to the high altitude at which it was necessary to fly. Excellent weather reports were obtained, however. Plane operators utilized the S.C.R. 187 set. The interplane S.C.R. 183 set functioned satisfactorily and, although it is designed to work at only from 15 to 20 miles, communication was peculiarly good on this set by voice with France Field at all times, both in the air and on the ground. Incidentally, on the ground at Bogota, in addition to working France Field perfectly on voice, the station at El Volcan (HO7 El Volcan, R.de P.) was worked perfectly on voice. This station is some 650 miles distant.

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FRENCH SPEED FLYER VISITS KELLY

Only 100 hours of flying training are allotted to French flying students at the three military flying schools of France, it was learned here during a short visit at Kelly Field recently by Michel Detroyat, leading acrobatic flyer of France; Michel Wetzig, civilian test pilot, and R.C.Peyronnet de Torres, news correspondent. All are on a tour of inspection of American aircraft manufacturing centers. Students at the Air Corps Training Center here get approximately 300 hours during the year.

Detroyat, winner of the speed race of the National Air Races in Los Angeles, California, last year, and who broke the world's record previously held by Major James H. Doolittle, has been awarded the French Legion of Honor Rosette. He flew the course in a specially built Caudron-Renault racer, which covered the 10-mile laps fifteen times in the record time of 264.261 miles an hour. Doolittle's mark was 252.686 miles an hour, made in 1932. For this feat, Detroyat was awarded the Charles E.Thompson Trophy. He also won the Louis W. Greve trophy.

The French flyers, both of them test pilots for the aviation department of the French government, accompanied by de Torres, have been in the United States for a week. They left San Antonio by commercial plane for New York City, where they went to embark for France.

All three visitors commented favorably on Kelly Field's cleanliness, despite the fact that most of the buildings are of war-time construction. Manifesting considerable interest in the blind flying equipment used by the Air Corps, they stated that they are familiar with the instruments but wanted to compare the types here with those used by the French military flyers.

37TH ATTACK SQUADRON WATER-LOGGED
By the News Letter Correspondent

Because of the continuous bad weather, alf Langley Field had to confine work to Squadron duties and "Hangar Flying". At the time of this writing, the field looks like a lake, the road between the main post and Langley Number 2 (the old lighter-than-air area) is covered with water to a depth of approximately six inches, and the balloon hangar, which houses the 37th Attack Squadron, has the appearance of an indoor swimming pool. But all this water handicap does not prevent the 37th's maintenance crews and Engineering Section from taking advantage of the non-flying days to put the A-17's in super-super condition. The writer uses the superlative "super-super" because even when the planes are flying all hours of the day the men keep them in excellent condition. Occasionally, all men have to interrupt their work to rescue little Line Chief Nero from a pool of water that has become a little too deep for him to wade through.

The weather finally cleared enough on January 25th to enable Lieut. Bergquist to go to the Middletown, Pa., Air Depot and fly back his A-17, in which the Air Depot had installed a Type E-4 Radio Compass. He was very well pleased with its operation on the return trip and is anxiously awaiting good weather so that he can conduct further tests. Cadet Russell's plane is now also equipped with a Radio Compass and ready for delivery from M.A.D. It is hoped that all our A-17's will soon have installed this new aid to radio navigation.

We now have ten pilots assigned and attached for our eight planes. The latest addition is Cadet Jones, transferred from the 36th Pursuit Squadron.

The continuous inclemnent weather has initiated heated discussions on icing probabilities. Lt. Day, our Engineering Officer, has launched an investigation on the subject, and with his assistants was seen perusing all known text books on the subject. In addition, he is planning to measure the range of the air heater now installed on A-17's as a basis for determining how much heat to apply under various climatic conditions. We wish him all success, as this investigation may produce some much needed information.

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SEARCH MISSION TO MANAGUA, NICARAGUA

Little or no extra gasoline for a long flight over treacherous jungle, sudden changes in uncertain tropical weather, motor failure with nothing but jungly mountains below - any one of these factors is enough to explain the disappearance of a ship. Perhaps one of these disasters forced pilot F.W. Kingsley down in the steaming jungles of Nicaragua. In any event, when the Bonanza mine, about 150 miles north of Managua, learned that pilot Kingsley had not arrived with his cargo of gold, they immediately put in a call to the government for assistance. As a result, the Nicaraguan government on January 15th, asked for an Air Corps search party.

At 6:15 A.M., the following day, a search flight took off from Albrook Field, en route to Managua, Nicaragua. The flight was composed of six P-12's, two B-6's and one Bellanca C-27, all under command of Maj. G.H. Beverley. The flight reached Managua in the afternoon, and four of the P-12's immediately started the search over the jungles. Shortly after arrival of the Army airmen, another ship belonging to the same company was reported missing.

The weather was poor the entire time, the mountains being clouded over part of the day, and there were many scattered tropical thunderstorms in the valleys. For two days and a half the search went on, without the slightest trace of either of the lost ships. Even with perfect weather conditions, the odds are ten to one that no trace of a crashed ship will be visible, since the tall trees of the jungle are very liable to completely conceal any ship which plunges through them.

On the 20th the flight returned to Albrook Field, due principally to the impossibility of obtaining the proper grade of aviation gasoline at Managua. Although the flight was unsuccessful in finding the lost ships, much valuable experience with flying conditions in Nicaragua was obtained.

Mr. Drew, of the American Legation, as well as government officials, did everything possible to make the flight personnel comfortable. Officers were quartered in the Legation home of Mr. Boay Long, the American Minister. All enjoyed the trip, although they did admit that the flying had been rather strenuous.

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AIR CORPS DEMONSTRATION FOR MAJOR GENERAL BUTNER

On Sunday, Jan. 23d, planes and personnel from France and Albrook Fields passed in review to honor Major General H.W. Butner, Panama Canal Department Commander. General Butner sailed from Cristobal aboard the SS "Ancon", bound for New York on leave. Just after the "Ancon" left the dock and was steaming for the open sea, O-19's, P-12's, B-6's and B-10's passed by the ship in review several times. Air Corps personnel in Panama hope heartily that they will soon be able to welcome General Butner on his return with an even better demonstration.

TRANSPORT AND AMPHIBIAN PLANES FERRIED TO PANAMA

A ferry flight of three airplanes with Brig.General Geo.H. Brett in command, arrived in Panama on December 20, 1935. The personnel of the flight consisted of Brigadier General George H. Brett, Lt. Colonel R.H.Ballard, Major G.H.Beverly, Lieuts. R.S.Israel, W.H.Tunner, Staff Sergeants J.L.Malone, J.O.Whitman, Sergeant R.F.Smith and Corporals H.L.Fagley, C.Mitchell and E. Payeski. A Bellanca C-27 and two Douglas Amphibians were the airplanes ferried.

The flight personnel from Panama arrived in New York on December 1st and went directly to Mitchel Field, where the Bellanca and one Amphibian were picked up. They were flown to Bolling Field the same day. Here the remaining amphibian joined the flight.

After several days' delay due to inclement weather, the flight arrived at Randolph Field on December 7th, and by the 10th were fully prepared for the long trip to Panama.

A further delay was encountered before the necessary negotiations with the Mexican Government for permission to fly over its territory were completed. The flight finally entered Mexico on December 17th, landing at Minatitlan after flying a little over six hours. This was not a nonstop flight, for landings were made at Tampico and Vera Cruz. The only difficulty experienced during the flight occurred at Tampico. Here the Mexican authorities smilingly informed the members of the flight that they were not authorized to fly over Mexico. It was regrettable, but had not the flight been informed that a Mexican State Department flight permit was required? No, the flight had not been so informed. And, since the authorities were polite but firm, telegrams had to be sent to Mexico City requesting the necessary permission. Apparently the Mexican authorities in Matamoras, both civil and military, knew nothing about flight permits, because assurance had been given that all papers for the flight were in order.

The necessary permission was finally granted, and on the 18th the flight continued to Guatemala City, where an overnight stop was made. On the following day, San Jose, Costa Rica, was reached, via Managua, Nicaragua. At Managua the flight was met by General Samos, President-elect of Nicaragua, who invited the American airmen to luncheon while the ships were being inspected and serviced. In San Jose, the flight was entertained by Mr. Sack, the American Minister to Costa Rica.

BOLLING FIELD HAS FLOOD CONTROL PLANS

During the past three years Bolling Field has had two experiences with floods which were both costly to the government and inconvenient to the personnel. The first one, which occurred in the fall of 1933, was unexpected and necessitated vacating the old wooden barracks for the new brick building which had just been completed at the new field. The second flood came in March, 1936, but this time the post had been prepared and had transferred all movable equipment to dry ground. The experience from the first flood had put the post meteorological department on the lookout for weather conditions which bring on such floods, so that a warning could be given sufficiently in advance to allow the post to carry out the flood plans for protecting all movable property, including airplanes, flying equipment, and supplies stored in warehouses. Each department is to follow a definite procedure, so that all equipment may be moved in the least possible time.

To prevent any future floods, the U.S. Engineer Corps is constructing a seawall from the extreme north end of Bolling Field to the higher ground of the new field. The old flying field is ten feet above sea level and only a few feet above water level at high tide. The new sea-wall is ten feet higher, and is being made of dirt obtained from excavations on a nearby hill. The Naval Air Station has hangars built to the water's edge, for launching and hangaring seaplanes, so the sea-wall will be constructed to the hangars and water-tight doors will be installed to prevent flood waters from entering through the hangars.

With the completion of the sea-wall, coupled with sufficient warning in advance by the Weather Bureau, the danger of floods and the worries incident thereto will be eliminated.

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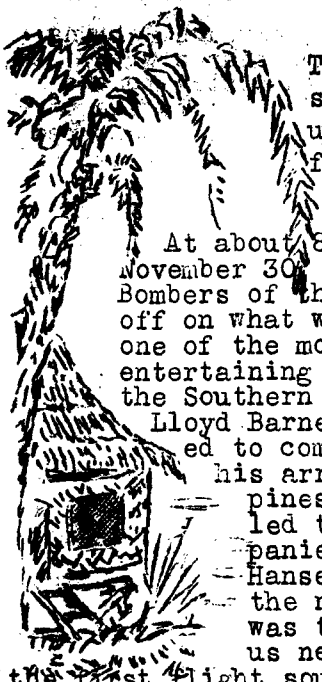
LANGLEY FIELD AIDS FLOOD SUFFERS

Personnel of the Langley Field Air Base have responded generously to the call of the Red Cross authorities for the relief of victims of the recent floods in the Middle West.

The Langley Field quota of $250.00 was quickly oversubscribed. In addition, almost a ton of clothing and bedding, consisting of shoes, coats, shirts, hats, overcoats, blankets and baby clothes were collected by the ladies of the Post for the local Red Cross Chapter, with the assistance of the local Boy Scout Troop. Twenty-one large packing cases were filled and shipped to the Bowling Green, Kentucky, Red Cross Flood Relief Distributing Point on February 1st.

V-7231, A.C.

A FLIGHT TO THE SOUTHERN ISLANDS



The narrative here given is from a report submitted by 1st Lieut. Frederick A. Pillet upon completion of his first inter-island flight after arrival in the Philippines.

At about 8:00 a.m., Monday, November 30, 1936, three B-3A Bombers of the 28th Squadron took off on what was to be probably one of the most interesting and entertaining flights ever made to the Southern Islands. Major Lloyd Barnett, who was appointed to command the 28th upon his arrival in the Philippines on October 30th, led the formation, accompanied by Lieut. George W. Hansen who leaves us on the next boat, and who was to see that none of us newcomers got lost on the first flight south. With them were Staff Sergeant Samuel Gershon, crew chief; Private, 1st Cl. Thomas W. Windham, assistant crew chief, and Private Myrvan R. Morley, radio operator.

Lieut. Colonel Thomas S. Voss, who assumed command of Nichols Field upon arrival on the July boat, but who missed the previous Southern Island flight due to the press of official duties, took number two position, accompanied by Lieut. Charles A. Clark, Jr., who had to rush down and back in two days on his last flight south. Sergeant Thomas R. Smith and Corporal Albert W. Carter held down the rear end of this plane. Lieut. Frederick A. Pillet, also a newcomer from the last boat, held number three position, with Major Robert K. Simpson, M.C., the custodian of health for the flight. Staff Sergeant Max A. Schrader and Private, 1st Class, Stanley J. Enberg looked after this plane, with Private Jacob C. Ziembo, radio operator.

With our jungle kits loaded with emergency rations, pistols, ammunition, iodine, mosquito nets, etc., under the usual Kapok cushions of our parachutes, and our life preserver vests properly adjusted, we were barely able to climb aboard, but finally made it, and with full tanks of gas and empty bomb bays we soared away.

Iloilo (Elowelo to those who don't understand the lingo over here) was the first stop after a four-hour flight around the edges of islands and over various and sundry intermediate fields which might come in useful some day when the weather is not as fine as it was on that particular day and was, in fact, throughout the entire flight. Here the little 183 Command Sets, which we were fortunate enough to have for each of our Bombers, proved useful. Just as Lieut. Pillet was about to follow Lieut. Hansen quickly into the field, a warning was broadcast that the runway just used was very rough and it was possible for the other two planes to use the other runway which was much better.

Most of the fields over here are satisfactory from the standpoint of getting in and out, but with many of them it is necessary to be very careful to use just one little narrow strip on the field. The rest of it may be rough or soft. After a short stop here for gas, out of those 5-gallon cans, and a little refreshment, we pushed on to Zamboanga, which we reached after a little more than a three-hour flight. We were making knots on that hop, better than ninety per, and for the benefit of those of you GHQ boys who have forgotten what a B-3A is like and are used to cruising around at one-hundred-eighty or so, ninety is plenty good for these old B-3's. Right here and now we want to spread around a few bouquets for the men in the Depot, the men on the line and all the crew on this particular flight, for in spite of the fact that these planes and engines are old - nearly ready for compulsory retirement for age, in fact, they keep them in fine condition. It has been a long time since the last forced landing (lots of good knocks on wood here), and we got through this entire flight without any mechanical difficulties whatever. And don't forget that for every five minutes' flying time the boys had to empty one of those five-gallon cans of gas into each one of the Bombers.

On the hop to Zamboanga we passed around a few nice heavy local thunderstorms. Col. Voss and Lieut. Pillet changed positions once or twice, and when Lieut. Hansen found it was the Colonel and not the Lieutenant he had purposely run through the edge of one of those storms - was his face red? Besides that, we went barging across one 90-mile stretch of water

and Lieut. Hansen had a tough time trying to convince the newcomers that it would be safer to land in the sea beside one of those 15-foot sharks we saw than to come down in a jungle. The jungle didn't look any too good, however, particularly those parts marked "Unexplored" on the maps, so most of us decided that a beach would be about the best place for an "unpremediated" landing.

At Zambo we put up at the Hotel De Gink of Pettit Barracks, right on the

bay, and then assembled at the Over Seas Club for a session at their famous "Round Table." It seems they have a slogan: "Strangers taken in," which they proceeded to carry out with a vim in the case of the Colonel. After a chicken dinner at the one and only hotel, we started on a round of the knick-knack shops, and there began the buying spree which was not to end until we reached home. At first we were just looking. Then some one asked "How much?" You know the rest. We got black coral and silver bracelets, ear rings, pins, shirt studs, rings, etc. This was jewelry night. The heavier and larger articles were to follow.

Having covered the tremendous airline distance of some 550 miles in one day of some seven odd flying hours, we felt at liberty to ease up a bit and see the country, so the next day we departed at 9:00 a.m. for Jolo, the land of the Sultan of Sulu. This was a hop of only about ninety miles, with a scattered chain of small islands not too far to the east, so we spent a little more time sightseeing on the way. As we crossed the center of Jolo, we passed a couple of old volcanoes with beautiful crater lakes. Then we dropped to a low altitude and followed the beach around the island to our landing field. There seemed to be natives scattered along the entire coast line, and we found at least one who had the business of living pretty well whipped.

Throughout the Philippines they have built fish traps in the shallow coastal waters, consisting of arrow head-shaped bamboo fences. The throat of the head is open, so that fish swimming along the barbs find their way into the interior but are unable, apparently, to find their way out again. In some cases the point is opened and successively smaller traps placed ahead so that the concentration of fish becomes greater. At the head of one such trap in Jolo, a native had built his home over the water. We suppose he had simply to dip a net under the floor of his home and bring up the dinner.

Upon landing, we found the field immediately covered with one of the most picturesque crowds of natives in the Islands. These Moros go in for color, dresses (the men wear them), turbans, odd hats, rags, and some of the youngest-nothing at all. George Hansen's friends can imagine what a picnic he had, and some of the others who would be photographers didn't have such a bad time either. We tried to corral a youngster in the raw to get our pictures with him, only to find that while he had been crowding in to get a look at us, at first, he was gone like a scared rabbit as soon as he found out we wanted to look at him. With the aid of an interpreter, a few centavos, and much coaxing we finally got the pictures, as well as others of some of the costumes, black teeth and red lips from the old beetle nut habit. Many of these Moros still chew the native beetle nut, which makes their lips red and their teeth jet black. It was noteworthy that in this entire crowd there was not a single woman. Apparently, these men know how to handle their women.

As they were at all our stops, the Constabulary officers were more than kind and courteous. They placed a guard on the planes and furnished a reconnaissance car to take us to town, where we found the market in full swing - and the women, not in full swing but there - working. In these markets you find practically everything of any importance to native life, but little that you would care to eat. We did risk a little milk from a cocomut and a bottled soft drink, but the sad part here, as in many of the other small villages, was that the signs "Ice Cold" didn't mean much, and it was all fair to middling warm. Some of the fish were quite pretty - all shades of the rainbow with a predominant blue - but others were not so beautiful, and they all had that repelling aroma which comes to fish after so long a time in the sun. Enough of that. We drifted on to other things. More black coral; bracelets at ten centavos; more bracelets for five. Lieut. Pillet brought three. Later, more were offered to him, and what a shock he received after producing those already obtained in defense of a further purchase to be told- "But these - real black coral - those - just Japanese imitation." They did look pretty much like hard rubber, but anyway his little girl doesn't care or know the difference. We split up here, and when we next assembled, what a collection!

There were brass trays; silver rings, mats, rope, cord, native straw hats, a plaque of miniature Moro weapons for Major Barnett, and for Colonel Voss almost a complete collection of the real things. Look out for him the next time you run across him. He also had along an old Moro soldier who claimed to have eleven heads to his credit, and who was acting as the Colonel's man Friday,- keeping the crooks from gyping him. Unfortunately we couldn't take this old man along with us, but apparently the Colonel had learned his lesson well, for he drove mighty hard bargains from then on, even without the assistance of the old headhunter.

Just as we were about to leave we ran across the local "Datu," - religious and political head of the district. He was clean and neatly dressed in American style coat and pants, wore tennis shoes, and one of the kind of shirts generally accompanied by a detachable collar, but which in his case was not so accompanied, although it was buttoned up to and including the collar button. Wherever he went he was accompanied by a native with a shotgun. It seems that one of the more

recent contenders for the title of "Sultan of Sulu" not long ago died very suddenly from unexplained causes, and the Datu, being the father-in-law of the Sultan of Sulu, probably needed all the protection he could get. After a very flowery conversation with the Colonel through an interpreter, during which he told us how happy he and his people were to have us there and how much they loved the United States, he offered to take us out to the Palace and introduce us to his daughter, the famous Princess Dayang Dayang, Sultana of Sulu. Much to our chagrin, however, we found that the Sultana's husband was not in; she would therefore be unable to receive us, but would be glad to do so at some other time in the presence of her husband. So we didn't meet the Sultana of Sulu.

Back in Zambo that evening, we drove out to the San Ramon Prison. The Superintendent was most accommodating and took us through practically the entire prison. It was orderly, neat and clean, but the boards the men have for beds did not seem very inviting, and the little straw brooms on each bunk were there, we found, for the purpose of shooing away the mosquitoes. There were no screens, and if the mosquitoes there are in the least degree as multitudinous as they are in the vicinity of Nichols Field, we can't imagine how the poor men can do anything but "shoo" all night long. The Prison Post Exchange was one of the most interesting places we visited on the entire flight. There we found all manner of very fine wood carving, walking sticks, book ends, beautiful hardwood serving trays, and many, many sizes and models of the little native boats with outriggers and colored sails. Some of us were already running low on cash, but others were still going strong, so here the party's collection took another jump upward with a little of nearly everything named.

It was supper time, and an inspection of the kitchen with its goulash of native greens and dried ripe fish nearly made us all sick, although we understand that it is considered quite good by many of the natives. In fact, one of the prisoners informed us that times had been kind of hard on the outside, so he just stole something and got inside. Others had not arrived so much of their own volition, however. One was in for manslaughter - he had merely killed his wife. Evidently in that country what one does to his own wife is not so serious, but in the case of another man's wife - well, that's different. As we departed we found out what to do with useless people. One old man was swatting flies and putting them in a bottle, while another watched him. It seems that the former was good for nothing else, while the latter was not even as good as the former - and they had to have something to do. Oh! we almost forgot. At San Ramon they have a "Jail" in the prison. We had our pictures taken in front of it. Guess it must be for the bad men.

Well, the story runs on and on, but it was lots of fun in the making - the doing, but not the writing - and we hope a little of the fun and interest will trickle through to our indulgent readers - if there be any. Most of us finally got into the hay after this eventful day, except the Colonel, who had to write a note to his Commanding Officer, due down on an excursion boat in a few days, and tell her what not to buy. He drifted down to the Over Seas Club for this purpose, and when he returned he brought "Bridget," our first real monkey which, contrary to the old story, did have a very long tail. We all had to get up to meet Bridget, who was a constant center of attraction for the rest of the flight, but finally quiet again prevailed, and the following morning found us "Up and at 'em," and ready for other Isles - after the Colonel had picked up a couple of Moro costumes to go with his weapons.

Another pair of fifty-mile water hops brought us to Cotabato, where we picked up more brass, weapons, and a turban. The Constabulary officers here gave each officer an old gun or pistol. Most of them were a type of shotgun made by the natives illegally and confiscated by the Constabulary. They consist essentially of a rough stock with a piece of water pipe arranged to slide on it so that when it is pulled back the primer of a shotgun shell inserted in the rear of the pipe strikes a firing pin. Imagine trying to jerk one of those things on a target as you fired it. One other type had a tiny hole in the rear for a fuze, like an old cannon. You couldn't jerk or pull that baby in firing it. One was an old piece made by the Colt Mfg. Co., Hartford, Conn., in 1863, and repaired with a 1901 Chinese penny. It was an old cap primer.

The next stop was just about fifty miles further on inland at Lake Buluan, an isolated Constabulary Post. We had to fly around for about ten minutes before landing while they drove the carabao off the field, but when we finally got down - what a reception! Lieut. Navarro, the local Commanding Officer, took us to his home at the edge of the flying field, placed refreshments upon the table for both officers and men, and then insisted that we stay for dinner. Chickens were caught, killed and fried, and in a short time he and his family had produced a dinner for fourteen, fit for a king. And he didn't know we were coming, either, until he heard the sound of our engines. After dinner he had cigarettes and cigars for us, and ended by giving each of the officers something - one a fine barong (type of bolo), another a set of bow and arrows,

another a spear, etc. But Major Barnett drew the prize - an old barong without a sheath, with a split handle. It seems that it had been taken from a Moro who had gone hermantado (crazy), and killed three or four people. As he had the weapon raised over his head for another stroke, butt of the handle forward, one of the Constabulary soldiers fired right into it and then shot him. We were all very grateful to Lieut. Navarro for his exceedingly kind hospitality, but could do nothing for him except to refuse to accept payment for a battery we had brought him for his radio.

Upon leaving Buluan, the same comedy took place which attended our departure from each of the other fields but which had not been mentioned up to this point. All the native children gathered around as we warmed up the engines and had a big time trying to stand up behind the propeller blast. The few clothes of those who had any were blown about like a flag in a gale, and there was just one mass of naked arms, legs and bodies tumbling about behind each plane. They loved it, too, even following the planes around as they taxied into take-off position and running after them a little way.

We had been working Nichols Field with our SCR 187's, but on this particular day had not been able to contact them, so when contact was made just before we landed at Davao, about 5:30 p.m., Lieut. Hansen gave the word for the two other planes to land, via the 183, and remained up to finish the transmission of necessary messages. When he landed we learned that there was a nice little typhoon about 300 miles east of the San Bernardino Straits (some little distance north of Davao) headed north and west, and reported in this position at 6:00 a.m. that date. Next morning we learned further that the number six signal (indicating a typhoon of considerable intensity passing very close, and winds of gale force to be expected) was up in Manila, and then you should have heard some of the old timers gripe about how long they had been in the Philippines, never seen a good typhoon, and then had to be off in the Sunny Southern Islands while one hit right next to home.

At the local hotel in Davao we found a playmate for Bridget and left them together while we journeyed to an appropriate club to pass the evening. At Davao we accumulated more bows and arrows, knives, spears, shields, etc., and Major Barnett got away with Bridget's playmate. In fact, she was given to him.

We left Davao early the next morning, Thursday, in order to take full advantage of market day at Dansalan, on Lake Lanao. Upon arriving there we found the usual Constabulary guards and reconnaissance cars to take us hither and yon, and drove immediately to the market. It is located right on the shore of the lake and boasts of two or three sheds in which fabric materials are displayed, but in the main consists of row upon row of natives who bring what they have to sell, each Monday and Thursday morning, and lay it upon the ground or on small stands. Apparently they come from all over that part of the Island, either on foot or in their little boats which fill the bay by the market. At the entrance there was a carabao market with a number of young animals. We had hoped to watch their owners bargaining, but were disappointed, as we were always as much of a curiosity to the natives as they were to us, and they always quit their chatter and stared at us whenever we were around. For some strange reason, none of us got the urge to pick up any of these animals, so they with some young goats we saw later remained about the only souvenirs we left behind on this flight. Beyond the carabao market were rows of odds and ends, trinkets, flashlights, cheap mirrors, cheap underwear (probably the product of a foreign country), local jewelry, fine brass trays, etc. On down closer to the Lake were piles of native rice, and fish - all kinds of fish, as in Jolo, and, as in Jolo, they were plenty ripe. We couldn't stand it long down there with the mixture of that well known damp, sour, marsh odor, and that of the overripe fish, so we finished our buying as quickly as possible and left the market, but not before observing one more humorous incident.

Before coming to the Philippines we had heard much about the semi-nakedness of some tribes here, but up to this date none of us newcomers observed any of this except in the children. No doubt it does exist, but we have not run across any. In this particular locality it is the custom for many of the people to wear a costume consisting of a big piece of cloth like a large roller towel. They drape it about their bodies in various styles and seem to put forth considerable effort in holding it up, but usually succeed very well and keep themselves completely covered with it. One buxom young woman, however, had a little trouble on this particular morning, although it didn't seem to give her much concern. She had on a black sack-like cloth which she held up in front with one hand or the other very well until she got into an argument with one of the other natives. Then she seemed to develop a little Jewish instinct, and there were considerable periods of time during which no hands were available for the holding up process, and the cloth would fall to her waist where, for some reason, it would always hang. In between the times of greatest intensity of the argument she would find time to pick it up again for a moment, but did so with the air of one accomplishing some little job

which might well be done to kill time, but which should never be allowed to interfere with anything of real importance.

After the market we went up to see Professor Moncado's Colony on the top of a hill near Dansalan. Here we found a number of frame buildings and a great deal of concrete statuary. In the yard was a concrete boat, about 25 feet long, containing concrete mermaids and various and sundry animal groups. We couldn't get the idea of just exactly what it was all about, except that it seemed to be built with the purpose of symbolizing the theme that it is wrong to kill and eat animals. In one of the buildings we found a number of wire enclosed rooms, each containing a full family group in life size concrete, shown eating their native food, each in the manner of the country depicted. There were groups showing Eskimos, Americans, Spaniards, Indians, Filipinos, Chinese and Japanese, and in each case the food was well duplicated in concrete and realistically painted. On one wall was a tablet telling the life story of the famous prophet Moncado - how he had set out to find the best diet for men by living in nearly all countries of the world, spending months in each one, eating their native food, from the poi of Hawaii to the raw fish of the Eskimos, and of the results he obtained from each of these native foods. He found American food all right, said that Chinese food made him lazy; Mexican was too highly spiced for proper digestion, and so on; but finally ended by stating that apparently different nationalities possessed different types of stomachs and probably should eat different diets. He had also decided, however, that it is best not to eat meat or cooked food, so none of the people who live with him do so. They seem to live principally on fruit, but the few whom we saw seemed to be in good health and had very clear complexions.

Moncado is a Christian, but seems to be a religious and dietetic fanatic. We had heard that he had seventeen wives, but it developed that he was running some kind of orphan asylum which contained about that number of little girls. At least, this is what one of the girls told us. They were all dressed in American style and, like the entire establishment, were neat and clean. We were unable to learn where the money came from to keep the place up. When we asked, one of the girls informed us that Dr. Moncado had many ways of making money - he had many friends in America. It was just a curious place about which we could learn little. Typical of the general trend of thought about the place was a quotation from Mr. Moncado concerning a sort of political party of which he is the leader, the "Modernists," which quotation was prominently and proudly displayed upon one of the walls: "All Modernists are not members of other political parties, but all those not members of other political parties are Modernists, and all members of other political parties are Modernists." Now there is a profound bit of wisdom upon which to cogitate.

When we left Moncado's it was after noon. We found that the market had broken up, and some of the natives had walked the mile or two to Moncado's to further press their wares upon us. At the flying field, another couple of miles away, we found still more, and the only way we could escape them was to take the air.

From Dansalan we flew to Del Monte, where many of your pineapples are grown. Here we were back in real American atmosphere again, and it was a pleasure. We had good American food with fresh pineapples for desert, enjoyed meeting the American officials of the Company, and found the weather delightful. The altitude of the plantation is not high, just about 2,000 feet, but it seems to be sufficient to insure a delightful year round climate, and we found to our amazement a road lined on one side with palms and the other with firs, all in excellent condition. The temperature seems to range from 65 to 80 degrees. There was nothing for sale, either, except the food and lodging, and that fact added to the comfort of the place.

The same afternoon brought us to Cebu, about whose virgins you have no doubt heard in that well known song which states - "She was born just yesterday." In Cebu we went through an old Spanish fort, now used as an industrial school, saw the original wooden cross which Magellan erected there in 1531, accumulated a couple of banjos, another monkey, for Lieut. Pillet, and prepared to shoot for home.

Saturday we blazed that old home trail, flew up to 8,000 feet, and shuddered a while to get a glimpse through the clouds of the smoking top of the Mayon volcano, and radioed for a couple of trucks and a photographer to meet us. Each of us was glad to get home again, but we were convinced that we had never spent a more interesting or worthwhile week.

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Five enlisted men of the Medical Department, stationed at various Air Corps Fields, were recently ordered to the School of Aviation Medicine, Randolph Field, Texas, for the purpose of pursuing a course of instruction for enlisted specialists.

These enlisted men, all of the grade of Private, are: Robert M. Denton, from Barksdale Field, La.; Henry G. Lewis, Maxwell Field, Ala.; Harry L. Mitchell, Langley Field, Va.; Robert W. Page, Selfridge Field, Mich., and John W. White, Mitchel Field, N.Y.

STATE HIGHWAY NAMED FOR DECEASED AIRMAN

As a result of a letter written by Colonel Henry W. Harms, Commandant of the Air Corps Primary Flying School, Randolph Field, Texas, to the Texas Highway Department, the new road connecting Randolph Field with State Highway No. 2, between San Antonio and Austin, has been designated the "Pat Booker Road," honoring the memory of Captain Booker, who died as the result of an airplane crash at Maxwell Field, Ala., September 16, 1936. The minutes of the State Highway Commission are as follows:

"Whereas, a State Highway has been constructed in Bexar County from State Highway No. 2, U.S. No. 81, to the entrance to Randolph Field, and,

Whereas, Pat Booker, a close friend and flying companion of W.M. Randolph, for whom Randolph Field was named, crashed and has gone to join his friend in that sacred place reserved for intrepid flyers,

Therefore, in memory of Pat Booker, it is ordered that the State Highway from State Highway No. 2 to Randolph Field be designated as "Pat Booker Road" and that it be so marked.

It is also ordered that a copy of this minute be sent to Colonel Henry W. Harms, Commanding Officer of Randolph Field; Honorable Frost Woodhull, County Judge of Bexar County, and Honorable C.K. Quin, Mayor of the City of San Antonio, with the request that they advise the nearest relatives of Pat Booker of this action."

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WE ACCEPT THE AMENDMENT

In the previous issue of the News Letter, quoting an item from one of our correspondents, it was stated that when the Wright Brothers flew their first airplane, over 33 years ago, it had a tricycle landing gear. This statement was preliminary to some information concerning the testing at Langley Field of an OA4-A airplane equipped with a tricycle landing gear.

The Aviation Editor of the Dayton Daily News calls attention to the fact that the first Wright planes had no wheel landing gear whatever, depending entirely on skis, and when the wheel type gear was added later (about 1909-1910) it was not the tricycle type. He adds that Glenn Curtiss was the first man in this country to use the tricycle landing gear and, as far as he knows, the first in the world. The tricycle gear, he claims, was a distinctive Curtiss contribution.

Reference to photographs of the early Wright and Curtiss airplanes clearly substantiate the contention of the Aviation Editor of the Dayton Daily News.

GRADUATION OF PRIMARY SCHOOL STUDENTS

The present class of students at the Air Corps Primary Flying School, Randolph Field, Texas, expects to complete the course of training thereat on February 19th. This class is the first to train on the new basic type equipment, and contains ten officers of the Regular Army, fifty-six Flying Cadets, and two foreign students, one of whom is an officer from the Mexican Navy and one a Flying Cadet from the Philippine Islands.

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DUTY ASSIGNMENT OF ARRIVALS IN HAWAII

Among arrivals in Hawaii on the U.S. Army Transport CHATEAU THIERRY on January 15th were seven Air Corps who were assigned to duty at Luke Field with the following organizations: 1st Lieuts. Lawrence H. Douthit with the 65th Service Squadron; Donald W. Titus, Hawaiian Air Depot; Donald R. Lyon, Headquarters 5th Composite Group; Leland S. Stranathan, 50th Observation Squadron; 2nd Lieuts. Robert M. Stillman, 72nd Bombardment Squadron; Maurice M. Simons and Louis W. Proper, 23rd Bombardment Squadron.

When the above named transport sailed on January 19th for the mainland, she took the following-named officers from Luke Field, who go to duty at the stations named: 1st Lieuts. William G. Bowyer and Charles H. Pottenger to Randolph Field; John G. Fowler to Bolling Field; William L. Travis and Milton F. Sommerfelt to Mitchel Field.

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FIELD EXERCISES IN THE PHILIPPINES

The Philippine Department Field Exercises were held during January, and the Third Pursuit Squadron, Clark Field, P.I., was based at Del Carmen, the excellent field of a sugar central located in southwestern Luzon. New airplane and ground radio equipment had just been received and, thanks to the Communications Officer, the maneuvers were far more interesting than any experienced in the few years since the old radio sets of the Squadron "went native" from the excessive heat and humidity.

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The number of visiting airplanes at Scott Field, Belleville, Ill., during the calendar year January 1 to December 31, 1936, was 1685. This figure is somewhat under the total of 2448 visiting planes for the calendar year 1935.

The difference is not due to any curtailed flying activities but rather to a considerable amount of regional unfavorable flying conditions.

GRADUATION OF ADVANCED FLYING SCHOOL STUDENTS

The class of students undergoing training at the Advanced Flying School, Kelly Field, Texas, and which is scheduled to graduate on February 17th, numbers 33, including three officers from other branches of the military service and 30 Flying Cadets.

War Department orders previously issued assigned the three student officers, upon their graduation, to duty with the Air Corps, viz: Captain James R. Andersen, Ordnance Department, and 2nd Lieut. Jack W. Hickman, Corps of Engineers, to the Hawaiian Department, and 2nd Lieut. J. Kimball Brown, Jr., Field Artillery, to Brooks Field, San Antonio, Texas. All three of these officers are graduates of the United States Military Academy, Captain Brown graduating in 1926 and Lieuts. Hickman and Brown in 1935. They specialized in Observation Aviation.

The remaining students, upon graduation, will be assigned to Air Corps tactical units for active duty, and are listed below, as follows:

Bleyer, Julian M. (Bombardment)	Tulsa, Okla.
Box, Clyde (Attack)	Denton, Texas
Brogger, Jacob J. (Pursuit)	Butterfield, Minn.
Cochran, Philip G. (B)	Erie, Pa.
Dalton, Lloyd H. Jr. (B)	Ottawa, Kans.
Dillingham, Walter M. (P)	Honolulu, Hawaii
DuBose, James R., Jr. (A)	Aiken, S.C.
Eubank, William E., Jr. (A)	Bluefield, W. Va.
Harvey, Sterling G. (Obs.)	Bloomsburg, Pa.
Helton, Elbert (A)	Clifton, Texas
Hillery, Edward G. (B)	Boonton, N.J.
Hoffeditz, Aaron H. (O)	Greencastle, Pa.
Hunker, Joseph F. (P)	San Diego, Calif.
McNown, William K. (B)	Lawrence, Kans.
MacDonald, Donald W. (B)	San Francisco, Calif.
Margrave, Thomas E. (B)	Gordon, Nebr.
Myers, Thornton K. (B)	Lafayette, Ind.
Nau, Wallace E. (A)	Pasadena, Calif.
Patterson, Steele R. (P)	Seneca, S.C.
Perry, Norris (B)	Sedro-Woolley, Wash.
Phelps, James W. (B)	Berwyn, Pa.
Schoch, Jack L. (B)	New Ulm, Minn.
Snavely, Eugene H. (B)	Harlingen, Texas
Tate, David A. (B)	Asheville, N.C.
Theobald, Robert A. (B)	Portland, Ore.
Thorne, Henry G., Jr. (P)	Fort McPherson, Ga.
Triffy, Sam P. (B)	Detroit, Mich.
Watson, Harold E. (B)	West Hartford, Conn.
Young, Earl B. (B)	Sidney, Nebr.
Zemke, Hubert (P)	Missoula, Mont.

When this class started flying training in March, 1936, at the Primary Flying School at Randolph Field, Texas, with but 65 students, it proved to be the smallest one entering that school for quite a number of years. With 33, or 51 percent of the original number of atudents entering the class, successfully completing the one-year intensive course of flying instruction, it appears that an excellent record was achieved, since the normal average of students "making the grade" is about 45%.

The States of California and Texas, each with three students, had the largest representation of native sons in the graduating class. Four of the graduates, Flying Cadets Nau, Thorne, Margrave and Hoffeditz, were Air Corps enlisted men prior to appointment as Flying Cadets.

REVOLUTIONARY CHANGES WROUGHT BY AVIATION

In an address delivered recently by Colonel Charles A. Lindbergh at a luncheon in his honor by the German Air Ministry, he stated, in substance, as follows:

I sometimes feel those of us who grew up in aviation have lived much more than an average lifetime. It seems almost as though we have the opportunity of living in the future and looking back on our lives, of judging our work through another generation's eyes.

Certainly the whole world has never changed faster than at the present time, and during this change nothing has developed more rapidly than aviation. If the man who sailed the first dugout canoe could live again he would hardly see more change in ships than our own generation has seen in aircraft. Except for the fact that he had not lived through the intermediate centuries of development, the modern battleship would give him no more cause to ponder than the modern bomber should give us. He could no more have seen a 16-inch gun attached to his canoe than we were able to see five or ten thousand pounds of bombs attached to our planes of twenty-five years ago.

Scientists now talk of time in terms of Astronomy, Physiology, and Psychology. Our concepts of time are changing, and I think it is nowhere more noticeable than in aviation. Our ideas of time and distance are entirely different from those our fathers held.

Unlike the builder of the dugout canoe, we have lived to see our harmless wings of fabric turn into carriers of destruction even more dangerous than battleships and guns. We have lived to carry on our shoulders the responsibility for the results of our experiments, which in other fields have been passed to future generations.

We who are in aviation carry a heavy responsibility on our shoulders, for while we have been drawing the world closer together in peace we have stripped the armor of every nation in war. It is no longer possible to shield the heart of a country with its army. Armies can no more stop an air attack than a suit of mail can stop a rifle bullet.

Aviation has, I believe, created the most fundamental change ever made in war. It has abolished what we call the sense of warfare. It has turned defense into attack. We can no longer protect our families with an army. Our libraries, our museums - every institution which we value most, is laid bare to bombardment.

Aviation has brought a revolutionary change to a world already staggering from changes. It is our responsibility to make sure that doing so we do not destroy the very things we wish to protect.

We have moved so fast we have imposed aeronautical time upon military tactics, and we have taken away the old defense of astronomical time, which has probably been civilization's greatest safeguard in the past.

As I travel in Europe I am more than ever impressed with the seriousness of the situation which confronts us. When I see that within a day or two damage can be done which no time can

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BIOGRAPHIES

LIEUT. COLONEL GEORGE E. LOVELL, JR.

Lieut. Colonel George E. Lovell, Jr., Air Corps, now on duty as Executive Officer, Barksdale Field, Shreveport, La., was born at Buffalo, New York, August 10, 1889. Graduating from the U.S. Military Academy, June 12, 1913, he was commissioned a second lieutenant and assigned to the 9th Cavalry, with station at Douglas, Arizona, where he served from September 12, 1913, to October 15, 1914. He was stationed at Naco, Arizona, on border duty to January 10, 1915, and at Douglas, Arizona, and vicinity to April 20, 1916.

Attached to the Aviation Section, Signal Corps, he attended the Aviation School at San Diego, Calif., and upon the completion of his flying training he was rated a Junior Military Aviator, effective November 19, 1916. He was promoted to 1st Lieutenant, Cavalry, July 1, 1916.

Colonel Lovell joined the 1st Aero Squadron on December 15, 1916, and was stationed at Colonia Dublan with a detachment of that Squadron to January 28, 1917. He was then stationed at Columbus, New Mexico, to March 31, 1917. Following duty with the 3rd Aero Squadron at Kelly Field, Texas, to October 28, 1917, he assumed command of Taliaferro Field, Texas, and served in this capacity to March 5, 1918. He was on duty as Executive Officer at this field to July 25, 1918; commanded the School of Aerial Gunnery thereat to August 8th; resumed command of that post until September 5, 1918, when he was ordered to duty overseas.

While on duty with the A.E.F. in France, Colonel Lovell was Executive Officer of the 2nd Aviation Instruction Center, October 10, 1918, to February 10, 1919. Thereafter and until he was relieved from duty with the A.E.F., April 25, 1919, he was on duty as Chief of Staff to the Army Air Service Commander, 1st Army. Upon his return to the United States, he served as Officer in Charge of Administration, Rockwell Field, Calif., to July 28, 1919, when he assumed command of Park Field, Millington, Tenn., to April 19, 1920.

Transferred to Camp Benning, Ga., Col. Lovell served as commanding officer of Air Service activities thereat to August 15, 1921, when he was transferred to McCook Field, Dayton, Ohio, for duty as student at the Air Service Engineering School. Upon his graduation in August, 1922, he was assigned to the command of the 99th Aero Squadron at Bolling Field, D.C., and as Executive Officer of this post. In July, 1923, he was transferred to duty in the Hawaiian Department, where he served as Commanding Officer of the 5th Composite Group and of Luke Field, T.H., to April 6, 1924; as Executive Officer, 4th Observation Squadron, Wheeler Field, TH, to July 29, 1924; as Commanding Officer of the Hawaiian Air Depot to January, 1926, and as Commanding Officer of the 5th Composite Group and Luke Field, to May 26, 1926.

Returning to Bolling Field, D.C., Col. Lovell performed various duties at this stations, such as post commander, engineering officer, and commanding officer of the 56th Service Squadron, also Executive Officer and Operations Officer, until June, 1927, when he was detailed as Assistant Military Attache for Aviation, American Embassy, Rome, Italy.

Upon the completion of his four-year tour of duty on this assignment, he was transferred to Langley Field, Va., and in September, 1931, he was assigned to duty as student at the Air Corps Tactical School at Maxwell Field, Ala. Upon his graduation from this school in June, 1932, he was assigned to his present station at Barksdale Field, La.

Colonel Lovell was promoted to Captain, Cavalry, May 15, 1917; to Major, July 1, 1920, and to Lieut. Colonel, August 1, 1935.

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LIEUT. COLONEL CARLYLE H. WASH, A.C.

Lieut. Colonel Carlyle H. Wash, Air Corps, now on duty as Commanding Officer of the 17th Attack Group at March Field, Riverside, Calif., was born at Minneapolis, Minn., October 15, 1889.

After attending the University of Minnesota for one year, he received appointment as a cadet at the United States Military Academy, from which he graduated June 12, 1913, whereupon he was appointed a second lieutenant and assigned to the 6th U.S. Cavalry. Following service at Texas City, Texas, September 13 to October 6, 1913, during which period he was attached to the 22nd Infantry, he served with the 6th Cavalry at Texas City, Harlingen and Mission, Texas, to April 28, 1916. He participated in action against Mexican bandits at McAllen's Ranch and Ojo de Agua, Texas, in October, 1915.

From May 20, 1916, after nearly a month of duty with the Punitive Expedition into Mexico, to August 16, 1917, Colonel Wash was on border patrol duty in Big Bend District, Texas. He was District Ordnance Officer of the Big Bend District from February 11, 1919.

Attached to the Aviation Section, Signal

Corps, August 2, 1917, he was a student undergoing flying training training at the Aviation School at San Diego, Calif., to December 13, 1917, when he was rated a Junior Military Aviator. He remained at San Diego (Rockwell Field) as an instructor in flying, aerodynamics and gunnery, to February 1, 1918. Transferred to Call Field, Wichita Falls, Texas, he was in charge of flying and commanding the Air Service Flying School thereat from February 6 to April 16, 1918. He was next assigned to Souther Field, Americus, Ga., and organized and commanded the Air Service Flying School there. During his regime at Souther Field, students flew about 20,000 hours, and 275 students were graduated between June 1, 1918, and the signing of the Armistice without a single fatality being recorded.

Upon the closing of Souther Field, Col. Wash was assigned, January 19, 1919, to the Air Service Engineering Division at McCook Field, Dayton, Ohio, as supply officer, in which position he had charge of several million dollars worth of Air Service property.

Relieved from duty with the Air Service in October, 1919, he served with the 15th Cavalry at Fort D.A. Russell, Wyoming, until March, 1920, when he was redetailed to the Air Service and assigned to duty at McCook Field, Dayton, Ohio, as Chief of the Flying Section, Engineering Division. In November, 1920, he was assigned as student officer at the Air Service Engineering School at McCook Field, and shortly following his graduation therefrom he was assigned to duty in Washington, D.C., in the Office of the Chief of the Militia Bureau.

On July 25, 1922, he began his duties as Assistant Military Attache at the American Embassy, Paris, France. During the period June 11 to July 14, 1924, he was on duty as Advance Officer for the 5th Division of the Air Service Around-the-World Flight.

Returning to the United States in April, 1925, Colonel Wash was assigned to duty as Executive Officer of the 10th School Group at Kelly Field, Texas. On October 2, 1926, he was designated as Officer in Charge of Training of the Advanced Flying School, Kelly Field, and he continued on this assignment until March 14, 1927, when he assumed command of March Field, Riverside, Calif. On August 10, 1927, he was assigned as Director of Training of the Air Service Primary Flying School, which was established in that year at March Field. At various times he also temporarily commanded the post.

In April, 1928, Col. Wash was transferred to duty in the Panama Canal Department, where at first he was in command of France Field and the 6th Composite Group, and later Executive Officer thereof.

Transferred to duty in the Hawaiian Department in February 1929, he assumed command of the 18th Pursuit Group at Wheeler Field, T.H. In July, 1931, he was detailed as Air Officer, Hawaiian Department, in addition to his other duties, and performed this additional duty until November 26, 1930.

Relieved from assignment with the 18th Pursuit Group, May 16, 1931, Colonel Wash was assigned as student at the Air Corps Tactical School at Maxwell Field, Ala., and, following his graduation, June 11, 1932, was assigned to Mitchel Field, N.Y., as Executive Officer of the 9th Observation Group, and of the post. At various times he assumed temporary command of the post.

Detailed as student at the Command and General Staff School, Fort Leavenworth, Kansas, for the 1934-36 class, Colonel Wash, upon his graduation from the two-year course at this school, was assigned to his present station, March Field.

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Scott Field in Flood Relief Work

(Continued from Page 1)

W8CJH handled a total of 640 messages. These messages included the following types: 163 personal, 33 Red Cross, 28 U.S. Army, 24 National Guard, 10 Police, 3 Coast Guard, 4 American Legion, 1 Salvation Army, 4 W.P.A., 5 Federal Surplus Corporation, 1 Boy Scouts of America, 5 airplane, 18 information and weather, and 19 commercial radio.

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A Marine Corps flight, commanded by Colonel Roy S. Geiger, and composed of four Squadrons (51 airplanes, 56 officers and 74 enlisted men), stopped overnight at Randolph Field, Texas, on January 25th. The flight was from Quantico, Va., and enroute to San Diego, Calif., for maneuvers.

The Third Pursuit Squadron, stationed at Clark Field, Pampanga, P.I., recently completed another cross-country flight to the Southern Islands of Leyte, Cebu, Bohol, Mindanao, Jolo, Masbate, Negros, Mindoro and Panay. Approximately twenty-five landing fields were visited during the five-day trip, and all were found to be in a generally good condition. The Squadron's P-12 airplanes of B, C, D and E vintage were used on the trip and, as usual, performed well. All pilots wore the new "Jungle Kits" sewed to their parachute pack. Fortunately, they did not have occasion to test them under actual conditions.

A class is being sponsored at Scott Field, Ill., by Chaplain James C. Bean, which offers the opportunity to all members of the command to study and prepare themselves for the various Air Mechanics examinations.

LICENSES FOR BOLLING FIELD RADIO OPERATORS

Pending the completion of the new control tower, all the radio operators in the Communications Department at Bolling Field are preparing themselves for their new jobs. They will be required to handle communications from the tower and control landings and take-offs. Since the system of operation will be similar to that used by commercial control towers, each individual is anxious to achieve the utmost efficiency in his duties. To bring their standing on a par with commercial towers, all the operators are getting a Class 3 commercial license in radio-telephony. On Thursdays, the Federal Communications Commission in Washington gives an examination for licenses, so each week two or three operators have taken it and received their diplomas. Five operators now have their Class 3 Commercial, and the rest hope to have theirs before tower control is started.

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NEAR CHANGE OF STATION PROVES COSTLY

Our Richmond correspondent reports that Colonel Jack Beam and wife recently took a hurried and unexpected trip to Richmond, Va. It seems that Jack had first gotten a short pass for his wife from the Hospital and then went down to the railroad station to greet some friends passing through. The greetings and farewells were prolonged by a few seconds beyond the allotted time, and the first indication Jack had that things were not just as they should be was when the train entered the tunnel and sudden darkness indicated that it was too late to jump. Besides, Jack didn't have his parachute. In spite of all his pleadings, remonstrances, etc., he could not prevail upon the Skipper of the train to make a landing short of the first scheduled stop - Richmond. At almost three A.M. Jack again reached Washington a sadder, wiser and poorer man, to the viz: 14 bucks.

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STUDENT MAINTEMANCE NAVIGATION FLIGHT

This final student cross-country flight departed from Kelly Field on February 3d, after having been delayed one day due to inclement weather. The flight commander was Colonel E.A. Lohman, Assistant Commandant of The Air Corps Advanced Flying School. The flight consisted of 14 instructors, 3 student officers, 29 flying cadets, and 15 enlisted mechanics; in 9 P-12D's, 9 A-12's, 8 O-25's, 10 B-4's and B-6's and 3 BT-2BI airplanes.

Stopping over night at Barksdale Field, February 3d, the students were afforded an opportunity of inspecting a GHQ Air Force station.

On February 4th, the flight proceeded to Maxwell Field, and the last report showed them at Athens, Georgia, where they were spending the night and visiting the University of Georgia. Upon departure from Athens the flight is scheduled to visit the Georgia School of Technology at Atlanta, Georgia; the University of Alabama at Auburn, Alabama, and the Louisiana State University at Baton Rouge, Louisiana.

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Revolutionary Changes Wrought by Aviation

(Continued from Page ..).

ever replace, I begin to realize we must look for a new type of security - security which is dynamic, not static, security which rests in intelligence, not in forts.

And in the fact that intelligence must be combined with aviation I find some cause for hope. It requires more intellect to operate an airplane than to dig a trench or shoot a rifle. The education which is necessary in aviation must also teach the value of civilized institutions.

Our responsibility in creating a great force for destruction may be somewhat relieved by knowing we have allied this force with intelligence and education and that we have moved power further away from ignorance. I find some cause for hope in the belief that power which must be found to knowledge is less dangerous to civilization than that which is barbaric.

It is aviation's responsibility to justify the combination of strength and intelligence.

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A.C.OFFICERS ASSIGNED TO INDUSTRIAL WAR COLLEGE

Special Orders of the War Department recently issued assigns the following-named Air Corps officers for duty as students at the Army Industrial College, Washington, D.C., for the 1937-1938 course, viz:

Majors Shiras A. Blair, John A. Laird, Jr. (Captain), Malcolm S. Lawton (Captain), Robert T. Zane (Captain), now students at the Air Corps Tactical School, Maxwell Field, Ala.

Major Edward L. Powers (Captain), Wright Field, Ohio.

Captain Julian B. Haddon, Air Corps Tactical School, Maxwell Field, Ala.

Captain Harry H. Mills, Instructor, Michigan National Guard, Detroit, Mich.

Major Clarence P. Kane (Captain), Hawaiian Department.

Major Don L. Hutchins (Captain), Hawaiian Department.

The above-named officers are relieved from assignments and stations indicated and from whatever duty they may be performing, effective at such time as will enable them to report between August 16 and 21, to the Director of the Army Industrial College for duty.

V-7231, A.C.

ANOTHER GOLD HUNT BY AIR CORPS SOLDIERS

Below is an extract from a recent letter written by William T. Bennett of the 25th Bombardment Squadron, France Field, Canal Zone.

Readers of the Air Corps News Letter may recall an abbreviated diary written by this same soldier, and which was published in a recent issue of the News Letter.

This extract is a report upon another expedition made by soldiers into the jungle fortress that protect. the gold deposits of Panama and, although it does not reveal astonishing discoveries of tremendous gold wealth, it is a report upon the wealth of experience that is open to the Air Corps soldier in Panama, if he has the energy, the imagination, and the spirit of adventure required to take advantage of it.

"We left France Field on the morning of December 2, 1936 for Albrook Field. Here we were met by a truck which took our equipment and supplies to Madden Dam, where we were met by four natives with two large cayucas.

They finally loaded everything, including the three of us, and away we started. At this time of the year, the Chagres River is quite a lake, and we were able to paddle for the entire first day. As interesting as riding a cayuca into vergin jungle on a perfectly clear day can be, it is extremely tiresome. After a while the shores all look alike and all one can think about is shade.

We spent a night under the stars, and would have slept all night had we not been lying so close to an ant nest.

By daylight the next morning, we were under way and soon thereafter the river narrowed, as we had reached the foothills and were starting up. The natives had to relinquish their paddles in favor of poles and we had to wade at least half of the time. The rapids were swift, rocky and hard to navigate, and walking was difficult, as the footing was slippery and over large and small boulders. We finally made it, and late that night we reached Candelaria where we intended to make a more or less permanent camp.

After we had everything shipshape, beds built, stove made and our food stowed away so as to be protected from ants and rain, we started looking for game, for we had developed a tremendous appetite. This was soon found, as all kinds of game are plentiful in the jungles and the rivers are full of fish. The first day I saw and killed some turkeys, and saw signs of deer, pigs, nikki, canau, tiger, coon and other animals I couldn't identify. I think the wild turkeys are the best I ever had. They have no wild taste, and are as fat as can be. We will have plenty to eat at any rate, as we have plenty of ammunition and salt.

Senor y Senora Campbell, a Jamaican couple working for the Canal, are stationed at Candelaria to record the rise and fall of the river and to report the rainfall. They gave us some cassava root. We fried it and found that it tasted like fried potatoes only better. This root was plentiful; so now we had potatoes also. They told us of a native who lives further up the Pequini. More about him later.

While making a recent aerial reconnaissance of the entire Pequini valley, I had noted several old Spanish gold workings, so I decided to look them up. One was up the Candelaria, so I took that first. There are two forks to the Candelaria, and on both of them and the stream proper I found these workings. Most of them were of the boom type. They ditched the mountain side, lined the last hundred or so feet of the ditch with large stones, let the rain do the rest during the rainy season, and then cleaned up the riffles in the dry season. I would like to have just what washed away from their riffles in this country during one wet season. I followed all branches to their sources, and while finding gold in the gravel there were no outcroppings of the vein I was still looking for. Not being an expert on placer mining or any other method, I believe- though I am not sure - the entire vein of alluvial gravel on both sides of this stream would pay well to work. My estimate is that the gravel will pay from fifty cents to four dollars and fifty cents per yard on the entire stream.

Next on the program was to try our improvised pipe trap arrangement to determine if our pool of gold was in reality a pool lined with gold, or just sand. We had a four-inch pipe with a trap in the bottom and, after carrying the eighty pound "Rube Goldberg" nearly all of one day, we finally reached the pool. However, the swirling action of the water prevented us from being successful as we were unable to sink it to bed rock and all we got was gravel. We didn't even reach the sand I know is there, as I have seen part of it and also some of the gold I hope to get out of there some day soon.

We discovered more Spanish and several more recent gold workings on both the Paluca and the Mauro Rivers. We had crossed to the Boqueron side of the mountains, and while there decided to explore both of these rivers a bit more thoroughly. I didn't find any more of the float or any indication where it

had come from on the Mauro; but I will some day, maybe. I shot at and missed a small cat of the tiger variety.

We returned to camp on the Pequini and decided to try the San Antonio, if we could find it. Commandering a cayuca, we set out up stream. This sounds easy, but try it some day! You use a long pole to propel the cayuca when you are in it and the natives seem to have no trouble, but with me - well, I fell out of the cayuca, fell down in it, and was so angry that I nearly gave up. And that is the easy part. When you have to get out and wade knee or waist deep and push your own cayuca, that is tough. We pushed on, and about noon came to the home of the native whom Senor Campbell had mentioned several days before. He was living in a small open thatched hut on the side of a small stream which empties into the Pequini. He pronounced this river the "San Antonio" but, according to the map I have of the old mine the two Americans had to leave, it is on the wrong side of the Pequini. However, Senor Arvagan, as his name proved to be, said he would show us some nice gravel. He was working a vein of the same alluvial gravel we had found in the entire country and his was about the richest yet. He also showed me a small bottle of mighty pretty gold he had washed out with his batea (wooden gold pan to you). With even a small sluice box he could make good money here, but that is too much work. All he needs is a small amount of money, as he has fruit, vegetables, game and fish at his door for the taking - so why work? This attitude of the few natives I have seen in the jungles is what scares me. May I never get like that!

Senor Arvagan directed us to the San Miguel, as we wanted to visit this river also, and we left him with his flea-bitten dog on the bank of his San Antonio. I wondered what he would think if I were to return with a hydraulic ram and work where he could see so much gravel moved in a day! We finally reached what we took to be the San Miguel and, after finding a small falls, we were sure of it.

A little above the falls we found recent gold workings, and soon were finding traces of the gold workings of the Spaniards. The same pay streak is here and about the same conditions. Everywhere it runs from a few inches to over ten feet of gravel and nearly all contains gold - some richer than others - but enough to warrant being worked mechanically. There are at least two branches to the San Miguel. We were unable to explore them, however, as we had a lot to do and wanted to get back to Candelaria before the week was up. We decided to let them go and to travel a bit further up the Pequini, as no one is ever supposed to have worked beyond there. Going farther is difficult, and I don't wonder no one has been beyond there except a Canal worker charting the river. The first rapids we came to were a series of steps each about a foot high and numbering about thirty in all. It would have been necessary to unload the cayuca and carry everything over, including the cayuca, as the water was very swift and shallow. We decided to return to Candelaria, so we turned back just below the falls.

A short distance down stream we came upon a very small creek and decided to follow it up a bit. Very soon it widened out and became quite a river. Maybe this was the "San Antonio" we were looking for. I decided to go on to the first rapids, and the others returned to the cayuca. A few hours later I returned to find White killing a large Bushmaster which had just attacked him. He killed a partridge, and when he started up a small bank after it the Bushmaster struck at him. White was carrying a bolo in his hand and when he saw the movement he automatically hit at it and, luckily for him, he hit it. Turner said its fangs missed his chest about one inch. The snake was about seven feet long, had fangs over one inch long and poison sacks larger than my thumb. It could have killed a dozen men. Incidentally, Mr. Bushmaster is the most deadly snake in the tropical jungles, and one of the prettiest.

We decided to move on from there, as Bushmasters always travel in pairs and we didn't want to see an angry wife even if we had just killed her consort. Before we got to Candelaria, however, we stopped and explored several small que brazos and canals. Ten years wouldn't be long enough to accomplish all that one would like to in this locality.

After returning to camp, we decided to take a rest and go fishing. We killed a couple of birds for bait and set out down the river. Caught some large Boca Chica (small mouth) and several channel catfish. After a pleasant day, we started for camp and, after crossing the river, discovered we had forgotten a bolo. I returned for it and nearly stepped on a seven-foot tree viper or Palm Adder. Being armed with only a pistol, I hurriedly retreated but couldn't go far. The adder reared up on its tail, so I took a shot and missed. It advanced and I shot again, and this time I hit it,

but not enough. It retreated into a tree and I went on after the bolo and then came back and killed it. Sure was mean looking. To top that off, we made our way cautiously over the trail and White and I both stepped over a log and went on. Turner stepped on the log and and there on the shady side was a coiled Bushmaster about four feet long. As we returned to kill it, he looked us over and still didn't move. I killed him with a bolo, and we returned to camp without further incident.

We began checking up, and discovered we had spent a very quiet Xmas without even knowing it, as we had lost all track of time. On our improvised calendar we began checking days off by events and found we were nearly due to leave and Xmas was over. I decided to make one more trip of two days, and started immediately. I found nothing new, just the same gravel, all containing gold in about the same quantities. I killed a small coral snake and one twenty-minute snake, so called because you never live over twenty minutes after being struck by one. It is a pretty little brown snake about one to two feet long. Also saw a large cat of the tiger family but was too far from camp to shoot it, as I didn't care about carrying the hide so far. After I returned to camp, we began preparing to leave and the next morning our natives showed up. We packed everything and left Candelaris early the next morning.

There were three of us, two natives and all our kit and the natives' bundles and food in a small eighteen-foot cayuca. We were loaded to the gunwales, and the cayuca was wabbly, so we put side boards on by cutting down a very light tree and putting half on each side. This was a big improvement and we sat better. After about an hour, our chief boatman saw a snake on the bank and before we knew it he went to shore after it. The snake saw us and instead of retreating it came after us and, while trying to get out of the way, I fell overboard and Turner fell on top of me. By the time we got back in the boat, the natives had killed it - a "Whip Snake", so they said. It was about eight feet long, black, and had a long slender tail with saw teeth. The natives said that while it was not poisonous, it would slash you with the tail, and that was very bad, as the cuts would fester and kill you within two or three days.

After an uneventful trip, except for the Whip Snake, we reached Madden Lake and put up a sail. For the small cayuca we had, the sail looked rather large to me, but we began making much better time so I said"OK with me". Soon thereafter, we reached the mouth of the Pequini and entered the Chagres. Here the Chagres is about three or four miles wide. A strong breeze came up and the going began to get tough, as we were shipping a lot of water. One of us had to bail constantly and this helped but little as the waves got higher and harder to ride. All at once we went under. The sideboards saved us some of our things, as they made the cayuca bouyant enough to keep within a foot of the surface with our packs in it. We were in the middle of the lake and about two miles from shore. By holding onto our belongings with one hand and the cayuca with the other we finally reached a large log and eventually got our boat bailed out and our kit restowed. Then we picked up our sail and a few other things that were still floating and went on. We were all thoroughly chilled, as we had been in the crocodile-infested waters for about an hour and a half, and was I scared! Within an hour we were at Madden Dam, wringing out our clothes and draining our packs. We were a pretty sight with our wet clothe clothes and carrying wet packs on our backs. Our hair had not been cut for over a month and neither had we shaved. But, we went on to Panama City, satisfied our inner cravings with a good steak and caught the train to Colon. A large tourist boat was in and the train was packed. As was the case the previous time, I rode in the train similarly attired, and hence we were the subject of much whispered conversation and speculation. I got quite a kick out of one woman who asked if we were beachcombers. She beamed all over and said, "I told you so"!, to her companions when I answered in the affirmative.

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ANOTHER ERRAND OF MERCY IN PANAMA

Once again the Air Corps in Panama was called upon to perform an errand of mercy. On January 19th word was received at Albrook Field that Senora Otila Navarrete de Morales, a government nurse in David, R.de P., was in desperate need of an immediate operation. As quickly as possible the usual formalities regarding permission for the flight were gone through and soon two Keystone B-6 Bombers were on their way. Lieuts. R.B. Landry and G.C.Clark piloted the ships. Major C.R. Glenn, Flight Surgeon, also made the trip to extend such aid as he could to the sick woman during the return trip. Within 5½ hours after the flight left Albrook Field, the sick woman was in a hospital in Panama, ready to undergo the operation.

A short while ago Capt.C.A.Ross and Lt.G.L.Mason flew to Costa Rica on a similar mission bringing Col. Campanole to Panama for medical attention.

AIR CORPS OFFICERS ASSIGNED TO TACTICAL SCHOOL

Under Special Orders of the War Department, recently issued, 57 Air Corps officers are relieved from assignment and duty at the stations they are now serving, effective at such time as will enable them to report at the proper time to the Commandant of the Air Corps Tactical School, Maxwell Field, Ala., for duty as students in the 1937-1938 course, commencing next September.

The names and present stations of these officers are given below, as follows:

Office of the Chief of the Air Corps, Washington:
Major Alfred W. Marriner (Captain)
Captain Mervin E. Gross
Captain Stewart W. Towle, Jr.

A.C. Advanced Flying School, Kelly Field, Texas:
Major Robert D. Knapp (Captain)
Major Clifford C. Nutt (Captain)
Captain Clifford P. Bradley
Captain Howard E. Engler
Captain Wilfred H. Hardy
Captain Clyde K. Rich
Captain Edgar T. Selzer
Captain Hobart R. Yeager Capt. C.P.Weyland

Air Corps Training Center, Randolph Field, Texas
Major Charles H. Dowman (Captain)

A.C. Primary Flying School, Randolph Field, Texas:
Major Leonard D. Weddington (Captain)

Randolph Field, Texas
Captain Glenn L. Davasher
Captain Cecil E. Henry
Captain Charles W. Lawrence
Captain Charles T. Myers

Wright Field, Ohio.
Major Franklin O. Carroll (Captain)
Captain Patrick W. Timberlake

Selfridge Field, Mich.
Major Warren A. Maxwell (Captain)
Captain Harlan T. McCormick
Captain Lee Q. Wasser

Langley Field, Va.
Major Jasper K. McDuffie (Captain)
Major John F. Whiteley (Captain)
Captain Ralph E. Fisher
Captain Richard E. Nugent
Captain George F. Schulgen

Detroit, Mich.
Major Omer O. Niergarth, A.C. Procurement Planning Representative.

Mitchel Field, N.Y.
Captain Demas T. Craw
1st Lieut. Paul T. Cullen

Buffalo, New York
Captain Donald R. Goodrich, Air Corps Procurement Planning Representative.

Brooks Field, Texas
Captain Reuben Kyle, Jr.
1st Lieut. Philip D. Coates

Scott Field, Ill.
Captain James C. Shively
Captain Robert W.C. Wimsatt

Chanute Field, Ill.
Captain Benjamin T. Starkey

Fort Benning, Ga.
Captain John W. Warren

Bolling Field, D.C.
1st Lieut. Minton W. Kaye

March Field, Calif.
Major Albert F. Hegenberger (Captain)
1st Lieut. Edward H. Alexander
1st Lieut. Robert L. Schoenlein
1st Lieut. Lloyd H. Watnee

Rockwell Field, Calif.
Major Reuben C. Moffat (Captain)

Hamilton Field, Calif.
Major Carlyle H. Ridenour (Captain)
Captain Delmar H. Dunton

Fort Lewis, Wash.
Captain Everett S. Davis

Englewood, Calif.
Captain Edward M. Robbins, A.C. Representative, Northrop Corporation.

Maxwell Field, Ala.
Captain Harrison G. Crocker
Captain Clarence F. Horton
Captain Sigmund F. Landers
Captain Kenneth C. McGregor
Captain George H. Sparhawk

Philippine Department
1st Lieut. George W. Hanson

Hawaiian Department
1st Lieut. Mills S. Savage
1st Lieut. Raymond L. Winn

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FOREIGN SERVICE TOURS FOR AIR CORPS OFFICERS

The following-named Air Corps officers, on duty at the stations indicated, are under orders to stations beyond the continental limits of the United States:

To Hawaiian Department:
1st Lieuts. Harold R. Maddux and William C. Mills, from Barksdale Field, La.
1st Lieut. John R. Sutherland, from Langley Field, Va.
1st Lieut. Roger V. Williams, March Field.

To Panama Canal Department:
1st Lieuts. George D. Campbell, Jr., Roy H. Lynn and Birrell Walsh, from Hamilton Field, Calif.
1st Lieuts. Gabriel P. Disosway, Paul R. Gowen and Stephen B. Mack, from Barksdale Field, La.

To Philippine Department:
1st Lieut. Morris B. Harbold, from March Field, Calif.

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The following-named Air Corps officers, upon completion of their present tour of duty in the Panama Canal Department, are assigned to station in the United States, as follows:

Lieut. Colonel Richard H. Ballard (Major) and 1st Lieut. William D. Eckert, to Mitchel Field.

1st Lieuts. David H. Baker, Draper F. Henry and Thomas L. Mosley to Langley Field, Va.

1st Lieut. William H. Maverick to March Field, Calif.

1st Lieuts. Marshall Bonner and Charles F. Born are assigned to duty at the Air Corps Training Center, and Wm. B. Offutt to March Field. They are now stationed in the Hawaiian Dept.

The New Class at Randolph Field
(Continued from Page 2)

Compton, Lewis Griffin, Jr.	Lubbock, Texas
McClure, Hamilton	Lubbock, Texas
Bradford, Giles Edward, Jr.	Sweetwater, Texas
Roskelley, Lowell J.	Ogden, Utah
Boyer, George Leroy	Salt Lake City, Utah
Rison, Whitmell Tompkins	Chatham, Va.
Haskett, James Warren	Norfolk, Va.
Tobler, Jesse Alton	Bremerton, Wash.
Flowers, Noel Q.	Mt. Vernon, Wash.
Greene, George Banjamin, Jr.	Seattle, Wash.
Miller, Frank Carl	Seattle, Wash.
Van Ornum, Delbert George	Seattle, Wash.
Cowles, Ned Alexander	Tacoma, Wash.
Gill, David Henry	Vancouver, Wash.
Marcy, Joseph Coe	Yakima, Wash.
Waters, Rufus W.	Eau Claire, Wis.
Konopacki, Hubert J.	Manitowoc, Wis.
Watkins, Harvey Joe	Oconto, Wis.
Lunde, Oswald W.	Kewaunee, Wis.

Air Corps Enlisted Men - Privates

Carolan, Thomas F. — Chicago, Ill.
19th Airship Sqd., Moffett Field, Calif.

Coffey, Robert E. — Greenview, Ill.
6th Air Base Sqd., Barksdale Field, La.

Dick, Richard D. — Chicago, Ill.
4th Composite Group, Nichols Field, P.I.

Payne, Homer C. — College Hill, Ky.
5th Air Base Sqd., Hamilton Field, Calif.

Clark, William Coombs — Sangerville, Me.
14th Air Base Sqd., Bolling Field, D.C.

Young, Robert F. — Frestport, N.Y.
4th Obs. Sqd., Luke Field, Hawaii

Raker, Glen W. — Tulsa, Okla.
46th School Sqd., Randolph Field, Texas

Richardson, Melvin J. — Corsicana, Texas
Hqrs. Sqd. A.C. Tech. School, Chanute Field.

Bailey, J.C., Jr. — Dumont, Texas
46th School Sqd., Randolph Field, Texas

Enlisted Men of other Branches - Privates

Sewall, Albert Russell — Alhambra, Calif.
8th Field Artillery, Schofield Bks., T.H.

Bowen, John C. — Santa Barbara, Calif.
19th Infantry, Schofield Barracks, T.H.

Anneberg, Frank John — Fort Leavenworth, Kans.
Station Hospital, Fort Leavenworth, Kans.

Pinkham, Arthur G. — Dover, N.H.
13th Infantry, Fort Devens, Mass.

Richardson, Wayne F. — Milwaukee, Wis.
D.E.M.L., St. Norbert College,
West De Pere, Wisconsin.

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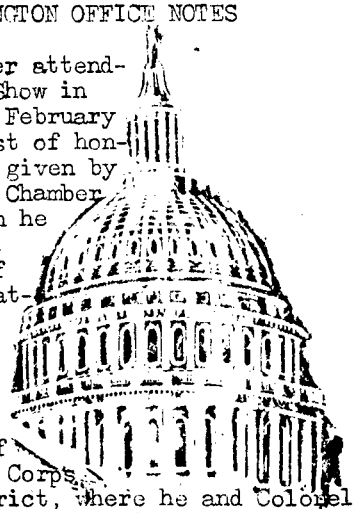
The 33rd Pursuit Squadron sent two PB-2A planes to Oscoda, Mich., for the Cold Weather Equipment Tests. Oil dilution systems were installed at Patterson Field, Fairfield, Ohio, along with other special equipment. Full combat crews included Lieut. W.R. Robertson, Corp. Prast, Staff Sgt. McCraw and Pvt. 1st Class Skrinar - Lieut. M.A. Elkins, Sgt. Pettet, Staff Sgt. Beck and Pvt. Valasek.

The 36th Pursuit Squadron sent one PB-2A to Oscoda, Mich., for the above tests, the crew including 2nd Lieut. Robert A. Gardner, Air Res., pilot; Staff Sgt. Herbert P. Hodges and Pvt. 1st Class Franklin J. Davis, crew chiefs, and Pvt. William O. Meade, Gunner.

WASHINGTON OFFICE NOTES



General Westover attended the Aircraft Show in New York City on February 2nd, and was guest of honor at a luncheon given by the Aeronautical Chamber of Commerce, when he delivered a talk.

On the night of February 2nd he attended a dinner given by the Air Reserve officers of the 2nd Corps Area and the Reserve officers of the New York Air Corps Procurement District, where he and Colonel Charles F.H. Johnson, Specialist Reserve, were honor guests.

General Henry H. Arnold delivered a short talk to the Private Aircraft Owners Association at the Biltmore Hotel, New York City, on February 5th. Colonel Benj. F. Castle, a former Air Corps officer, was his host. Mr. Juan Trippe, President of the Pan-American Airways System, was also present and delivered a speech.

Colonel Alfred H. Hobley returned from New York City on February 4th, being on temporary duty at the plant of the Seversky Aircraft Corp. at Farmingdale, L.I.

Lieut. Colonel Gerald E. Brower departed on February 10th to observe the Winter Flight Tests in the Selfridge Field - Oscoda, Mich., area.

Recent visitors to the Chief's Office were Captains George V. Holloman from Wright Field, Ohio; Randolph P. Williams from Langley Field, Va.; Edwin R. McReynolds, Langley Field; and 1st Lieut. Lloyd H. Watnee from March Field.

Lieut. Colonel Harry H. Young departed February 12th on leave of absence.

Major Morton H. McKinnon returned February 7th from a navigation flight to Dallas, Texas.

Captain Mervin E. Gross departed February 7th for Los Angeles, Calif., to ferry an C-46 plane to the Maryland National Guard.

Major Charles M. Cummings returned to Wright Field on February 9th.

Captain Luther S. Smith returned from New York City on February 6th.

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Captain Samuel C. Skemp, Air Corps, Maxwell Field, Ala., is placed on the retirement list for disability incident to the service, effective February 28, 1937, with the rank of Major from February 1, 1937.

Captain Haynie McCormick, Scott Field, Ill., was transferred to Moffett Field, Calif.

V

OBITUARIES

Major Charles Douglas, Air Corps, on duty as Instructor of the Illinois National Guard Aviation unit, Chicago, Ill., died on January 25th as the result of pulmonary complications.

Born in Green Bay, Wis., February 11, 1893, Major Douglas enlisted in the Army in 1915 and served with the 21st Infantry at Vancouver Barracks, Wash., until January, 1917, when he was transferred to the Aviation Section, Signal Corps, with station at San Diego, Calif. Transferred to Flying Cadet status in September, 1917, he completed ground school training at the School of Military Aeronautics, Berkeley, Calif., and flying training at Rockwell Field, Calif., and was commissioned a 2nd Lieutenant in the Aviation Section, Signal Corps, January 29, 1918.

Ordered to duty overseas, he completed advanced training as a Pursuit pilot at the Third Aviation Instruction Center, aerial gunnery training at Cazaux, France, and training at the School of Bombardment at Clermont, France. On September 1, 1918, he joined the 96th Aero Squadron at Colombey les Belles, and served with this organization at the front until October 27, 1918, when he was transferred to the 28th Aero Squadron. From April 3, 1919, to May 29, 1919, he served with the American Food Administration at Trieste, Italy, and Paris, France.

Returning to the United States in June, 1919, Major Douglas, assigned to duty at Kelly Field, Texas, where he served until February, 1922, when he was detailed to take a course of instruction at the Air Service Communications School at Post Field, Fort Sill, Okla. Graduating from this School in June, 1922, he returned to Kelly Field and was stationed there until June, 1923, when he was placed on duty with Air Service troops at Fort Bliss, Texas, and later was stationed at Fort Sam Houston, Texas. In October, 1928, he completed the Special Observers' Course at the Advanced Flying School at Kelly Field, Texas, and was rated "Airplane Observer."

Transferred to the Philippines, Major Douglas served at Nichols Field from June, 1929, to June, 1931, and was then assigned to March Field, Calif., for duty with the 19th Pursuit Group. Upon graduation in June, 1935, from the Air Corps Tactical School, Maxwell Field, Ala., he was assigned to duty as Instructor, Air Corps, Illinois National Guard.

First Lieut. J.B. Zimmerman, Air Corps, died January 29, 1937, as the result of injuries sustained in an airplane crash the preceding day. The airplane crashed and burned at Front Royal, Va., while he was engaged on a cross-country ferry trip.

Lieut. Zimmerman was born at Sterling, Kans., April 13, 1907. He was appointed to the United States Military Academy and graduated with the class of 1931. Before entering the Academy, he attended Sterling College, Sterling, Kansas, for two years, and Kansas University, Lawrence, Kansas, for one year.

Lieut. Zimmerman graduated from the Air Corps Training Center in 1933, specializing in Pursuit Aviation. He was on duty as Assistant Air Corps Supply Officer at Langley Field, Va., since his arrival from the Philippine Department in January, 1936. He is survived by his wife, a son and a daughter. His parents, Mr. and Mrs. Joseph B. Zimmerman, reside at Sterling, Kansas, where the burial of the deceased took place.

The sincere sympathy of the Air Corps is extended to the bereaved families of the deceased officers.

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WAR DEPARTMENT ORDERS

Changes of Station: To Baltimore, Md.: Lt. Col Ernest Clark (Major) from Selfridge Field to duty at Headquarters, 3rd Corps Area.

To Langley Field, Va.: Colonel H.C. Kress Muhlenberg from Hqrs. 3rd Corps Area.

To Hawaiian Department: 1st Lieut. James S. Olive, from Mitchel Field, N.Y., and 2nd Lieut. Dolf E. Muehleisen from March Field, Calif.

To the Philippines: 2nd Lieut. Paul E. Todd from March Field, Calif.

To Selfridge Field, Mich.: Major Wm. D. Wheeler from Hawaiian Department.

To Fort Leavenworth, Kansas: Major Theodore J. Koenig, Mitchel Field, designated as student for the 1937-1938 course at the Command and General Staff School.

Transfers: 2nd Lieut. James W. Totten, Air Corps, to the Field Artillery, January 25, 1937, and assignment to 5th Field Artillery at Madison Barracks, N.Y.

Relieved from Air Corps: 1st Lieut. William J. Hanlon, Cavalry, from assignment and duty at the Air Corps Training Center, and to duty with the 1st Cavalry Division at Fort Clark, Texas.

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The following officers of the Air Reserve were assigned to active duty for a period of three years at the stations indicated:

2nd Lieut. Ladson Green Eskridge, Jr., of Newberry, S.C., to February 10, 1940, and 2nd Lieut. Edward August LePenske, of Tacoma, Wash., to January 31, 1940, both to Langley Field, Va.

2nd Lieuts. Arlen Everett McCarty, Hood River, Oregon; George Irving Rhoades, Tulsa, Okla., and Charles Milton Fischer, Kansas City, Mo., to February 14, 1940. Lieuts. McCarty and Fischer were assigned to March Field, Calif., and Lieut. Rhoades to Mitchel Field, N.Y.

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Special Orders of the War Department, recently issued, assigned the following-named Air Corps officers to duty as students in the 1937-1938 course at the Air Corps Engineering School, Wright Field, Ohio:

Captain Frank G. Irvin, 1st Lieuts. Merrill D. Burnside and Charles L. Munroe, Jr., from Wright Field, Ohio.

1st Lieut. Mark E. Bradley, Jr., Scott Field.

1st Lieut. Daniel F. Callahan, Jr., Brooks Field, Texas. 1st Lieut. Clark N. Piper, Barksdale Field, La., 1st Lt. Samuel R. Brentnall, A.C. Representative, Stearman Aircraft Factory, Wichita, Kansas.

Langley Field, Va., February 2nd.

2nd Bombardment Group: The Group has been doing little flying in the past two weeks, but everyone has been using the time to catch up on ground instruction and barracks fatigue. Instruction for officers consists of elementary navigation training and lectures enlarging on the information contained in the Pilot's Information File. First Lieut. E.L. Tucker has organized squadron schools for radio operators and is getting excellent results. Much interest is being shown in these schools by everyone.

In the barracks the men are running a "previi" on the spring house-cleaning. Bunks are being painted and rearranged, and a general overhaul of barracks is in progress.

This Group has one plane already in the Flood Area, and we are all standing by to go to the aid of flood sufferers on a minute's notice. An OA-4B, complete with crew, is based at Port Columbus ready to go anywhere on call on a minute's notice. The crew consists of 1st Lieut. R.E. Koon, A.C.; 1st Lieut. T.C. Odom, A.C.; Staff Sgt. John E. Morris, 21st Reconnaissance Squadron, crew chief, and Pfc. William A.Lentz, 21st Reconnaissance Squadron, radio operator.

Orders were just received for Major J.K. McDuffie and Captain H.E. Nugent to attend the Air Corps Tactical School this fall. We all hate to lose them, but congratulate them on this assignment.

First Lieut. R.F. Travis was ordered to duty in Panama. This Group, particularly the 49th Squadron, will surely miss "Bob."

33rd Pursuit Squadron: Lt. Col. and Mrs. H.S. Rush announced the engagement of their daughter, Miss Sheridan Wood Rush, to Lieut. M.A. Elkins, Air Res., before a group of friends at the home of Col. Rush. Miss Rush is a graduate of Hampton High School and is a Junior at Virginia Intermont College. Lieut. Elkins has been with the 33rd Pursuit Squadron since graduation from Kelly Field, February 1935. The wedding is to be in May.

35th Pursuit Squadron: With the seagulls showing a strong tendency toward an early evacuation of their happy feeding ground in favor of their normal habitat, there is a growing hope that the flying field will soon again be a scene of buzzing activity. The 35th Pursuiters have been standing by with planes finely tuned and ready.

Flash! The ground hog saw his shadow this morning. Ho hum, six weeks more of hangar stick time.

Lieut. Jeffus packed his red flannels and shoved off to the Cold Weather Equipment Test and a few weeks hibernation in the frozen North.

First Lieut. Bodle, recently assigned to the organization, blossomed out a few days ago in a new set of bars. Congratulations, Captain!

Hq. and Hq. Sqdn. 8th Pursuit Group: Quantities of rain and fog greatly curtailed the flying activities of the squadron during the past month. However, paper work, which constitutes a large portion of the duties of this organization, went merrily on, as usual.

About sixteen members of the organization are taking advantage of the evening classes in mechanics and allied subjects, conducted by Base Headquarters.

Hawaiian Air Depot, January 20th.

Major J.C. Van Ingen is reporting for duty as Chief of the new Signal Corps Radio Section which is now being established at this Depot. This unit will be installed in the old Instrument Repair Room. Construction of a new Instrument Repair Building is progressing rapidly and is expected to be completed within the next thirty days.

Lieut. Franklin S. Henley, Assistant Depot Supply Officer, will depart on the USAT CHATEAU THIERRY, and will report for duty at Chanute Field.

Lieut. Donald W. Titus, who arrived on the Chateau Thierry, was assigned to this Depot as Assistant Engineering Officer.

Mr. Earl M. Baker, Principal Storekeeper in the Supply Department, returned from the mainland after an extended vacation. Mr. Baker visited several of the Depots and gained much valuable information while there. While on the Coast he was married and was accompanied by Mrs. Baker on his return trip.

Three additional employees arrived on the January 14th Transport - Mr. Harold R.Beacom, Junior Aircraft Instrument Mechanic; and Messrs. Eddie R. Mustain and Russell M.Webster, Aircraft Engine Mechanics. The Depot extends an Aloha to these new employees.

Kelly Field, Texas, February 5, 1937.

Lieut. O.F. Smith arrived at Kelly Field on January 28th to lecture on airplane engine advances before the Advanced Flying School. He returned to Wright Field the following afternoon. Bad weather delayed him at Shreveport.

Lieut. Nelson P. Jacksom, a Kelly Field graduate in 1934, reported back on January 22nd as instructor to the Pursuit Group. He had been stationed in the Panama Canal Department.

First Lieut. Roger J. Browne ferried an A-3 Attack plane from Kelly Field to Scott Field, Ill., and brought back a B-4 Bomber. First Lieut. P.F.V. Vance ferried a BT basic trainer to Scott Field and returned with Lieut.Browne.

First Lieut. Bruce Von G. Scott has been acting commander of the 22nd Photo Section while 1st Lieut. Charles F. Densford, the commander, has been ill in quarters.

Captain Howard E. Engler, accompanied by Mrs. Engler, departed for Denver, Colo., on a 15-day leave of absence.

Captain Otto P. Weyland, Chief of the Observation Section, is deep in reference files these days. He has been assigned the heavy task of rewriting the Observation text that covers many of the ground school subjects taught at the Air Corps Advanced Flying School.

Colonel Ralph Royce was a visitor at Kelly Field while ferrying a P-26 from the West Coast to Selfridge Field.

Captain W.H. Hardy returned from Washington, where he was a member of a Board which convened in the Office of the Chief of the Air Corps.

San Antonio Air Depot, Duncan Field, Texas.

Among Air Corps officers recently visiting the Depot by air were Col. Ralph Royce, of Selfridge Field, to ferry a P-26A back to that station; Major T.L. Gilbert, on duty with the Organized Reserves, Oklahoma City, Okla., to confer on supply matters, returning with a PT-3; Major H.H. Holland, Captain D.D. Fisher and Lieut. Wm. C. Bentley, Jr., of Langley Field, enroute ferrying three B-10B planes to the Rockwell Air Depot, Coronado, Calif.; Lieuts. F.S. Stocks and O.S. Picher, of Hamilton Field, enroute, piloting a C-33 with 12 passengers, from Chanute Field, Ill., to their home station.

The monthly Supply Control Area supply and engineering conference and luncheon at this Depot was held January 26th, about 20 officers from various stations and the Depot being present. Out-of-town officers attending were Major F.D. Lynch, commanding Post Field, Fort Sill, Okla.; Major L.S. Webster, Supply Officer of Barksdale Field, La.; Captain H.W. Wellman, Jr., 120th Observation Squadron, Colorado National Guard; Lieut. Eugene Cunningham, from Lowry Field, Denver, Colo., and Lieut. Wm. T. Hefley, of the Air Corps Materiel Division, Wright Field, then on a navigation flight to Brooks and Kelly Fields and this Depot, conferring on engine maintenance matters.

The recent nation-wide appeal of the American Red Cross in behalf of the Middle West Flood Relief found at this station, as always, a hearty and generous response on the part of the entire personnel, who at this writing subscribed a total of over $675. to the quota of Bexar County Chapter of the Red Cross in San Antonio.

Lieut. Colonel Morris Berman, Executive Officer of the Depot, returned January 28th from a month's leave, visiting in Mineral Wells, Texas.

Tech. Sgt. P.B. Jackson and Staff Sgt. F.O. Tyler, pilots of the 3rd Transport Squadron, departed February 4th, ferrying a BT-2B plane to the Rockwell Air Depot, Coronado, Calif. They are scheduled to ferry two P-12D's to Kelly Field.

Mr. B.E. Edwards, Principal Storekeeper in the Depot Supply Department, left here January 29th by air for the Materiel Division, Wright Field, and the Fairfield Air Depot, Ohio, on temporary duty for about ten days to study methods used in storage of active and reserve stock.

Mr. E.H. Hanley, Junior Administrative Assistant at the Hawaiian Air Depot, Luke Field, T.H., and formerly on duty at this Depot, reported January 29th from a leave of absence while in the States for temporary duty for about a month at this Depot for the purpose of studying administrative, civil service, and other personnel procedures.

Major E.D. Perrin, 3rd Transport Squadron Commander and Post Operations Officer of the Depot, with Staff Sgt. P.S. Blair of that squadron as co-pilot and Corp. F.M. Anthony, mechanic, flew the Depot's C-33 Transport to the Rockwell Air Depot, Coronado, Calif., and return, January 25-27, to bring back Major F.O. Hunter and Lieut. H.R. Maddux, returning to Barksdale Field, La., from a ferrying mission to Rockwell Field, also to bring back Corporal R.L. Cole, Mechanic, Staff Sgt. T.K. Dorsett and Pvt. E.T. Hausafus, pilots, of the 3rd Transport Squadron, who ferried the other C-33 which was formerly assigned to this Depot and which was transferred to the Rockwell Depot.

Clark Field, Pampanga, P.I., January 7th.

Personnel changes have been few lately. Lieut. Blair, recently graduated from the Air Corps Training Center, came over on the November, 1936, boat. Lieuts. Morgan and Bowman left on January 9th for a month's trip through Indo-China, Siam and the Dutch East Indies. On the March transport we will lose our present Commanding Officer, Major C.W. Ford, together with Lieuts. Bowman and Morgan. With Lieut. Wurtsmith returning to the States in May, we will experience almost a fifty percent turnover within a three months' period.

Now that the Asiatic Fleet is back in Philippine waters for the winter, the squadron baseball and bowling teams and the sailors are staging some very good games.

Scott Field, Belleville, Ill., February 11th.

Captain Haynie McCormick, ordered to Moffett Field, Calif., left February 15th on 30 days' leave.

Second Lieuts. Edward G. Kiehle and Noble O. Sprunger, Air Reserve, were relieved from active duty with the Air Corps on February 10th. They have been employed as pilots by the Pan-American Air Lines.

First Lieut. William J. Bell, reported from Selfridge Field for duty with the 15th Observation Squadron on February 7th.

The importance of Scott Field as a refueling station for Army aircraft making cross-country or transcontinental flights is well known. Scott Field is centrally located and is on all east-west and north-south Army airways. The number of visiting airplanes for 1936 was 1685 and included all types among which were the autogiro and the amphibian, as well as many Navy, Marine Corps and National Guard planes.

A Boy Scout troop with eleven charter members was recently organized by 1st Lieut. James C. Bean (Chaplain). Private Richard D. Fey, 21st Airship Group Headquarters, was chosen Scoutmaster.

Bowling: Technical Sergeant Robert S. Wills, Finance Department, a member of the Hermanns bowling team, leader in the present St. Louis Classic League and former world's five-man match game champions, helped his team break three bowling records on January 27th, viz:

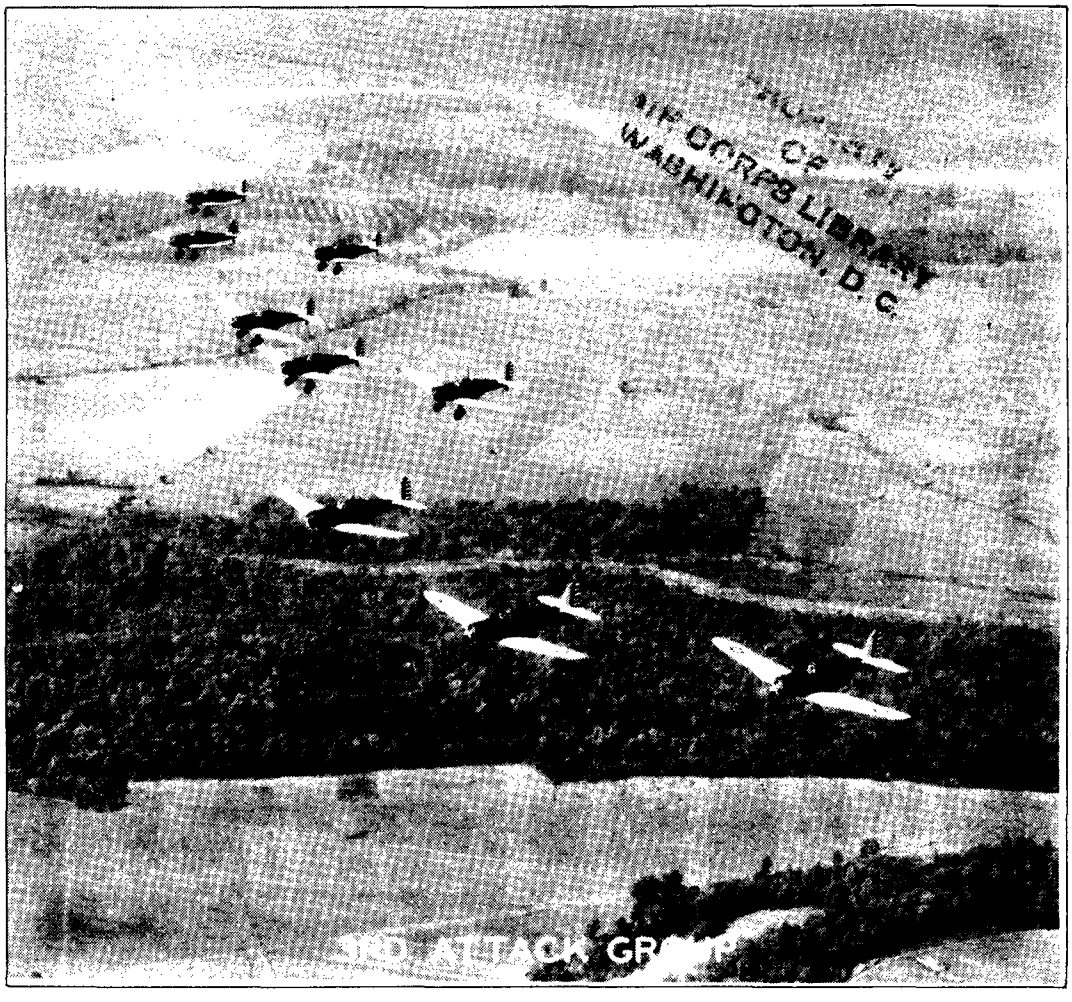
1. The first time on record that any team shot the high score of 1325 for one game. The former high score of 1294 was made by the Collinsville Bricks of Cleveland, Ohio.

2. The first time the unbelievable three-game score has been 3797. The former record, held by the Hamms of St. Paul, Minn., was 3713.

3. The first time on record that any team has made over 1200 in three consecutive games - the three scores being 1261, 1211 and 1325.

The high man of this record-breaking team made 792 and the "dog" made 709. Sgt. Willis, a new member of the team, was second highest with a score of 771. He has a brilliant record in the field of athletics, and his present bowling average is 215.

AIR CORPS NEWS LETTER



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

VOL. XX MARCH 1, 1937 NO. 5

VOL. XX AIR CORPS NEWS LETTER NO. 5.

Information Division, Air Corps — March 1, 1937 — Munitions Building, Washington, D.C.

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

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THE ARMY AIR CORPS FOR 1936 - A REVIEW

Ed. Note: The review of Air Corps activities and various aeronautical events during the calendar year 1936, as hereinafter given, is not intended as a full and complete chronology thereof. The necessary time involved to conduct the required amount of research work in order to compile a complete chronology has not been available. Furthermore, space is lacking for the publication of a more complete report. It is believed, however, that the chronology of events given hereinafter will give the reader a fair idea of the various activities in which the Air Corps was engaged during the past year.

THE GENERAL HEADQUARTERS AIR FORCE

Faster airplanes, an improved plan of organization and a greatly heightened morale for all members, were objectives achieved during the calendar year 1936 by the General Headquarters Air Force.

Air power of the United States was increased in spite of the fact that over-age airplanes were retired almost as fast as new airplanes were added to the Air Force. Higher speeds, bigger loads, and enlarged cruising radii have definitely strengthened the air defense of the continent.

In reviewing the accomplishments of the GHQ Air Force for the past year, Major General Frank M. Andrews, its Commanding General, stated recently:

"We think we are headed on the right path. It is believed that in 1936 we made substantial progress on the road to a smooth working, efficient air force. The addition of the new types to our complement of planes has had an important effect on the training and especially on the morale of the pilots and mechanics.

For example, the Seventeenth Attack Group of March Field was equipped solely with obsolete Pursuit planes when the GHQ Air Force was organized on March 1, 1935. During 1936, this old equipment was replaced by new Northrop Attack airplanes (A-17) direct from the Inglewood factory."

The increase in the multi-place equipment of the GHQ Air Force has given the enlisted men in the affected squadrons more opportunities to accompany their officers on flying missions as gunners, crew chiefs, and radio operators.

The acquisition of the 18 new Douglas C-33 transports during 1936 gives the air bases and the air depots the opportunity to expedite the delivery of engines and the quick transport of mechanics and other personnel to airdromes near the theatres of operations during maneuvers.

The staff of the GHQ Air Force wishes to point out, however, that the increased speeds of the new planes have not increased the mobility of the Army air unit. Without additional bases in certain strategic areas, the mobility of the Air Force will remain substantially the same as on its founding day, March 1, 1935.

Substantial but unsensational progress was made in other branches of GHQ Air Force activity. Supplies were moved easier; Ordnance organization was improved and increased, and the Chemical Warfare Service was heard from. In a prepared statement, Lieut. Colonel Edward Montgomery, Chemical Warfare Service Officer at GHQ Air Force Headquarters, said:

"In May, 1936, a number of GHQ Air Force officers were graduated from the Chemical Warfare School. The return of these officers to their regular stations and their appointment as base and unit chemical officers, marked the commencement of comprehensive chemical warfare training throughout the Air Force. By fall this training was being carried out in a standardized way at all bases by means of schools for officers and noncommissioned officers, unit training and recruit instruction."

In connection with the above statement, Air Corps News Letter readers will remember a 1936 cover in which clerks were depicted working at their desks with gas masks being worn. Hangar crews also worked for brief periods so attired.

Reorganization of the GHQ Air Force occurred on September 1, 1936. As the average reader knows, the Station Complements disappeared and in their stead were created the existing Air Base Squadrons. As the year drew to a close, the creaks and groans incidental to the working of all new machinery largely disappeared and the morale of the officers and enlisted men seemed to be on the upturn as a result of the new set-up.

In the following paragraphs, notable events of the last calendar year will be briefly described:

Cold Weather Test Flights in New England Area.

Several units of the Air Force conducted cold weather tests of winter equipment in the New England area from February 1st to the 15th, under the supervision of General Andrews. Designed to ascertain the effectiveness of Air Corps personnel and equipment under severe weather conditions, these tests provided a

great deal of data for the Air Force headquarters. Particular note was taken of the tremendous effect of the cold weather on the appetites of the personnel of Barksdale Field, La.

The Barksdale Field report states that their contingent had all airplanes running all day. Much favorable comment was heard on all sides about the splendid reception given to both commissioned and enlisted personnel by the New England populace. As the creation of favorable public sentiment is considered one of any maneuver's objectives, this item must be added to the plus score of the fourteen days.

GHQ Air Force Unit Aids Flood Sufferers

Almost from the beginning of Army air history Army airplanes have been dashing to the aid of flood sufferers. So it was in the spring of 1936 when the Second Bombardment Group, acting on verbal orders of the Second Wing Commander, Brigadier General Henry C. Pratt, dropped 8,000 pounds of food and medical supplies to communities in Pennsylvania. Major Robert E. Cronau was in command of the 30 airplanes, 45 officers and nearly 100 enlisted men who participated in the mercy work.

Martin Bombers Ferried to Panama

Pilots and mechanics of the 2nd Bombardment Group of Langley Field last spring had the pleasant and worthwhile detail of ferrying nine new Martin Bombers from the Martin factory to Panama. The flight was led by Colonel Charles B. Oldfield and flew via Brownsville, Texas; Mexico, and several Central American countries. The Bombers proved a boon to the defenders of the water artery.

Other Important Events

Other events of importance include the heroic deeds of Sergeant Norris and Corporal Musser; the participation of GHQ Air Force units in the Second Army Maneuvers during the summer; the Joint Army-Navy exercises off the coasts of Virginia and the State of Washington in the fall; the Bakersfield, Calif., exercises of the First Wing; and the award of the Colombian Trophy for safety in flying to the Third Attack Group by General Andrews at Barksdale Field.

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C H R O N O L O G Y

Personnel - Appointments, Changes, etc.

Colonel Gerald C. Brant, Commander of the 3rd Attack Group, Barksdale Field, La., was appointed to the temporary rank of Brigadier General from January 9, 1936.

Forty-eight Flying Cadets of the Air Corps, who graduated from the Advanced Flying School, Kelly Field, Texas, in February, 1935, and who completed their additional year of training with Air Corps tactical units on February 29, 1936, were commissioned second lieutenants in the Air Reserve and assigned to extended active duty, March 1, 1936, at various Air Corps stations.

The War Department, in response to the President's approval of the Bill (H.R. 11920) to increase the efficiency of the Air Corps, made a revision of the then unsatisfactory method of temporary promotion in the Air Corps, experience having shown that the prior method of selecting officers for temporary promotion was productive of many evils, since the selections were made from the standpoint of expediency rather than seniority. Under the new Act, which repealed all previous temporary promotions, the shortage in the Air Corps of officers above the rank of Captain was made up by the temporary promotion of officers taken from the top of the relative rank list. This resulted in the temporary promotion of 12 Lieut. Colonels to Colonel, 36 Majors to Lieut. Colonel and 204 Captains to Major, effective June 16, 1936.

On August 26th, in accordance with the provisions of the Act of Congress cited above, 148 Air Corps officers received temporary promotions, viz: 20 Lieut. Colonels to Colonel, 29 Majors to Lieut. Colonel, and 99 Captains to Major.

Under the Bill, H.R. 11920, the President, on the recommendation of the Secretary of War, nominated the following Air Corps officers for temporary promotion to the rank of general officer, viz: Colonel Frank M. Andrews, Commanding the GHQ Air Force, to Major General; Cols. Henry C. Pratt, Gerald C. Brant, Barton K. Yount, Lieut. Colonels Delos C. Emmons and George H. Brett to Brigadier General.

Fifty-Six Flying Cadets, who graduated from the Advanced Flying School, Kelly Field, Texas, June 22, 1935, and who on that date completed a year of active duty with Air Corps tactical units under their cadet status, were commissioned second lieutenants in the Air Reserve, and assigned to further active duty under their status as Reserve officers. Similarly, 28 Flying Cadets, who completed their year of active duty with tactical units on October 14th, were commissioned second lieutenants in the Air Reserve and placed on further active duty. Three of these 28 Cadets passed the examination for appointment as commissioned officers in the Air Corps, Regular Army.

A total of 33 officers graduated on June 30th from the Air Corps Technical School, Chanute Field, Ill., 3 of them pursuing the aerial photographic course; 12, Communications; and 18, Engineering.

Colonel Arnold N. Krogstad assumed command of the Air Corps Advanced Flying School, Kelly Field, Texas, on July 2nd, relieving Colonel Jacob E. Fickel, who was assigned as Air Officer of the 9th Corps Area.

Colonel Harrison H.C. Richards, Air Corps, was assigned as Chief of the Information Division, Office of the Chief of the Air Corps, July 15, 1936, vice Colonel John D. Reardan, assigned as Air Corps Procurement Planning Representative, New York City.

Colonel Henry B. Clagett assumed command of Selfridge Field, Mich., on August 27, 1936.

The commissioned ranks of the Air Corps were increased on October 1, 1936, to the extent of 50 new officers, all graduates of the Air Corps Training Center, who were appointed under the Act of Congress, approved August 30, 1935.

Colonel Davenport Johnson assumed command of Hamilton Field, Calif., on November 19th, suc-

ceeding Colonel Clarence L. Tinker, transferred to Washington, D.C., for duty with the National Guard Bureau.

PURCHASE OF NEW AIRPLANES

The Secretary of War announced that 506 airplanes had been delivered to the Army Air Corps by contractors during the calendar year 1936. This is the largest number of airplanes which have ever been delivered during any year since the adoption of modern all-metal construction.

During the calendar year 1936, announcements were made by the War Department of the approval of the award of the following contracts for new airplanes for the Army Air Corps:

June 16: To the Seversky Aircraft Corporation of Farmingdale, L.I., New York, for 77 single-seater Pursuit airplanes and of spare parts equivalent to 8 airplanes, at a total cost of $1,636,250.

July 23: To the Curtiss Aeroplane and Motor Company, Buffalo, N.Y., for 13 new Attack planes (YA-18) bi-motored, at a total cost of $1,259,235. This plane, a development over the past two years by the Curtiss Company in cooperation with Air Corps engineers, combined very high performance with long range and improved safety characteristics. It is believed to be the only two-engine Attack plane in the world.

July 28: To the Stearman Aircraft Co., Wichita, Kansas, for 50 Primary Training planes, at a total cost of $329,659.

August 8: To the Curtiss Aeroplane and Motor Company for three high performance single-seater Pursuit planes of a new type, to be known as the YIP-36.

October 26: To North American Aviation, Inc., of Inglewood, Calif., for 117 Basic Training planes (single-engine biplace low-wing monoplane), spare parts, etc., at a total cost of $1,432,600.

November 18: To North American Aviation, Inc., for 109 O-47A Corps and Army Observation airplanes, and spare parts equivalent to 11 additional planes, at a total cost of $3,429,600.

December 4: To the Stearman Aircraft Company, for 28 Primary Training airplanes (PT-13A) with spare parts, at a total cost of $146,720.25. This biplane, with a two-place tandem arrangement, is powered with a 7-cylinder air-cooled Lycoming engine of 125 horsepower.

Engines

March 11: To the Wright Aeronautical Corporation, Paterson, N.J., for 512 new aircraft engines, of which 432, known as the Wright "Cyclone" R-1820-G, 9-cylinder, air-cooled, the most powerful single-row radial aircraft engine in the world, were intended for installation in new Bombardment planes, while the remaining 80 engines, 9-cylinder Wright "Whirlwind" type, were intended for installation in new Basic Training monoplanes. Amount of contract, $3,850,000.

March 31: To the Pratt & Whitney Aircraft Corporation for 200 new R-1535-13 air-cooled, two-row radial type engines, at a total cost of $1,877,030.

August 3: To the Wright Aeronautical Corporation for 150 Wright "Cyclone" engines, rated at 1,000 horsepower, at a total cost of $1,327,190.

New Airplanes

H.R. 11140, an Act to increase the effectiveness and efficiency of the Air Corps, approved June 24, 1936, amended the Air Corps Act of July 2, 1926, by increasing the authorization therein of 1,800 serviceable airplanes to 2,320 airplanes.

Illustrating the greatly increased cruising range now possible with the new Northrop Attack airplane, Lieut. Charles B. Overacker, 17th Attack Group, made a non-stop round trip from March to Hamilton Field, involving a total distance of 814 miles, in 5 hourd and 35 minutes.

DECORATIONS AND AWARDS

Decorations and awards made during the calendar year 1936 to Air Corps personnel for heroic conduct or distinguished service in connection with flying are enumerated below, as follows:

Distinguished Flying Cross:

Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, were awarded the Oak Leaf Cluster to the Distinguished Flying Cross for their participation in the National Geographic - Army Air Corps Stratosphere Flight, which started from the vicinity of Rapid City, South Dakota, November 11, 1935, during the course of which the balloon ascended to 72,395 feet, the greatest height ever attained by man. Captain Stevens was the commander and scientific observer on this flight, and Captain Anderson the pilot and assistant scientific observer. Kelly Field, Texas, on March 7, 1936, was the scene of the presentation of this decoration to Capt. Anderson by Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center, while on May 12, 1936, at Wright Field, Dayton, Ohio, Major General William E. Cole, Commanding General of the 5th Corps Area, made the presentation of the decoration to Captain Stevens.

The Distinguished Flying Cross was posthumously awarded to Major Hez McClellan, Air Corps, for extraordinary achievement as commanding officer and pilot on a cross-country flight from Washington, D.C., to Nome, Point Barrow, and other Alaskan points during the summer of 1935.

The War Department announced the award of the Distinguished Flying Cross to Captains Frank G. Irvin and John S. Griffith, Air Corps, for heroism while participating in an aerial flight from Wright Field, Ohio, to Indianapolis, Ind., on July 22, 1936. While making a carbon monoxide test flight of a new airplane at an altitude of 2,000 feet, the engine burst into flames. The two officers, without thought of themselves, directed the crew of civilian observers to jump with their parachutes, and then, by using fire extinguishers and switching off gas valves, succeeded in extinguishing the fire, thereby preventing not only possible loss of life but destruction to government property as well.

Announcement was made by the War Department of the award of the Distinguished Flying Cross to Brigadier General Henry H. Arnold, Air Corps, for extraordinary achievement while participating in an aerial flight as pilot and commanding officer of a squadron of ten Bombardment airplanes from Washington, D.C., to Fairbanks,

Alaska, and return, from July 19, 1934, to August 20, 1934.

Four members of the Air Corps were awarded the Distinguished Flying Cross for participating in an errand of mercy which was instrumental in saving the lives of seven men who were stranded on an ice floe in Cape Cod Bay. During the course of the Winter Test Maneuvers in the New England States, Major Barney M. Giles, of Langley Field, accompanied by 2nd Lieut. James H. Patrick, Air Reserve; Staff Sergeant Donald E. Hamilton and Corporal Frank B. Connor, departed shortly after midnight, February 10th, from Concord, N.H., to locate seven CCC youths, marooned on drifting ice off their Camp at Brewster, Mass. Major Giles located a tiny dot on the ice which he was soon able to identify as the boys, and then proceeded to circle the floe and radio its position to shore parties and Coast Guardsmen. Airplanes promptly arrived over the scene and dropped food and blankets to the imperiled youths.

The Soldier's Medal

The Soldier's Medal was presented on April 27, 1936, to Corporal Clyde E. Gilmore, 44th Observation Squadron, Albrook Field, Canal Zone, by Major General Lytle Brown, Department Commander, for heroism in saving the life of a fellow soldier, whose clothing caught fire from a sudden gasoline blaze in a hangar. Overtaking this soldier, who was running from the scene of the fire, Corporal Gilmore succeeded in throwing him to the ground and removing his blazing clothing.

On May 12, 1936, at Wright Field, Dayton, Ohio, the Soldier's Medal was presented by Major General William E. Cole, Commanding General of the 5th Corps Area, to Lieut. L.F. Harman, Air Corps, for valiant rescue work performed at the risk of his own life upon the occasion of the crash of the Boeing Bomber at Wright Field during a test flight in October, 1935, and which resulted in the death of the pilot, Major Ployer P. Hill, and Mr. Leslie Tower, test pilot of the Boeing Company.

The War Department announced the award of the Soldier's Medal to Staff Sergeant Willie D. Norris and Sergeant Wayne M. Musser, Air Corps, for heroism displayed at Langley Field, Va., August 31, 1936. During the installation of time fuzes on six large experimental flares hanging from the bomb bay racks of an airplane and withdrawing the safetying pins from them a noise, diagnosed as the time fuze functioning of one of the flares, was heard. Sergeant Norris held a flashlight while Sergeant Musser unlatched the ticking flare and ran with it in his arms towards the flying field. After reaching a point about 20 feet from the bomb bay, the flare exploded, shooting the burning flare back toward the airplane under the left wing near the fuselage, where the intense heat ignited the wing. In his attempt to escape from the airplane, the pilot sprained his ankle and Sergeant Musser, seeing his plight, assisted in carrying him to a place of safety. The heroic and timely actions of these two noncommissioned officers prevented the possible loss of human life and undoubtedly great destruction to valuable government property.

The Mackay Trophy

June 23, 1936, marked the 23rd annual award of the Mackay Trophy, which is presented to Air Corps officers for each year's most outstanding flight achievement. The recipients of this Trophy for 1935 were Major Albert W. Stevens and Captain Orvil A. Anderson, Air Corps, for their stratosphere flight on November 11, 1935.

The Cheney Award

Announcement was made on January 19, 1936, of the selection of 1st Lieut. Robert K. Giovannoli, Air Corps, for the Cheney Award for 1935, for an act of heroism in connection with the rescue of Major Ployer P. Hill, Air Corps, and Mr. Leslie Tower, civilian test pilot, from a burning experimental bombing plane which crashed during a test flight at Wright Field, Ohio, in October, 1935. Both Major Hill and Mr. Tower later succumbed to their injuries. Fate was also unkind to the hero in this tragedy when, several months later, Lieut. Giovannoli lost his life in an airplane accident.

The Frank Luke Trophy

The American Legion of Arizona, on September 3rd, presented the Frank Luke, Jr., Memorial Trophy to the 79th Pursuit Squadron, GHQ Air Force, for making the highest aggregate score in annual gunnery record firing. Three six-plane flights of the 79th Squadron, Barksdale Field, La., were flown to Phoenix, Arizona, on September 2nd, and on the following day a demonstration was staged of Pursuit maneuvers for 30 minutes over Phoenix. Flowers were dropped from one plane on the Luke Memorial Statue in front of the State Capitol. The formal presentation of the Luke Trophy was made to the Squadron by Mr. T.T. Brooke, Department Commander of the American Legion, assisted by the Governor of Arizona.

The Colombian Trophy

The Third Attack Group, Barksdale Field, La., won the Colombian Trophy for greater safety in flying than any other similar organization in the Army Air Corps. This Trophy, a gift to the Air Corps by the Republic of Colombia, was presented to the Group with appropriate ceremonies on December 9th by Major General Frank M. Andrews, Commanding General of the GHQ Air Force, who flew to Barksdale Field especially for that purpose.

Commendation

For landing a Martin Bomber with three passengers in a small, unprepared space near Gila Bend, Arizona, with exceptional courage, good judgment and piloting skill, on June 10, 1936, 2nd Lieut. Arno H. Luehman, 32nd Bombardment Squadron, March Field, Calif., was highly commended by the Chief of the Air Corps, the Commanding General of the GHQ Air Force, and other high ranking Air Corps officers.

THE WINTER TEST MANEUVERS

Officers and enlisted men from Barksdale, Langley, Mitchel and Selfridge Fields, organized as a provisional group, under the command of Lieut. Colonel Adlai H. Gilkeson, Commanding Officer of the 8th Pursuit Group, Langley Field, Va., were engaged in conducting cold weather

tests of clothing and equipment in the New England area.

The Group was composed of the 8th Pursuit Group Hqrs., Langley Field, with 6 officers, 11 enlisted men and 6 planes; a Bombardment Squadron from the 2nd Bombardment Group, Langley Field, Va., with 20 officers, 20 enlisted men and 10 Martin Bombers; an Attack Squadron from Barksdale Field, La., with 20 officers, 20 enlisted men and 20 Curtiss Attack planes; one Pursuit Squadron from the 20th Pursuit Group, Barksdale Field, La., with 20 officers and 20 Boeing Pursuit planes, and one service detachment each from Selfridge, Mitchel and Langley Fields, consisting of 90 enlisted men, 6 officers and 6 Cargo planes.

The localities selected as bases for the exercises were Mitchel Field, N.Y.; Burlington, Vt., and Concord, N.H. Although the tactical situations were made secondary to the testing of clothing and equipment, the report showed a total of 437 tactical missions accomplished in 1100 hours of flying over approximately 150,000 miles. Adding 1500 hours of non-tactical flying (including transport movements, movement of units getting into position for tactical operations and staff movements), gives a total of 2600 hours flown over approximately 300,000 miles. In the transport flights, numbering 100, no accidents of any description were encountered, despite landings on and take-offs from ice and snow-covered runways by pilots unfamiliar with cold weather operations. In the 2600 hours of flying, there were three accidents, all minor in character.

The airplanes were in the open without the facilities and protection of heated hangars. Among some 130 items of clothing and equipment tested were skis for Pursuit and Attack planes, special oil for machine guns, tents with sleeping bags and pneumatic mattresses, flying clothing, engine heaters, covers and fire pots of varying designs, heaters for cabins of transport planes, improved priming systems, engine starting accessories, portable night lighting equipment, special grades of oils and lubricants, etc.

The Maneuvers were conducted from February 1st to 15th, and involved three phases, viz: attack of Bombardment planes on Pursuit and Attack planes; attack of Pursuit by Bombardment and Attack planes, two tactical situations but at different localities.

TRAINING AND MANEUVERS

1st Wing, GHQ Air Force:

The 1st Wing of the GHQ Air Force, with the exception of the 19th Airship Squadron at Moffett Field, Calif., and the 19th Bombardment Group, March Field, Calif., concentrated at Muroc Dry Lake in the Mojave Desert for bombing and gunnery maneuvers from March 10th to 20th. Participating in these maneuvers were 110 officers and 700 enlisted men, utilizing 55 combat airplanes. Concrete bombs were tried out during these exercises for the first time in the history of the Air Corps. These weigh exactly the same as the others and have a reasonable degree of accuracy.

In the Spring, Squadrons of the 7th Bombardment Group, Hamilton Field, Calif., began taking their turn in two-week periods of intensive training at Mather Field, Calif.

The 31st Bombardment Squadron operated in squadron maneuvers at Mather Field, May 1 to 29, 1936.

The 7th Bombardment Group, on July 17th, conducted a group interception of a ship at sea. The Transport MEIGS was intercepted an hour and seven minutes after the Group left the Golden Gate.

The 30th Bombardment Squadron returned to March Field on October 13th, after ten days of maneuvers and range practice in the Pacific Ocean off Long Beach, Calif.

Bakersfield, Calif., was the scene of one of the greatest series of Army Air Corps maneuvers held in any West Coast municipality in recent years. The 34th Attack Squadron from March Field was the first unit to take the field and was encamped at Bakersfield from October 21st to 28th, followed by the 73rd Attack Squadron, from October 28th to November 4th, and the 95th Attack Squadron for the week ending November 11th. The entire 17th Attack Group, consisting of about 50 officers, 200 enlisted men and 24 of the newest Northrop Attack planes, was encamped at Bakersfield from November 11th to 18th, the missions mainly performed being those of dispatching Attack planes daily to the Muroc Dry Lake for bombing and gunnery practice.

Group Maneuvers of the 19th Bombardment Group (30th and 32nd Bombardment Squadrons, 38th Reconnaissance Squadron and 23rd Photo Section) took place at Bakersfield, Calif., between November 14th and 21st, when 40 officers and 250 enlisted men were encamped at the airport.

The 9th Bombardment Squadron returned to Hamilton Field from a most successful field exercise at Stockton, Calif. Sixteen officers, 5 Flying Cadets and 96 enlisted men participated, and a week of perfect weather made possible a diversified, interesting and complete training maneuver.

The 31st Bombardment Squadron returned to Hamilton Field, Calif., on December 8th after a week's stay at Fresno, Calif., where maneuvers were conducted.

The 88th Reconnaissance Squadron returned to Hamilton Field from a field exercise at Redding, Calif., seven days being spent in the field, of which three were used for search and patrol missions and two on reconnaissance and aerial photographic missions.

2nd Wing, GHQ Air Force:

From May 22nd to June 6th, the First Pursuit Group, Selfridge Field, Mich., was based in the area of Midland - Bay City - Saginaw and Camp Skeel, Oscoda, Mich., for the purpose of participating in group maneuvers.

During the participation of the 2nd Bombardment Group in the Second Army Maneuvers, 18 B-10B airplanes from the 49th and 96th Bombardment Squadrons executed on August 1st a simulated bombing assault on Chanute Field, Ill. On August 2nd, with the support of Attack units from Barksdale Field, La., the Group "assaulted" the enemy ground forces at Fort Knox, Ky.

On the night of August 7th, a 3-plane formation from the 49th Bombardment Squadron made an assault on Fort Knox, Ky.

On August 9th, a formation of 15 B-10B planes from the 49th and 96th Squadrons were flown to Selfridge Field, Mich., for an aerial review over the Allegan Area the following day. Attack units from Barksdale Field and Pursuit units from Selfridge Field also participated in this demonstration.

Three B-10B planes from the 96th Squadron were flown from Langley Field on August 13th to stage a night attack on enemy ground forces concentrated in the Allegan Area.

The last mission to be flown in connection with the Second Army Maneuvers was an aerial review over the Allegan Area on August 20th. The 2nd Bombardment Group furnished 10 B-10B airplanes for this review.

The Second Bombardment Group actively participated in the maneuvers utilizing the fighting forces of both the Army and Navy, held off the Virginia-Carolina coast, which created national interest. The use of Air Corps Reconnaissance and Bombardment organizations in coast defense tactics was a unique and highly enlightening experience for all officers and enlisted men concerned. Daily missions were flown out over the ocean for distances varying from 50 to 125 miles, which flights culminated with the bombing of targets towed on the surface by naval vessels.

A formation of four A-8 Attack planes of the 37th Attack Squadron, Langley Field, Va., participated in the Second Army Maneuvers for a period of three days, August 6th - 8th.

The 8th Pursuit Group Headquarters, Langley Field, departed August 12th for Virginia Beach, Va., to engage in field exercises for a period of two weeks, using the new PB-2A airplanes.

3rd Wing, GHQ Air Force:

The quarterly test of the 90th Attack Squadron, Barksdale Field, La., with full field equipment, was conducted from April 6th to 10th at Natchitoches, La.

A flight of 17 A-17 Attack planes departed from Barksdale Field, La., August 1st, for Selfridge Field, Mich., to participate in the maneuvers of the Second Army.

During the period from September 7th to 12th, the 90th Attack Squadron, Barksdale Field, La., carried out squadron field exercises at Fort Crockett, Texas. Twelve A-17 Attack planes were flown in these exercises.

The 20th Pursuit Group, Barksdale Field, La., took off on October 13th, and for several days staged maneuvers over several cities in Texas. The 79th Pursuit Squadron was based at Houston, the 77th at Beaumont and the 55th at Fort Crockett.

The 77th Pursuit Squadron, Barksdale Field, conducted interception problems at Natchitoches, La., for the period of one week.

For a period of five days, the 79th Pursuit Squadron, Barksdale Field, La., occupied the field camp at the Municipal Airport at Natchitoches, La., where field exercises were conducted.

The period between October 26th and November 5th found the 20th Pursuit Group (55th, 77th and 79th Pursuit Squadrons) of Barksdale Field, at the Shushan Airport, New Orleans, La., working interception problems with the 3rd Attack Group. Daily missions took the Pursuiters to several cities in the south, among them Pensacola, Fla., Montgomery and Mobile, Ala. For the most part, the 3rd Attack Group simulated the enemy forces for the 20th Pursuit Group.

Other Air Corps Organizations:

The 16th Pursuit Group, Albrook Field, Canal Zone, completed its annual period of field training on March 27th, after operating for approximately two weeks on the temporary airdrome at Aguadulce, Panama. The feature of the maneuvers was the night operations from the newly improvised field at Aguadulce, this marking the first time such operations were conducted in the Panama Canal Department from auxiliary fields. Most of the night work fell to the 25th Bombardment Squadron, France Field, which cooperated with the Pursuit Group in a number of missions. The field at Aguadulce was lighted by kerosene pots, and two anti-aircraft searchlights were used in lieu of floodlights. The planes of the 16th Pursuit Group were flown a total of 408 hours on 40 tactical missions.

Six pilots from Brooks Field, Texas, in three O-43 planes, participated in maneuvers at Fort Leavenworth, Kansas, June 4th to 19th, and at Fort Sill, Okla., from June 20th to 27th.

Starting June 27th, the Air Corps took a hand in a five-day "war" which constituted the closing exercises of the graduating class of the Field Artillery School at Fort Sill, Okla. The 1st Balloon Squadron and Flight E, 16th Observation Squadron, assisted by three A-17 Attack planes from Barksdale Field, La., and three O-43 Observation planes from Brooks Field, Texas, performed photographic and visual reconnaissance missions. In addition, the Attack planes "strafed" and laid smoke screens for the further education of the student officers.

A formation of eight B-12A planes from Luke Field, T.H., executed on September 7th a successful interception mission with the U.S.Army Transport REPUBLIC. The Transport was intercepted while approximately 175 miles from Makapuu Head, equivalent to a half day's steaming. The interception was actually effected within 15 seconds of the hour scheduled.

During the training year 1936, the 91st Observation Squadron, transferred from Crissy Field, Calif., to Fort Lewis, Wash., with a daily average of seven planes in commission, amassed a total of 5,398 aircraft hours. In cooperation with other branches of the military service, a total of 542 hours was flown and 331 hours of night flying were accumulated between foggy nights at Crissy Field.

MANEUVERS IN COOPERATION WITH OTHER BRANCHES

The 91st Observation Squadron, with the 15th Photo Section attached, stationed at Crissy Field, Calif., completed field maneuvers with the Sixth Brigade. From April 12th to 29th, these organizations were encamped at the Watsonville Airport, about 100 miles south of San Francisco.

During the months of May and June, the 15th Observation Squadron, Scott Field, Ill., carried out cooperative missions with other branches of the Regular Army at Fort Knox, Ky., Fort Sheridan, Ill., and Manitowoc, Wisconsin.

Three A-17 planes of the 13th Attack Squadron, Barksdale Field, La., were flown on June 20th to Fort Sill, Okla., where, joined by three O-43 planes from Brooks Field, Texas, they constituted the "Red Air Force" in general field exercises of the Field Artillery graduating class, which extended over a period of 4 days.

Flight A of the 16th Observation Squadron, Langley Field, Va., arrived at Bolling Field, D.C., Sept. 19th, and was encamped there for three weeks while performing cooperative missions with the Infantry from Fort George Meade, Md., and the Field Artillery from Fort Hoyle, Md.

The 63rd Coast Artillery (Anti-Aircraft) from Fort MacArthur, Calif., conducted searchlight practice at March Field, Calif., during the latter part of September and first half of October. A plane from the 19th Bombardment Group, March Field, was used in the nightly problems. In the final, or record problem twelve planes were employed.

Three Bombardment planes were flown from Luke Field, T.H., to Maui on September 23rd, and for two days a series of cooperative missions were carried out in connection with the annual encampment of the 299th Regiment, Hawaii National Guard.

During the week of November 9th, all units in Hawaii were engaged in the Hawaiian Department Military Competitions, an annual event inaugurated in 1936 by Major General Hugh A. Drum, Department Commander. The 18th Composite Wing, embracing the 5th Composite Group of Luke Field and the 18th Pursuit Group of Wheeler Field, participated in military events in competition with other organizations in such activities as recruit drill, tent pitching, personal appearance and equipment events, and events for motor transportation. A number of flying events by the Air Corps was staged.

DEMONSTRATIONS

Coordination of the Attack Aviation course at the Air Corps Tactical School with the present work carried on by the Third Attack Group was effected in part by a demonstration at Maxwell Field, Ala., on January 27th, when nine A-12 planes of the 8th Attack Squadron, commanded by Major Lester J. Maitland, were utilized in a simulated attack on an enemy airdrome through the spraying of chemicals and the dropping of parachute bombs.

Personnel of Bolling Field, D.C., took an active part on April 6th in the Army Day parade in Washington. A P-26 airplane, mounted on a flat trailer trimmed with Corps colors and surrounded by a marching squad of soldiers, made an impressive float.

On Army Day, a two-flight formation from Barksdale Field, La., flew over the city of Shreveport for an extended period, dropping parachute flares well away from the danger areas but visible from anywhere in the city. Continuous communication between the planes and two Shreveport radio stations was broadcast.

Albrook Field, Panama Canal Zone, was the scene on April 2nd of the largest review in the history of the Panama Canal Department. Approximately 11,000 troops, all available motor transportation and airplanes were utilized. The review was received by Hon. Harry H. Woodring, then Assistant Secretary of War, at that time in Panama making an extensive inspection of the Canal Zone and its installations. In the aerial review were the new B-10 Bombers which on the preceding day, led by Lieut. Colonel Charles B. Oldfield, had completed the ferry flight from Langley Field, Va. to France Field, Panama Canal Zone.

On April 24th, nine Pursuit and nine Bombardment planes from Kelly Field, Texas, were flown on a training maneuver involving the interception of Bombing planes by a Pursuit formation. This maneuver was held at the same time a four-mile long "Battle of Flowers" parade, in commemoration of the 100th anniversary of the battle of San Jacinto, began to weave through the streets of San Antonio.

The San Francisco Bay Region Junior Birdmen of America visited Hamilton Field, Calif., on May 24th. The youngsters brought along a sundry collection of model airplanes which they flight-tested at the field. For the benefit of the young visitors, the various squadrons at the field demonstrated tactical and training maneuvers.

Airplanes of the Third Wing, Barksdale Field, comprising 19 Pursuit and 17 Attack, were flown on June 6th to Dallas, Texas, where an aerial exhibition was staged at the official opening of the Texas Centennial Exposition.

Six A-8 Attack planes from the 37th Attack Squadron, Langley Field, Va., were employed in an attack demonstration at Edgewood Arsenal, Md., for the graduating classes of the Chemical Warfare School. The 37th also gave a demonstration of ground strafing before students of the Army War College, Washington, D.C.

Langley Field airmen riddled "enemy" targets on Plum Tree Island bombing range in an uncanny exhibition of marksmanship which captured the imagination of 120 graduates of the Army War College 1935-1936 Class, and a hundred or so spectators lining the beach. Forty-three airplanes (19 Bombardment, 18 Pursuit and 6 Attack) took part in the big aerial show. For a little over an hour the airmen gave exhibitions of formation flying, long-range gunnery, tow-target gunnery, machine gun attacks on a water target and bombing from high altitudes.

The Second Bombardment Group, Langley Field, Va., staged the largest bombing demonstration in the history of the Air Corps, when 18 B-10B airplanes, each carrying six 100-pound demolition bombs, one half of them instantaneous fuzes and the remainder delay fuzes, made an attack on a target and dropped all bombs at one time on a signal from the leader. Immediately following the 18 planes, three B-10B's, each carrying three 300-pound demolition bombs, bombed the same target in salvo.

Scott Field, Belleville, Ill., was the scene of a Field Day on Flag Day, June 14th, the field being turned over to the Sons of the American Legion of Illinois and Missouri. Various athletic events, competitions between drill teams and bugle corps, flying of model airplanes, and a demonstration by 12 P-26 Pursuit planes from Selfridge Field, Mich., were the outstanding features of the day. Approximately

25,000 people were present at the field.

A daily feature at the National Air Races at Los Angeles, Calif., Sept. 4th to 7th, was a demonstration by a squadron of A-17 Attack planes from March and Barksdale Fields of various types of attack and show formations. Eighteen pilots took part in the swooping low maneuvers and novelty formations depicting the letters "L" and "A" which passed over the sky-turned faces of consistently record-breaking crowds of spectators. The Races proved to be the greatest held since their inception, attracting a daily attendance of approximately 80,000, or 320,000 for the four days.

The 90th Attack Squadron, Barksdale Field, La., dispatched on June 17th a flight of three A-12 planes to Maxwell Field, Ala., from which place they operated in an attack on ground troops in the vicinity of Fort Benning, Ga., using machine guns (simulated) and mustard gas (actual lime water sprayed from two 18-gallon tanks in each airplane).

An aerial demonstration at Fort Benning, Ga., for the benefit of the senior class of the U.S. Military Academy was participated in by the 20th Bombardment and 37th Attack Squadrons from Langley Field, Va., and the 13th Attack and 79th Pursuit Squadrons from Barksdale Field, La.

Brigadier General Halstead, Pacific Sector Commander, and Brigadier General George E. Brett, 19th Wing Commander, witnessed an aerial review at Albrook Field, Panama Canal Zone, on August 29th. The entire Pursuit strength of the Isthmus, plus O-19 planes of the 44th Observation Squadron, participated.

The air demonstration given by the GHQ Air Force at Fort Leavenworth, Kansas, on September 25th, under the direction of Brig. General H.C. Pratt, Commander of the 2nd Wing, was witnessed by approximately 10,000 spectators. The participating organizations were the 49th Bombardment, 17th Pursuit and 90th Attack Squadrons, from Langley, Selfridge and Barksdale Fields, respectively.

About 2,000 Kiwanians from the California-Nevada District visited March Field, Calif., October 8th, and witnessed a demonstration of air maneuvers, parachute bomb dropping, ground strafing, etc.

On the afternoon of October 17th, the First Pursuit Group, Selfridge Field, Mich., conducted the 12th running of the Mitchell Trophy Race. Unfavorable weather kept the attendance down to approximately 20,000 spectators. The winner of the Race, 1st Lieut. John M. Sterling, Air Corps, attained an average speed of 217.546 miles per hour, breaking all previous speed records for this event. A number of other racing events were held during the afternoon, also acrobatic competitions, an attack demonstration, balloon bursting by two P-26 planes, formation flying, etc.

Nine Martin Bombers of the 19th Bombardment Group, March Field, Calif., on November 14th, swooped over a target in the Great Salt Lake, Utah, in one of the most spectacular demonstrations of modern Army bombing technique ever seen in the far west.

The Headquarters of the GHQ Air Force, Langley Field, Va., was represented at the All American Air Maneuvers at Miami, Fla., in December, by a delegation of four Langley Field officers, who flew to Miami to act as observers at the Meet.

FLYING MISSIONS OF MERCY

The 49th Bombardment Squadron, Langley Field, on February 10th and 11th, dropped packages of food to the inhabitants of Tangier and Smith Islands who were facing starvation due to heavy ice floes in Chesapeake Bay which prevented any assistance from reaching them by water. Five trips were made and a total of approximately 5,000 pounds of food was dropped.

During the flood in the State of Pennsylvania in March, the 2nd Bombardment Group, Langley Field, performed relief missions by dropping food and other supplies to isolated communities.

Rescue missions were performed by Selfridge Field pilots on May 27th and 28th in an attempt to locate on Lake St. Clair boating parties reported missing. Two boats were sighted, one overturned with a lone survivor clinging to it, and the other boat traveling in circles at full throttle with no one aboard. The nearest shore station was radioed the location of the overturned craft and a boat was sent out to the rescue.

Two mercy flights were made on July 15th in the Transport C-15 hospital ship from Kelly Field, Texas. After picking up at Dallas, Tex., a Field Artillery soldier stricken with appendicitis and transporting him to the Fort Sam Houston Hospital, this plane later that day was flown to Alice, Texas, where a CCC youth, severely injured in an auto truck accident, was picked up and also transported to the Fort Sam Houston hospital.

Planes of the 18th Pursuit Group, Wheeler Field, T.H., transported two appendicitis cases from the Kilauea Military Camp on Hawaii to the Tripler General Hospital. On August 23rd, during the Hawaiian National Guard encampment, an A-12 Attack plane was dispatched with life jackets in the endeavor to rescue three men who were washed out to sea by the current. Two of the men reached the shore safely, but the third drowned before the plane reached the scene.

Colonel H.W. Campanole, Military Attache to Central America, stationed at San Jose, Costa Rica, required an immediate operation. Good hospital facilities being in Panama, a Bellanca Transport plane was flown to San Jose and the patient was transported to the Gorgas Hospital where a successful operation was performed.

During the last typhoon in the Philippines, a motorized battery of Field Artillery was marooned on a sand bar in the middle of the Bamban River when half way across. A sudden rise of water prevented progress in any direction, and in their two days' isolation two pilots of the 3rd Pursuit Squadron, Clark Field, P.I., made several flights to the sand bar and dropped food and medical supplies to the Artillerymen.

AERIAL PHOTOGRAPHY

The 21st Photo Section, Scott Field, Ill., delivered to the Fort Riley Cavalry School copies of a large mosaic covering 560 square miles of territory in the Fort Riley region. Many weeks were spent by the personnel of this organization

in assembling this large photographic mosaic.

Master Sergeant Joe M. Cates, 8th Photo Sec., Mitchel Field, N.Y., established what is believed to be a record in aerial photography when he secured 530 vertical aerial photographs in an hour and 28 minutes during a cooperative photographic mission along the New Jersey coast line for the Beach Erosion Board. Captain P.T. Cullen piloted the plane.

Of two photographic missions in the Puget Sound area assigned to the 15th Photo Section of Crissy Field, Calif., one in cooperation with the 20th Engineers was a large mapping project covering ten 15-minute quadrangles and tying together several projects which had been completed in the past. The other project was the laying of a tactical map over an area adjacent to Fort Lewis, Wash., embracing 36,000 square miles.

On July 3rd, Lieut. Charles Densford and Staff Sgt. Coy, of Kelly Field, took 50 exposures of Texas floods for Congressional use.

During the Second Army Maneuvers in the Allegan County, Mich., area in August, the 21st Photo Section, Scott Field, Ill., made photographic records of all troop movements, mosaic maps, and performed all other necessary work. On 22 flight missions, covering 41:15 hours' flying time, 829 negatives were made, from which 2731 prints were taken. Fifteen small mosaics were assembled for the use of umpires assigned to these maneuvers. Photographs were made with excellent results under all conditions, including complete overcast sky and heavy haze. Vertical photographs were made at altitudes from 8,000 to 12,000 feet with both clear and overcast sky. Oblique photographs were made from 2,000 to 3,500 feet on clear days, and at 1,000 feet and lower when the ceiling was low. Lieut. Kurt M. Landon and Master Sergeant N.K. Loupos photographed 400 square miles in the Allegan County area.

The 2nd Photo Section, Langley Field, made a photographic mosaic of Fort Meade, Md., covering 36 square miles, for lithographic reproduction.

The Photographic Section at Bolling Field, D.C., completed an aerial mosaic map of the District of Columbia and vicinity. Assembled in the form of a circle, it included all the territory within a radius of 18 miles from the Post Office building. This unit also photographed the Susquehanna River basin for use in flood control developments.

Proceeding to Northern New Mexico, a pilot and photographer of the 1st Photo Section, Kelly Field, took aerial photographs of the progress of the Conchos Dam on the North Canadian River, also the terrain in that vicinity. Approximately eight square miles were covered by 43 vertical photographs. Sixty-two oblique photographs were also taken.

CHANGES OF STATION

The 91st Observation Squadron and the 15th Photo Section, occupants of Crissy Field, Presidio of San Francisco, Calif., since the establishment of that field in 1919, were in June transferred to their new home at Fort Lewis, Washington, over 900 miles from San Francisco.

FLOODS AND STORMS

Flood waters of the Potomac River completely inundated Bolling Field, D.C., necessitating the evacuation of the field on March 18th, the removal of all Air Corps equipment, and the abandonment of officers and noncommissioned officers' quarters on the field. It was not until the morning of March 21st that the water receded enough to permit the troops to return to the field and begin the work of cleaning up buildings which had been flooded.

The Air Corps bombing and gunnery range at Valparaiso, Fla., was visited by a violent hurricane on the night of July 30-31. The strenuous efforts of Air Corps personnel in bracing certain buildings, removing fallen trees and electrical wiring aided materially in reducing to a minimum the damage caused by the storm. Civilians camping in dangerous localities were rescued and brought to places of safety.

MISCELLANEOUS ITEMS

A new non-stop distance record for amphibian planes was made by Major General Frank M. Andrews, Commanding General of the GHQ Air Force, on June 29th. He was accompanied by Major General Frank R. McCoy, Second Corps Area Commander; Major John F. Whiteley, co-pilot; 1st Lieuts. Hugh F. McCaffery and Joseph A. Miller, navigators, Corporal John McKenna, Privates Ralph A. Minor and Charles J. Archer. Flying in the Douglas OA-5, the distance of 1425 miles from San Juan, Porto Rico, to Langley Field, Va., was covered in 11 hours and 9 minutes.

Of the total of 117 world's aeronautical records, listed by the Bulletin of the Federation Aeronautique Internationale as of January 1, 1936, France was credited with 37 of these records; the United States with 36; Italy, 27; Germany and Poland, 8 each; and Great Britain, 1. On July 1, 1936, American aviators, with 49 world's records to their credit, led all other nations in this respect.

The aeronautical display of the Army Air Corps at the Great Lakes Exposition at Cleveland, Ohio, was made up of specially selected items representing the very latest as well as some of the earliest types of equipment used by the Air Corps.

During the period between July 24th and August 27th, Major General Oscar Westover, Chief of the Air Corps, made a tour of inspection which embraced practically every Air Corps station within the continental limits of the United States. He also visited and inspected some of the foremost aircraft factories in the United States.

Memory of an Army flyer who was killed at Fort Worth, Texas, 18 years ago, was honored at March Field, Calif., on August 9th, when a bronze plaque, dedicated to Lieut. Peyton C. March, Jr., was unveiled at the San Diego highway entrance to March Field amidst appropriate but simple ceremonies. About 400 civilians and 1300 soldiers attended the ceremony.

The annual Engineering and Supply Conference was held at the Materiel Division, Wright Field, Ohio, October 5th to 9th, and was attended by a representative group of officers whose duties are connected with engineering and supply matters relating to the Air Corps.

RESERVE TRAINING

Twenty-one Reserve officers reported at Langley Field on July 19th for two weeks' active duty, 17 being assigned to the 20th Bombardment Squadron and 4 to the 8th Pursuit Group.

On July 19th, 53 Air Reserve officers began a two-week period of active duty at Long Beach, Calif.

The period from August 2nd to 15th at the Municipal Airport, Oakland, Calif., was devoted to training of 12 Reserve officers from the 316th Observation Squadron and 4 Reserve officers from the 381st Service Squadron, attached. From August 16th to 29th, training was conducted for 11 Reserve officers from the 367th Observation Squadron and 4 Reserve officers attached.

The Air Corps Reserve of the 7th Corps Area completed two excellent summer training camps, both at Camp Ripley, Minn., the first from August 23rd to September 5th, and the second from September 6th to 19th. Over 751 hours were flown during the two training camps.

LONG DISTANCE FLIGHTS

The largest mass flight of U.S. Army planes made to a possession beyond the continental limits of this country was completed on February 28th, with the arrival in the Panama Canal Zone of 13 P-12 and 11 B-6 airplanes. These planes, used by Air Corps organizations at Langley Field, and transferred to Panama to replace unserviceable aircraft, were ferried by Air Corps pilots on duty in the Panama Canal Department. Leaving Langley Field on February 11th, the flight proceeded via Atlanta, Ga., to the San Antonio Air Depot for mechanical check-up of the planes. Taking off from San Antonio on February 21st, the flight proceeded to destination via Brownsville, Texas; Tampico and Vera Cruz, Mexico; Guatemala City, Guatemala; Managua, Nicaragua, and San Jose, Costa Rica. Lieut. Colonel Charles T. Phillips was flight leader of the Pursuit contingent and Lieut. Colonel Junius E. Houghton of the Bombardment.

Piloting three new PB-2A planes, Lieut. Col. Ralph Royce, Major Alfred E. Kessler and Capt. Robert C. Oliver flew from the plant of the Consolidated Aircraft Co., San Diego, Calif., to Selfridge Field in 13 hours and 10 minutes of actual flying time.

Major Ira C. Eaker, Air Corps, piloting a single-seater Pursuit plane, landed at Los Angeles, Calif., on June 7th, following a flight started June 3rd from Mitchel Field, N.Y., during which he relied solely on the instruments in the plane to guide him to his destination. Owing to the limited gasoline supply of the small Pursuit plane, the flight was made in easy stages. Major W.E. Kepner, in another Pursuit plane, served as a convoy to avert any mishaps.

Three airplanes of the 2nd Observation Squadron, Nichols Field, P.I., were flown on a 450-mile mission, during which landings were made on several islands of the Philippine Archipelago.

Several extended cross-country flights in formation were performed by the 20th Pursuit Group during June. Fourteen planes of the 55th Squadron were flown to Little Falls, Minn., on June 19th; 12 planes of the 79th Squadron to Denver, Colo., on June 27th, and 12 planes of the 77th Squadron to Dayton, Ohio, June 28th.

In 7 hours and 45 minutes, five Northrop Attack planes from March Field, Calif., completed a flight to Kelly Field on August 21st in what was purported to be the longest military non-stop formation flight on record. The flight was designed to test the gas and oil consumption of the new Attack planes assigned to the 73rd Attack Squadron. An average speed of 148.2 miles per hour was reported for the trip.

A flight of eight A-17 Attack planes from Barksdale Field departed on September 1st to participate in the National Air Races at Los Angeles, Calif. Stops were made at Midland and El Paso Texas, enroute. The total flying time of the flight at the Races was 71 hours and 5 minutes.

On November 15th, the 21st Reconnaissance Squadron, Langley Field, Va., completed a most interesting and instructive flight in a Douglas OA-5 plane, to Panama. Only 456 of the total distance of 3390 miles was over land. Miami, Fla., was the only intermediate stop both ways.

Testing long non-stop flights through the sub-stratosphere, ten speedy Pursuit planes from Barksdale Field landed at Kelly Field on December 12th, after a 360-mile aerial journey which required 2 hours and 15 minutes.

Five B-10B planes of the 7th Observation Squadron, France Field, Panama, took off on December 14th on a good will flight to Bogota, Colombia. A stop was made at Medellin, Colombia, 416 miles from Panama, where the planes were refueled and the flight personnel were greeted by high officials of the town. At Bogota the flight was welcomed and entertained by high officials of the Colombian government. Starting on the return flight on December 17th, the flight personnel remained overnight at Cali, Colombia, where the primary military and flying school is located, and left on the morning of the 18th for a direct flight of 365 miles to France Field, which was accomplished in 2 hours and 20 minutes.

A ferry flight of three planes (a Bellanca C-27 and 2 Douglas Amphibians) with Brigadier General George H. Brett in command, arrived in Panama on December 20th. The flight took off from Randolph Field, Texas, on December 17th, and made stops at Minatitlan, Tampico and Vera Cruz, Mexico; Guatemala City, Guatemala; San Jose, Costa Rica, and Managua, Nicaragua.

The Third Pursuit Squadron, Clark Field, P.I., completed a cross-country flight to the Southern Islands of Leyte, Cebu, Bohol, Mindanao, Jolo, Masbate, Negros, Mindoro and Panay. Approximately 25 landing fields were visited during the 5-day trip, and all were found generally to be in good condition.

ALTITUDE FLIGHTS

Individual and formation altitude performance flights were accomplished by the 35th Pursuit Squadron, Langley Field, January 20-26. Formations were operated above 20,000 feet to famil-

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iarize pilots with high altitude conditions and the use of oxygen equipment.

Flights for the purpose of recording measurements of cosmic ray intensities were made at Bolling Field, D.C., December 21st and 22nd, in a C-8 photographic plane, observations being conducted at altitudes of 10,000, 15,000 and 20,000 feet.

Lieut. W.R. Robertson, 33rd Pursuit Squadron, Langley Field, Va., flew a PB-2A airplane up to 39,200 feet and remained at that altitude for approximately 20 minutes. At this altitude the controls froze and the pilot had to throttle back to lose altitude and return to a warmer layer.

MISCELLANEOUS FLIGHTS

Sixteen officers from the 1st Pursuit Group, Selfridge Field, ferried to their home station P-26C Pursuit airplanes manufactured by the Boeing Aircraft Co., Seattle, Wash.

In a flight on July 7th to test a blind flying hood, designed by the 19th Bombardment Group and adopted to the B-10 plane, Col. C.L. Tinker, in a hooded cockpit of a B-10B, flew from Hamilton to March Field and return, relying solely on the instruments in his plane. Approximately four hours were spent under the hood and 600 miles covered.

A Douglas C-33 Transport plane, piloted by Privates Treweek and Davis, was flown from Patterson Field, Ohio, to Bolling Field, D.C., in an hour and 40 minutes, or at an average speed of nearly 240 miles per hour. This constituted a record run between these two fields.

During July, Flight A, 1st Transport Squadron, Patterson Field, in a total of 17 freight trips, flew 12,655 miles and carried freight aggregating 42,377 pounds.

On September 17th, 19 airplanes from Langley Field were flown to and temporarily housed at the Middletown Air Depot, this being occasioned by the arrival of a hurricane off the Virginia Capes which threatened to flood Langley Field.

A Douglas twin-engined airplane, equipped as a flying laboratory to conduct extended tests on a combination of celestial and dead reckoning navigation equipment, landed at Brownsville, Texas, Sept. 24th, completing a trip across the Gulf of Mexico from New Orleans, La.

NEW CONSTRUCTION

The landing mat at Moffett Field, Calif., was extended 500 feet, making the total length of same 2,000 feet.

Work started on April 1st on a new concrete apron, approximately 1,000 feet long by 100 feet wide, and from 6 to 8 inches thick, for the airplane hangars at Scott Field, Ill. This project included a concrete drain along the landing field side and three wash racks and a number of gasoline refueling boxes.

New airdrome equipment was installed at Brooks Field, Texas, including a tower for a remotely controlled wind indicator in front of the transient hangar, a bank of B-9 floodlights at the northeast end and one at the west end of the field.

The landing mat at Luke Field, T.H., was lengthened by 500 feet and widened by 100 feet, increasing its size to 3,000 by 400 feet.

Ground was broken on September 8th for the construction of Sacramento's new $7,000,000 air repair depot. While four Air Corps Squadrons soared over the site, near Ben Ali, Hon. Frank M. Merriam, Governor of California, in the presence of approximately 15,000 spectators, pushed down on a plunger which set off a blast of dynamite as the signal for work to start. When the project is completed, this site will house the Army's repair center for planes on the Pacific Coast, Hawaii and the Philippines.

A control tower to regulate air traffic arriving at or departing from Mitchel Field, N.Y., was placed in operation there on November 10th, with operating personnel maintaining continuous 24-hour watch with radio receivers tuned to four different frequencies.

The night lighting system at Kelly Field, Texas, was augmented by the installation of three Type 9-A floodlights. There was also installed a new T which has automatic wind control settings, and a new system of signal lights for night flying control.

SCHOOL ACTIVITIES

During the calendar year 1936, a total of 83 officers and 281 Flying Cadets commenced training at the Air Corps Primary Flying School at Randolph Field, Texas. The March, 1936, class, the smallest one entering the Air Corps Training Center for quite a number of years, comprised 7 officers and 61 Flying Cadets; the July class, 15 officers and 117 Flying Cadets, and the October class, 61 officers (all graduates of the June, 1936, class of the U.S. Military Academy) and 103 Flying Cadets.

A total of 196 students graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, during 1936. The February graduating class comprised 5 officers of the Regular Army, 2 foreign officers and 45 Flying Cadets; the June class, 9 officers and 52 Flying Cadets, and the October class, 34 officers of the Regular Army, one officer of the Philippine Constabulary and 48 Flying Cadets.

Ten Air Corps officers were assigned as students in the 1936-37 class of the Army War College, and nine in the 1936-1937 class of the Army Industrial College.

Graduation Exercises at the Air Corps Tactical School, Maxwell Field, Ala., were held on June 2, 1936, the graduating class comprising 66 Air Corps officers, one Navy officer and three Marine Corps officers.

Six pilots of the 1st Pursuit Group, Selfridge Field, departed on June 13th in PB-2A planes for Mitchel Field, N.Y., for duty in connection with aerial experience instruction of West Point cadets.

The 7th Bombardment Group, Hamilton Field, started a navigation school on July 6th.

The 2nd Bombardment Group, Langley Field, Va., departed on June 15th for Mitchel Field, where for three weeks intensive flying was conducted in connection with the aerial experience of the first class from the U.S. Military Academy.

Sixty-one members of the class of 276 Cadets who graduated from the U.S. Military Academy on June 12, 1936, were attached to the Air Corps for flying training.

Commencement exercises of the 1936 class of the Air Corps Engineering School at Wright Field were held on July 31st in the Materiel Division Auditorium. Brigadier General A.W. Robins, Chief of the Materiel Division, addressed the graduates and awarded them their diplomas. Ten Air Corps officers comprising the 1937 Engineering class, reported for duty in August.

Instruction in the operation and maintenance of automatic pilots was started on July 15th in the Equipment Branch, Materiel Division, with representatives from the Fairfield and Middletown Air Depots, Chanute and Wright Fields in attendance.

From October 19th to 31st, graduates of the Armorers class of the Air Corps Technical School, Chanute Field, Ill., participated in field exercises at the gunnery camp at Valparaiso, Fla. and were given practical instruction in loading and fuzing of demolition, practice and fragmentation bombs under actual service conditions.

Five medical officers of the Regular Army graduated on Nov. 14, 1936, after a four months' basic course of instruction at the School of Aviation Medicine at Randolph Field, Texas.

Four student navigators completed the ground school course in Celestial Navigation in the 88th Reconnaissance Squadron, Hamilton Field, Calif., on October 9th.

Students of the 19th Composite Wing Communications School, Luke Field, T.H., engaged in field maneuvers for four days, the class being divided into six teams, each one operating a field radio set.

COOPERATION WITH CIVIL ACTIVITIES

Utilizing four planes from the 23rd Bombardment Squadron, Luke Field, T.H., seeds of the white Hawaiian mahogany tree were dropped over eroded areas on the Island of Oahu on January 20th and 23rd. Mr. G.S. Judd, Territorial Forester, furnished 2,000 pounds of seeds which were divided among the four planes. Sowing seeds in this manner in the past produced excellent results.

The 72nd Bombardment Squadron, Luke Field, T.H., aided the National Park Service of Hawaii by sowing Koa seed over the northern half of the Waianae mountain range from Bombing planes.

From July 1, 1934, to June 30, 1936, Scott Field officers and enlisted men made a total of 588 "weather hops" for the U.S. Weather Bureau.

With forest fires in upper Michigan assuming serious proportions, PB-2 planes from Selfridge Field, with Federal officials as observers, were used to survey the situation in order to map out defensive measures.

Flying three B-12A planes of the 4th Observation Squadron, Luke Field, T.H., a reconnaissance of the slopes of Mauna Kea was made on October 6th to determine the localities where the majority of wild sheep were collected and to estimate their number, in order to enable the Hawaiian Forestry Service to conduct periodic round-ups. The wild sheep had been causing great destruction to the young struggling timber growth, resulting in increasing erosion.

An Army Bombing plane in Hawaii was put to a rather unique use on October 19th. Instead of bombs, there were carried six 100-pound coils of wire with which to build a long fence on the southeast side of Mauna Loa to prevent the encroachment of wild sheep and goats into the ranch lands below. The project of transporting the wire fencing was accomplished in two hours. Any other method of transportation would have required at least two days.

REORGANIZATION OF AIR CORPS UNITS

On August 12, 1936, the War Department issued instructions governing the reorganization of the Army Air Corps within the continental limits of the United States incident to the reorganization of the GHQ Air Force. Activities placed under the jurisdiction of the Chief of the Air Corps are the Office of the Chief of the Air Corps, Washington, D.C.; the Materiel Division, Wright Field, Ohio; the Air Corps Technical School, Chanute Field, Ill.; the Air Corps Tactical School, Maxwell Field, Ala.; the Air Corps Training Center, and Bolling Field, D.C.

Under the GHQ Air Force organization, various units were reorganized and redesignated, and new organizations constituted from the station complements which were abolished. Nine Base Headquarters and Air Base Squadrons were created, one each at Langley, Mitchel, Selfridge, Hamilton, March, Barksdale, Scott, Brooks and Moffett Fields. Service squadrons were discontinued, the personnel thereof being transferred to Headquarters and Headquarters Squadrons and other units. Most of the Observation Squadrons were redesignated as Reconnaissance Squadrons. Seven squadrons stationed at four Air Corps stations (Chanute, Kelly, Maxwell and Bolling Fields) were rendered inactive, five of them being assigned to the GHQ Air Force and two to Corps Areas.

The Headquarters and Headquarters Squadron of the 2nd Bombardment Group, Langley Field, Va., came into being on September 1, 1936, with 14 officers and 78 enlisted men.

The 21st Reconnaissance Squadron, GHQ Air Force, was reconstituted at Langley Field on September 1st, with two officers and 19 enlisted men.

A new Reserve unit, the 328th Observation Squadron, composed of San Antonio Air Reserve officers, was organized, with Lieut. Colonel Jack H. Lapham in command.

LIGHTER-THAN-AIR ACTIVITIES

The TC-13 airship at Moffett Field, Calif., completed two test flights, the first being a harbor watch mission off San Francisco Bay, operating at the speed of surface craft, which was concluded after 77 hours of flight. The second test was conducted at a cruising speed of 65 miles per hour, a distance of 1855 miles being logged while cruising off shore up and down the California seacoast.

Moffett Field, Calif., transferred to the War Department by the Navy Department, started functioning as an Air Corps station during the latter part of January, 1936. The 19th Airship Squadron, transferred to this station from Langley Field, resumed its tactical training on February 1st.

During the celebration of the second birthday of the Junior Birdmen of America in May, a talk was broadcast from the TC-13 airship at Moffett Field, and rebroadcast by Station KYA of San

Francisco. The organization of Moffett Field was described over the air by Major Burdette Palmer, Air Reserve, Field Director of the Junior Birdmen, while Major Clarence B.Lober, Commanding Officer of the 19th Airship Squadron, explained the construction and operation of the TC-13 airship.

During August, the 1st Balloon Company, Fort Sill, Okla., engaged in the Second Army Maneuvers at Camp Custer, Mich.

The 21st Airship Group, Scott Field, Ill., consisting of the 21st Airship Group Headquarters Detachment and the 9th Airship Squadron, conducted maneuvers from September 15th to 29th in the vicinity of Springfield, Ill. The maneuvers were confined to living in the field and carrying out airship operations without the usual airdrome facilities.

Ed. Note: The review of the activities of the Materiel Division of the Air Corps for the calendar year 1936 will appear as the leading article in the next issue of the News Letter.

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THE NEW CLASS AT THE ADVANCED FLYING SCHOOL

Ten Army officers, a lieutenant of the Mexican Navy, 55 Flying Cadets, one of whom is a member of the Philippine Constabulary, comprise the new class at the Advanced Flying School, Kelly Field, Texas. An additional member of the class is Flying Cadet Henry D. Bastin, who was held over from the previous class, due to a prolonged absence as a result of an injury received in a basketball contest.

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77th PURSUIT TAKES PRIDE IN SQUADRON HISTORY

The 77th Pursuit Squadron, 20th Pursuit Group, Barksdale Field, La., has in its possession one of the finest organization histories that can be found throughout the Army in any of its branches. First begun by Lieut. Richards in November, 1930, it has been faithfully upheld by monthly entries ever since. To date there is nothing missing - every individual who has belonged to the Squadron, every maneuver, special flights, etc., is entered. Major Richards, now commanding the 62nd Squadron at San Antonio, Texas, recently delegated Lieut. Vance to fly to Barksdale Field for pertinent information regarding squadron histories in order that he might initiate and maintain one in his new organization. "When a man makes a better mouse trap than his neighbor (or keeps a better squadron history) the world (or Army) will beat a path to his door." The News Letter Correspondent invites 1st Sergeant Rowen to take a bow.

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STUDY OF NAVIGATION BY HAMILTON FIELD SQUADRONS

At present, Navigation is the key word of the 31st Bombardment Squadron at Hamilton Field, Calif. This Squadron has been concentrating upon the theory of Dead Reckoning Navigation, and it is expected that very shortly all officers of this Squadron will have completed the theory and the class room problems. It is the desire to coordinate the theory of Dead Reckoning Navigation with the actual flying of typical problems soon after the principles have been explained and illustrated in the class room. Due to poor flying weather, it has not been altogether possible to accomplish this. In the near future, however, all officers and cadets will have completed both the class and flying problems.

For the past few weeks the 11th Bombardment Squadron, Hamilton Field, has been conducting a school in Navigation and Meteorology. This class is composed of fourteen officers and three cadets. These classes have been meeting in the mornings, the afternoons being utilized in Navigation missions and air speed calibration flights. Some night flying has been conducted, but due to the generally cold and inclement weather no great amount was done.

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CHINESE FLYER VISITS KELLY FIELD

Captain Luther Yuen Peh Chang, formerly Chief of the Pursuit Section of the Chinese Central Aviation School of Hangchow, China, visited Kelly Field recently. Speaking of this school, the visitor stated that it is patterned after and termed "The Kelly Field of China."

Captain Chang, a former member of the Chinese air forces, said he knew several former Air Corps officers who were comrades of officers now stationed at Kelly Field, and discovered that General Wen, one of China's military leaders, was a classmate of Colonel Arnold N. Krogstad, now Commandant of Kelly Field, in 1909 in the U.S. Military Academy at West Point.

The Chinese Aviation School was established in 1931 by Colonel "Jack" Jouett, former commander of the Third Attack Group when it was stationed at Fort Crockett, Galveston, Texas. Colonel Jouett resigned from the Army to take over the task of establishing this school, which accounts for the American method of training employed there. Captain Chang said that the methods used at Kelly Field in flying training were not new to him, as practically the same ones are used at his school. He expressed interest in some of the new developments in flying instruments at Kelly Field and was especially interested in Pursuit flying training methods. He was escorted over the field by Lieut. M.F. Stalder, instructor in the Pursuit Section at Kelly Field.

The Chinese flyer arrived at San Antonio by rail from the east coast, where he had visited several airplane factories and Air Corps stations. He left by plane for the west coast and will leave the United States via the China Clipper for the Philippine Islands, after conferring with members of the crew of the giant plane on operation methods.

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During January, the Middletown Air Depot completed the major overhaul of 10 airplanes and 51 engines. Minor repairs were made on 32 airplanes and 16 engines, these including the installation of oil dilution systems on 6 airplanes and radio compasses on 26 airplanes.

GRADUATION EXERCISES AT KELLY FIELD

Three officers and 30 flying cadets were graduated from the Air Corps Training Center on Feb. 17, 1937. The usual aerial review was held at 9:30 AM at Kelly Field, the reviewing officers being Maj.General C.V.Birkhead, commanding the 36th Division, Texas Nat.Guard, and Brig. General James E. Chaney, commanding the Air Corps Training Center. This was followed by the graduation exercises in the Kelly Field Theatre at 10:45 AM. General Chaney introduced the speaker, General Birkhead, with the following remarks:

The Army of the United States consists of the Regular Army, the National Guard, and the Organized Reserves. Today our Regular Army consists of 12,000 officers and 150,000 enlisted men. Our National Guard consists of 13,500 officers and 175,000 enlisted men. The Organized Reserves consist of 96,000 officers eligible for active duty assignment in an emergency. It will thus be seen that the National Guard is numerically the strongest of the Army's components. From the point of view of the states, the National Guard is maintained to insure domestic tranquility. However, from a national viewpoint, its mission is the early and effective reenforcement of the Regular Army in an emergency. It is organized in 18 Infantry Divisions, 4 Cavalry Divisions, and certain elements of Corps and Army troops, among which are 19 squadrons of Observation Aviation. In recent years the National Guard has made tremendous strides in preparing itself to carry out its role in national defense and its present recognized high standard of efficiency is in large part due to the patriotism, enthusiasm, and hard work of its personnel - especially its officer personnel. Today we have the honor of having with us the commander of one of our National Guard Divisions, a man who has distinguished himself both in war and in peace, as a soldier and as a citizen. I take great pleasure in presenting to you Major General Claude V. Birkhead, commanding the 36th Division, Texas National Guard."

Extracts from General Birkhead's address are quoted below, as follows:

"I appreciate the honor of being invited here to address this graduating class and to see this review. I have enjoyed every minute of it and my heart swelled a little more, has beat a little more rapidly in the contemplation of my fellow citizens who, like this and the succeeding classes and those that have gone before, dedicate themselves to this training for the purpose of our national defense. I don't think there is anything finer than the young man who looks forward to the possibility that his country might need his services and who, realizing that possibility (and may God grant that it is but a possibility), prepares himself to deliver to the utmost the service that his God-given abilities have qualified him for. I say possibility; I pray God that this country may never engage in another war, either offensive or defensive, but I believe that the best chance of avoiding another war for our country is just what Washington said about it, what Lincoln said about it, what every great man who has studied the question and thought about it, with a realization of what human nature is and has always been. And that is that our best assurance against war is a complete and thorough preparation for it if it should come.

There seem to be rumblings. There may be some reason why our government moves their store of treasure from the seacoast on the East, which, by study and trial and maneuver is believed to be vulnerable to possible air attacks and other attacks; but I hope that that reason is but a possibility that war might some time come. We, I believe, have a great national defense system. It is a democratic defense system. It is (since our defense as represented by the two great oceans on our borders is rapidly disappearing), first our Navy and our coast defenses, then our Regular Army, which is entirely too small. But it is so highly efficient now that, small though it is, those of you who remember the days of 1917 will see an entirely different situation if that Army is ever again called on to function. I believe the American army today is the most efficient army in the world.

Next comes the National Guard system, which can rapidly be expanded to two, to three, to four times its present organization of 175,000 men and 13,500 officers. The National Guard constitutes the first line of defense in any major emergency. The Regular Army being so small will be absorbed in handling and supervision and organization of the armies represented by the National Guards and the selective service. That is something that should not be the case. I remember in 1919 when, taking lessons from the world war, thoughtful men both in and out of the Army, thinking about national defense, began to try to make an organization that would avoid the mistakes and errors that were upon us in the world war and figure out a system. And our present system, as represented by the National Defense Act of 1920, superimposed upon the former National Defense Act, expresses that system. At that time there were many thoughts about the organization and all over the

country the opinion of those who had participated, [illegible], and those who had not participated directly, was sought; and the present system built upon it.

It is not large enough. The Regular Army should be doubled in size. The National Guard should be doubled in size, and every effort should be made to not only have 96,000 officers in the Reserve but to maintain double that amount. I don't believe in this parity business. I don't believe in parity with anybody, with our Navy or with our Army. I don't believe in this idea that America should have a Navy second to none. I don't believe in this idea that America should have an Army second to none. I don't believe in this idea that America should have an air service second to none. I believe that America, disregarding every other nation of the world, should have a Navy the best of all in the world; an Army best of all in the world; an Air Service best of all in the world. And I want to say to you that, if Americans set their faces that way and demand the best in those three elements required for our national defense, I don't believe this country will ever be involved in another war upon foreign shores; and the possibility of being involved in one upon these shores will also be a remote possibility. Those of you who realize the horrors of war can get the idea of what I mean when I say that my heart swells when I see these young men preparing themselves as a part of that national defense system which - if carried out - will probably prevent us from ever having, or going through the horrors of another war, either foreign or otherwise. I am proud of these young men. I am proud of this country, and I believe that we should drop all this idea of being even-Stephen with anybody in the world - but better than anybody in the world in those respects, as we are in most other respects.

This, I understand, is the smallest class ever graduated from Kelly Field. I don't believe that that is a handicap to this class nor any reflection upon it or previous classes. I have been told that what you lack in quantity you make up in quality. I am told that the standard and standing of this class is far up as compared with the others; that it ranks equally as well as any class that has ever preceded it. I am happy to say that you are going out into the service now to continue the fine traditions of the Air Corps. I am happy to say that I believe, following this, there will be an increasing number of young men to come to this standard, because I feel that America is waking up to the idea along the lines I have just been talking about; that America should have the best. And I believe that the immediately succeding years will see the Air Corps better supported by our government than it has been in the last few years. Of course, there has been an immense improvement in the last four or five years. That improvement is not enough, and it is nothing compared to what it will be in the next few years.

I am told that you gentlemen in this graduating class are excellent flyers, excellent pilots, excellent observers; that there are few, if anything, that you can add in the way of handling ships of the type you have been handling. You are getting a diploma, a certificate, today, but I believe with all of that that you, and each of you, will need to realize that you are like the high school graduate in this air game that moves so fast; so many new things all the time. The next class will have things that you haven't had the benefit of; changing types of planes and auxiliaries of all kinds. In fact, I believe you realize that you are like the high school graduate - that you haven't got an education yet, tut you have just got the basis upon which an education can be built.

Talking with one of the senior officers this morning about the graduating class, he said that life in the Army is a continuous graduating class. I have graduated from school after school. Well it is like that in civil life. Each point we reach is simply a basis and a foundation for education, and further education and training along the lines of our vocation or our avocation. So I charge you young men out of an abundance of experience, out of many years of life -that you are in a place that requires you to continue your education. If you do not, you will be like the high school graduate who stops there - everything else moves on - everyone else adds to his education and does not stand still. If you stand still, you are going back. The new things of today will be old next year and abandoned like many of the planes you are flying today. Next year they will be abandoned.

I charge you to keep up that high purpose in life and continue to make yourself and your service more and more valuable to your country in what I consider now tho one arm or branch of the service that is most important- if one can be considered more important than another; if you can say that a catcher is more important than a first baseman; that a pitcher is more important than a catcher. Then I say that you,who are in the most important branch of our service today, keep it up and continue your progress."

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During January, the Engineering Department of the San Antonio Air Depot overhauled 17 planes and 67 engines and repaired 22 planes and 16 engines.

PROMOTION OF NONCOMMISSIONED OFFICERS

A list is given below of Staff Sergeants placed in the order of their standing on the eligible list for promotion to the grade of Technical Sergeant, Air Corps, effective January 1, 1937. This list contains only the first 250 names on the qualified list.

No.	Name	No.	Name	No.	Name
1	Zinkann, Charles*	65	Brocks, Alfred A.	129	Norich, Albert I.
2	Eaton, James H.*	66	Simpson, Walter	130	Smith, Anthony
3	Hayes, Henry G.	67	Malkemus, George D.	131	Aldrich, Guy A.
4	Howard, John	68	Rubby, Louis	132	Moore, John H.
5	Bauer, Joseph	69	Boudreaux, Henry D.	133	Deming, John B.
6	Donnelly, Frank A.	70	Monroy, Phillip D.	134	Worthen, Ray E.
7	Routt, Homer	71	Jernigan, William H.	135	Tuffly, Edward W.
8	Smith, Roscoe O.	72	Tucker, James R.	136	Morris, William C.
9	Fryor, John	73	Fagan, Luther W.	137	Dossett, Elbert
10	Maginness, James A.	74	Willett, Ray R.	138	Boyles, James H.
11	Levesque, Ernest	75	Greene, Robert H.	139	Sarem, Jack
12	Campbell, Walter H.	76	Williams, Leonard	140	Cheatham, Charles W.
13	Toohey, Thomas F.	77	Hurst, Frank	141	Kidd, Harvey O.
14	Birk, Frank J.	78	Paseman, Edwin	142	Fields, Wiley C.
15	Dodd, John C.	79	Darcy, Lawrence J.	143	Winfrey, Oliver A.
16	Silva, Louis T.	80	Steine, David	144	Ward, Walter M.
17	Gessula, Nissim	81	Mehnert, William	145	Hampton, Jack
18	Protivnak, Michael	82	Barker, Arthur C.	146	Senter, Herman F.
19	Passwaters, Francis M.	83	Antrim, Roland H.	147	Washburn, Emory E.
20	Crocker, John S.	84	Kramberg, Josehh	148	Gorman, Andrew J.
21	Balacke, Harry	85	Skelton, Edward F.	149	Benevides, Joseph H.
22	Halsey, Andrew J.	86	Alexander, Houston	150	Froberg, George W.
23	Wildman, Armstead A.	87	Hicks, Harry	151	Eanes, Louis V.
24	Capps, Dwight M.	88	Sloan, Miles B.	152	Jensen, Oluf T.
25	Haga, Fred M.	89	Carter, Lloyd	153	Ross, Delano W.
26	Rice, Robert E.	90	Blesh, Earl S.	154	Wheeless, John A.
27	McGraw, Mathew A.	91	Brucher, Martin	155	Eldridge, Russell
28	Gorges, Anthony J.	92	Bright, Clarence E.	156	Leonard, Dale F.
29	Gilbert, Claude M.	93	Fisher, Elmer H.	157	Hansen, Henry P.
30	Kerr, Raymond	94	Simmons, Joel A.	158	Schultz, Steve J.
31	Hoober, Asa C.	95	Masterson, John A.	159	Chaudron, Norvelle
32	Shaw, Carrell L.	96	Benson, Harold P.	160	Hammack, Robert W.
33	Carr, Edward L.	97	Lazor, Thomas	161	Garduque, Gabriel
34	Joyner, Charles	98	Dearborn, James E.	162	Bathey, George H.
35	Roziburski, Michael M.	99	Nipper, Eli H.	163	Martini, Henry
36	Cheatham, Roy D.	100	Armstrong, Chester A.	164	Kannelt, Harold B.
37	Roeske, Myron	101	McClellan, Edwin J.	165	Yeager, Adolph C.
38	Franklin, Henry L.	102	Whitaker, Gerald G.	166	Carr, George W.
39	Johnson, Karl R.	103	Weltz, William M.	167	Anderson, Chauncey L.
40	Rowen, Halstead J.	104	Dambroso, Tony	168	Criss, Karl W.
41	Sheffield, William K.	105	Marshall, John A.	169	Witwicki, Kazimir M.A.
42	Fuecker, Harry N.	106	Davis, Golden R.	170	Mickey, Everett
43	Vielock, Adam J.	107	Bennett, Paul D.	171	Huffman, Ernest J.
44	Lash, Paul	108	Fredericks, Joseph M.	172	Burton, Jack
45	McConnell, Jessy C.	109	Seguine, Cecil C.	173	Tormey, Thomas P.
46	Oram, George H.	110	Silva, Manuel	174	Fields, Clarence D.
47	Williams, John M.	111	Flower, Abraham	175	MacDermott, William K.
48	Brown, Jacob S.	112	Platt, Graham	176	Schuette, Alfred A.
49	Falls, Clyde L.	113	Brown, Walter D.	177	Weiss, Joseph
50	Gardner, Edgar W.	114	Carlow, Harold F.	178	Riviere, Jean E.
51	Kacziba, Alexander	115	Jones, Thomas A.	179	Reilly, Patrick D.
52	Barlow, Robert L.	116	Kievet, Anthony	180	Chovenitz, Frank J.
53	Moss, Grover C.	117	Henry, William F.	181	Caris, John A.
54	Schantel, August	118	Pruitt, Cecil	182	Hoekstra, Robert
55	Caldwell, James M.	119	Barnhart, Lawrence E.	183	Peterson, Cayus P.
56	Kirby, Louis A.	120	Martin, Morris	184	Ward, Leland S.
57	Langston, Wilbur E.	121	Simpson, Dewey H.	185	Weeks, Alvin C.
58	Chuturich, Michael	122	Hoppe, Helmar B.	186	Jolly, Arthur
59	Gorin, Maurice	123	Barkhurst, Frank M.	187	McKown, Floyd F.
60	Hunt, Homer H.	124	Laquatra, Leo	188	Dooney, John J.
61	Peacock, Floyd H.	125	Hygh, Relliford	189	Walsh, Bernard A.
62	Elder, James C.	126	Mondt, Howard	190	McGhee, Lester L.
63	Morris, Reuben B.	127	Wetzorke, Bruno	191	Norris, Walker W.
64	Hoffman, Leonard L.	128	Gurley, Bert E.	192	Newland, Gus V.

*Appointed Technical Sergeant since January 1, 1937

193 Hagan, George M.
194 Warren, Henry M.
195 Shellhorn, Edward
196 Ray, Floyd F.
197 Terrell, Harry A.
198 Gregg, Emmett L.
199 Meeks, John D.
200 Harth, George J.
201 Brock, Norris
202 Bisbal, Germain A.
203 Goulla, Jack
204 Novak, Louis W.
205 Boyles, George D.
206 Gutierrez, Arnoldo
207 Charbaugh, Michael E.
208 Carr, James W.
209 Martin, Paul H.
210 Hodges, Herbert P.
211 Beckham, Reuben S.
212 DeFord, Lyman
213 Smith, Sigsbee J.
214 Delaney, Samuel J.
215 Castlemaine, Karl W.
216 Chestnutt, Herman L.
217 Vidmar, Frank
218 Parnes, Max
219 Morrison, Jay P.
220 Armbruster, Otto
221 Tetu, Dona E.
222 Bishop, Chalmers N.
223 West, Henry L.
224 Simpson, Johnie S.
225 Flores, Alberto
226 Peluso, Tony J.
227 Bryan, Hugh
228 McLish, William B.
229 Ferguson, Homer E.
230 Slattery, Houston
231 Lawson, Lane L.
232 Mishmash, Charles J.
233 Milliard, Peter L.
234 Hall, Bolton
235 Kolb, Peter, Jr.
236 Hunsberger, Horace K.
237 Collins, Jacob
238 Mobley, Emmett A.
239 Martin, Troy V.
240 Jones, George S.
241 Dwyer, Charles L.
242 Laza, Joseph C.
243 Klapak, Andy
244 Podraza, Walter H.
245 Pond, Everett L.
246 Williamson, Henry
247 Fajnik, Nicholas
248 Hadley, Frank E.
249 Ciphon, Paul W.
250 Anning, Richard S.

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CORRECTIONS IN MASTER SERGEANT ELIGIBLE LIST

In the list of noncommissioned officers qualified for appointment to Master Sergeant, Air Corps, published in the issue of the News Letter of February 1, 1937, the name of Technical Sergeant Thomas V. Burns was inadvertently omitted. He is No. 46 on the qualified list, as of January 1, 1937, and No. 44 on said list as of February 28th, by reason of two promotions having been made. Sergeant Burns' position is between Technical Sergeants Walters and Stoser.

Technical Sergeant Donald P. Herb is shown as No. 80 on the Master Sergeant qualified list. His correct position is No. 85, between Technical Sergeants George D. McCartney and James G. Blais.

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WARRANT OFFICER APPOINTMENTS

The following-named Master Sergeants of the Air Corps have been appointed Warrant Officers, U.S. Army, effective March 1, 1937, they having been discharged from their present grade on February 28 1937:

Ezra F. Nendell, Randolph Field, 30 years' service.

Daniel W. Fraley, Hawaiian Department, over 28 years' service.

William Arnold, Langley Field, Va., over 27 years' service.

John J. Arsenault, Scott Field, Ill., over 27 years' service.

Harry Rose, Langley Field, Va., over 25 years' service.

Joseph Pirisky, Panama Canal Department, over 25 years' service.

These appointments will create vacancies in both Master Sergeant and Technical Sergeant grades in the Air Corps on March 1, 1937.

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PROMOTIONS TO MASTER SERGEANT

The following noncommissioned officers of the Air Corps were promoted to the grade of Master Sergeant, Air Corps, effective March 1, 1937:

1st Sergeant Michael Binder, 11th Bombardment Squadron, Hamilton Field, Calif., transferred to 15th Obs. Squadron, Scott Field, Ill.

Tech. Sergeant Aaron J. Sanders, 12th Air Base Squadron, Kelly Field; to be carried on detached service at Kelly Field pending further orders.

1st Sergeant Wardell L. Mathews, 44th Observation Squadron, transferred to 7th Observation Squadron, Panama Canal Department.

Tech. Sergeant James D. O'Donnell, 91st School Squadron, Maxwell Field, Ala.; to remain on detached service at Maxwell Field until further orders.

Tech. Sergeant Ray Francisco, 62nd School Squadron, Kelly Field, where he remains on detached service until further orders.

Tech. Sergeant Joseph Bohrat, 30th Bombardment Squadron, March Field, Calif., to 50th Observation Squadron, Hawaiian Department.

Tech. Sergeant Alfred Bernier, 52nd School Squadron, Randolph Field, Texas, to fill vacancy in that organization caused by promotion of Master Sergeant Nendell to Warrant Officer.

Promotions to Technical Sergeant

Staff Sgt. Henry G. Hayes, 91st Observation Squadron, Fort Lewis, Wash.; to remain on detached service at that station until further orders.

Staff Sgt. John Howard, 47th School Squadron, Randolph Field, Texas; to remain on detached service at that station until further orders.

Staff Sgt. Joseph Bauer, 27th Pursuit Squadron, Selfridge Field, Mich.; to Maxwell Field, Ala., where he is to be carried on detached service until further orders.

Staff Sgt. Frank A. Donnelly, 7th Observation Squadron, Panama Canal Department, where he is to be carried on detached service until further orders.

Staff Sgt. Homer Routt, 46th School Squadron, Randolph Field, Texas, where he is to be carried on detached service until further orders.

Staff Sergeant Roscoe O. Smith, 52nd School Squadron, Randolph Field, Texas, to vacancy in that organization caused by the promotion of Technical Sergeant Bernier to Master Sergeant.

"SHOOTING" THE FLOOD

BY the Bolling Field Correspondent

"I have photographed other floods and disasters which covered more area, such as the Susquehana and Johnstown Rivers floods in 1936 and the Mississippi flood in 1927, on which we worked some eight weeks, but never have I seen one causing the complete evacuation of cities the size of Paducah, Ky.,nor any other causing the enormous damage to life and property as this one has wrought."

The speaker was Captain H.K. Baisley, Air Corps, commanding the 20th Photo Section, stationed at Bolling Field, D.C., upon his return from a photographic mission in the stricken area.

From January 27th to February 6,1937, Captain Baisley, accompanied by Master Sgt. Andrew E. Matos, 20th Photo Section, piloted a Fairchild C-8, photographic airplane over the flooded district. They flew a total of forty-one hours, covering over 3900 square miles in thirteen separate flights,"shooting" continuously from morning till night vertical and oblique views of the flood crest in order to determine the area covered by water and the "high water marks" from Beaver, Pa. to Cairo, Ill.

Capt. Paul I. Cullen, Air Corps, also flying a C-8 Fairchild, with crew from Mitchel Field, was on the same mission, and the Army airmen worked almost unceasingly to accomplish their detail. Flying at from eight to ten thousand feet, according to the weather flying conditions, vertical views were taken and, despite rain, snow and overcast skies, Captain Baisley reports exceptional success with the somewhat over five thousand exposures he took.

The standard aerial film (type 1A, Class A) was used in the three T3A cameras for vertical, and the K3B camera for obliques, proving the rapid strides in photographic progress in late years. Captain Baisley stated that a few years ago such a mission could not have been so successfully accomplished.

On one occasion Captain Baisley and Sergeant Matos flew for ten hours, finally landing at about 10:45 P.M.,after taking pictures all day. Through the use of his two-way radio equipment, the Captain had obtained permission from the Chief of the Materiel Division at Wright Field, under whose orders he was performing, to gas up and lunch at Scott Field, Illinois, the nearest safe field in the territory being surveyed at that time. This radio communication thus saved many valuable hours which were used to advantage in photographic work.

Realizing that a T3A camera cannot be reloaded while the plane is in the air and appreciating the difficulty and time lost in locating safe landing fields,the two airplanes each carried three T3A's, using multiple lenses. These cameras were loaded and put aboard the planes, one in the camera mount and the other two "standing by". Once in the air, with Captain Baisley at the stick,Sergeant Matos began shooting and, as soon as all the film was used in one camera, he would slide another T3A into the mount and continue taking pictures.

It can be readily appreciated that maneuvering a 135-pound camera while in flight is no mean task, but the time saved by this method proved invaluable. "In fact", Captain Baisley stated, "it became a question of which supply would become exhausted first - our gasoline or film." By this method two airplanes accompanied a mission which would ordinarily require six.

The procurement of the required 87 octane gas for the plane was at times difficult, and on one occasion only 70 octane gas was available at Vincennes, Ind. This fuel was so full of rubber particles and other foreign matter that the strainers soon became clogged,causing the engine to miss badly and necessitating a forced landing at Sullivan, Indiana. Although the field was half under water and without landing lights, a successful landing was effected and word sent to Wright Field. Here again the two-way radio proved its worth. From Terre Haute, Indiana, a supply of good gas was obtained and the mission carried on.

Captain Baisley has had over ten years' experience in photographic work, having graduated from the Photographic School in 1926. He has been stationed at Bolling Field for the past two and one-half years. Sergeant Matos came to Bolling in 1920, entering photographic work and remaining in that capacity ever since.

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NEW TYPE AIR SPEED INDICATORS

When the newly constructed Control Tower is placed in operation at Bolling Field early in March,it will be equipped with the "last word" in weather instruments. These include a Velocity Transmitter and Indicator. The transmitter is a magneto generator of the tachometer type, to which is fastened a set of anemometer cups. It is known as the Weston Voltmeter, calibrated in miles per hour for direct reading. No outside current is needed, as the magneto furnishes its own as the wind turns the cups.

The direction unit is composed of a Selsyn motor, to which is connected a three-foot wind vane and a dial showing degrees of the compass and the cardinal

and semi-cardinal points. The pointer on the dial is operated by another Selsyn motor which is in synchronization with the one in the transmitter. With the movement of the transmitting motor, the indicating motor turns the pointer on the dial. For the direction unit, 110 volt, 60 cycle AC current is needed. The two indicators are mounted in a compact panel, about 12 by 18 inches.

It is believed that this is the first of this type of instrument to be placed in service with the Army, particularly the direction unit. One or more of the velocity units have been installed at Langley Field and Bolling Field for some time.

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BOLLING FIELD OFFICER MAROONED BY FLOOD

An unexpected "box seat" view of the flood stricken area in the mid-west was obtained recently by 1st Lieut. William E. Hall, Air Corps, stationed at Bolling Field, D.C.

While making an extended navigation flight, Lt. Hall stopped one night at the field at Blytheville, Arkansas. The next morning when he arrived at the field to take off on his return to Bolling he found his P-12-E airplane hopelessly mired in the mud and high waters of the flood.

It was thirteen days before Lieut. Hall could get his ship into condition for flying, and much anxiety for his personal safety was felt at Bolling until word came that he himself was "high and dry".

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THE STUDENT MAINTENANCE NAVIGATION FLIGHT

By the News Letter Correspondent

Students of the Advanced Flying School participating in the pre-graduation maintenance navigation flight, taking an entirely new route, left Kelly Field Feb. 3d and returned Feb. 11th.

The flight was successful from the very beginning. Bad weather was encountered during the first hour out of Kelly, but after that excellent flying conditions prevailed, with the exception of one day at Maxwell Field, which delayed the flight. The weather was very cold, especially at Athens, Georgia, where batteries were insufficient even to budge the propellers. Everybody with whom we came in contact seemed keenly interested in aviation and as to the purpose of the flight. This interest was evidenced not only by military personnel at the various colleges, but by the presidents of these institutions and faculty members. At each college, those who were interested in aviation had everything explained to them. The Flying Cadets were all entertained by the fraternities at the various colleges. The largest crowd was at the University of Alabama, where 300 ROTC cadets showed up en masse and asked questions about aviation. Other universities visited were Georgia Tech, Alabama Polytechnic, University of Georgia and Louisiana State. Landing fields were generally crowded with spectators, both on the arrival and departure of planes. Not a single forced landing or trouble of any kind was experienced by the student flyers. It is believed that a great deal was learned and accomplished on the trip and that in future similar trips with instructors will be made at the end of each class.

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77TH PURSUIT HAS EXCELLENT MESS

Without a mess of its own for over a year and a half, the 77th Pursuit Squadron, Barksdale Field, La., begun a mess on December 11th. To date, with a daily average strength of forty rations, the mess has managed affairs satisfactorily, and it is the boast of every member of the squadron that it is the best on the Field. Lt. Desmond as Mess Officer, aided by Mess Sergeant Cantrell and cooks Doughty, Flynt, and Hanes established an enviable record for mess management.

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WEATHER AIDS TRAINING PROGRAM IN HAWAII

The month of January in the Hawaiian Islands was characterized by calm weather, clear skies and cloudless nights, including a week of limpid tropical moonlight. In consequence of these inspiring conditions, the units of the 5th Composite Group at Luke Field, T.H., achieved substantial progress toward the completion of the annual training program.

Emphasis was placed on navigation and photography in the Observation (Reconnaissance) Squadrons, while each of the Bombardment Squadrons completed one of their periodic tours of the Islands, the local substitute for the 500-mile cross-country flight required on the mainland. Night Flying received special attention by all units.

Among the more interesting photographic projects completed or still in progress are: a mosaic of the mountains and valleys of eastern Molokai in connection with a study of the water shed of the island; vertical and oblique photographs of the work now in progress in enlarging the airports on the outlying islands, and a special mission to obtain photographs for historical records of the Heiau at Napoopoo, Hawaii. (For the benefit of those unfamiliar with Hawaii, a Heiau is an ancient Hawaiian temple, the remains of many of which are visible about the islands.)

MISSOURI NATIONAL GUARD AIRMEN IN FLOOD RELIEF WORK

By the News Letter Correspondent

The part played by the Missouri National Guard Aviation in the flood crisis in Southeastern Missouri is a very good example of one of the many emergencies where aviation may be called upon to render service available from no other source.

On Saturday, January 23,1937,two planes of the 35th Division Aviation,Missouri National Guard, were ordered to Sikeston, Missouri, for flood relief work. Arriving just before noon, the airmen reported ready for service to Captain Shephard of the Missouri State Highway Patrol with whom the detachment was to cooperate. The danger area, as set forth by Captain Shephard, was bounded by the untried setback levee built in almost a straight line from Birds Point on the North to New Madrid on the South, and by the old levee that followed the course of the Mississippi River between these points. This is an arc 35 miles long and varies from 3 miles wide, to 18 miles at its widest point. Several hundred families made their homes in this area. Most of these houses were widely separated, some being miles from their nearest neighbor. General Lewis M. Means,The Adjutant General of Missouri, arrived in a third plane to take personal command of the situation.

The first day of this ten-day detail was spent patrolling the outer levee between Birds Point, across the river from Cairo, Illinois, and New Madrid, and dropping warnings to the population in the danger area. The area between the levees was in immediate danger of being flooded, and it was to be the job of the aviation to cooperate with the State Highway Patrol and other ground forces to warn the populace in the area of the impending danger and to eliminate, as far as possible, the loss of life.

As the water was already very near the top of the old levee and still rising, it was necessary that everyone within this area be warned of the flood that was sure to come. For this purpose,mimeographed copies of the warning were placed in paper sacks, weighted with stones, fastened with yellow cotton streamers, and dropped to everyone that could be seen from the planes. Two-way radio contact was established and kept at all times with the State Highway Patrol Headquarters through W9VDG and W9VID amateur radio operators in Sikeston. Two commercial radio receivers were installed at State Patrol Headquarters, one tuned to the airplane frequency and the other to the ground station frequency. The ground station had direct phone connection with the Headquarters, and in this manner orders and reports were received and acknowledged practically as fast as if the transmitter were located at the Headquarters on the ground.

Early on Monday, January 25th, the first breaks in the leavee were reported by radio in a plane from Birds Point. In rapid succession, breaks along this section of the lovee were reported by radio. The river was going over the top of the levee in a dozen places and already houses and barns near the breaks were being broken to pieces and washed away. As the floodway between the levees filled, boat stations were established along the set-back levee and State Patrolmen were stationed at these points with their radio-equipped cars. Reports of people in distress were given by radio from the plane directly to these Patrolmen, who would immediately dispatch boats to the aid of the marooned people. Often it was necessary for the planes to direct the boats around woods or through ice.

On Wednesday morning,two planes took the air systematically to check every house located in the floodway. This was found to be the only practical method to make sure no one was left in need of aid. This took all day Wednesday and part of the next morning. Water was backing up behind the setback levee North of New Madrid, and this area now called for considerable reconnaissance. Though there was very little or no current in this backwater it was spreading more and more every hour, and houses were being filled to the second floor. This water had covered miles of farm land behind the levee and another boat station was necessary to send boats to these homes and remove the people.

On Thursday, Governor Lloyd C.Stark, of Missouri, was flown to Sikeston in one of the Missouri National Guard planes to view the flooded area. After inspecting the entire flooded district by air, he inspected the emergency relief headquarters. He was accompanied on this aerial inspection by General Means in the second Missouri National Guard plane. It was on this tour of inspection that one family and several children were located in the flooded area and a radio request for aid was immediately dispatched by the pilot of one of the planes.

This tour of duty lasted ten days and 114 hours were flown in patrolling the levees in reconnaissance and photo work.

The detachment was under the command of Captain Eric H. Kaeppel and included Lieutenants Ray H. Kutterer, Cloon E. Freeman, Kenneth R. Case, James H. Higgs, Sergeants Arthur P. Rethemeyer, William T. Rainey, Francis B. Grothe, William A. Brazill, and Vernon C. Wallach. The Experience encountered on this occasion will be long remembered by those who took part in the work.

The presence of airplanes to aid the ground forces made it possible to save scores of lives of people, whom it would otherwise have been impossible to locate. Certainly the value of observation aviation in this type of work has been definitely established.

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FOILED BY THE INAUGURAL WEATHER

Several million radio listeners failed to hear any mention of the participation of the 20th Pursuit Group in the recent Inauguration Ceremonies for President Franklin D. Roosevelt. Investigation disclosed that this failure was due to the fact that the 20th Pursuit Group, thirty-three airplanes of which left Barksdale Field on Saturday, January 16, for Washington, to take part in the exercises, failed to get any farther than Atlanta, Georgia.

Led by Major Armin F. Herold, Group Commander, and Headquarters Flight, the three squadrons took off on extremely short notice in an effort to beat unfavorable weather conditions to Maxwell Field, Montgomery, Alabama. The "hop" to Maxwell was made without incident, but at that point the Group was held up for two days on account of bad weather. Finally able to clear for Fort Bragg, North Carolina, on Monday, January 18th, the Group got as far as Atlanta, where, during a stop for servicing, the ceiling closed down and a hard rain set in. Zero-zero conditions prevailed until it was decided that it would be useless to attempt to reach Washington in time for the Inauguration. A majority of pilots seriously considered taking leave and going home via rail for the duration of the bad weather.

The ceiling finally lifted sufficiently to enable the Group to take off for Maxwell on the return trip on January 19th. At this station it was found impossible to proceed more than a few miles in the direction of Barksdale Field, and while grounded there the Group was joined by the 3d Attack Group, which was en route home from Langley, their farthest point on the same hop. On Monday, January 20th, conditions improved sufficiently to allow a take-off for points West, and the two Groups cleared the airdrome on the heels of a 43-ship flight of Marines, the Marines being passed before reaching Barksdale Field.

The efficient and hospitable manner in which Maxwell Field, with but a few hours' notice, took care of the personnel of the flight, both going and coming, and the manner in which Major Patrick's detachment in Atlanta provided for the comfort of the 20th Pursuit Group pilots at that station aroused much favorable comment, and all pilots join in a hearty vote of thanks to the responsible parties.

OLD-TIMER BEMOANS LACK OF ROMANCE IN AVIATION

Romance in aviation is gone and there is nothing left but a cold-blooded business proposition, was the opinion of Major Erik Henning Nelson, former army flyer and member of the Air Corps' Around-the-World Flight in 1924. He visited Kelly Field and recalled the old days of flying, with his old side-kick Major "Cliff" Nutt, and others. He also called on Colonels Krogstad and R.M. Jones, with whom he had been associated. Major Nelson left the army on July 1, 1928, and has been with the Boeing Airplane Company until a year ago. He is now in business for himself. A native of Stockholm, Sweden, he was born June 18, 1888, and came to the United States on April 15, 1909, as a sailor. Since that time his life has been full of the romance which he says has departed from modern military aviation. He served with the Air Corps 11 years, beginning his service in October, 1917. He had previously been interested in flying back in 1912 and received his training at Miami, Florida, where he also served as a mechanic. In 1924, he was selected as one of the pilots for the Army's Around-the-World Flight, which made aviation history.

Stationed at Kelly Field from Sept. 26, 1919 to May, 1921, Major Nelson and Major Nutt were at that time members of the First Bombardment Group, which was brought from Ellington Field, near Houston. Major Nelson was a member of the 20th Bombardment Squadron and Major Nutt of the 166th Bombardment Squadron. The latter unit has been placed on the inactive list. The next time Major Nelson was at Kelly Field was after the world flight. When that flight was made, Major Nutt was the advance agent in the Orient for the army flyers. Declaring that the best part of his life had been with the Air Corps, Major Nelson expressed regret over the passing of the old days of "Flying Jennies", when there was some doubt whether the flyer would return safely or be able to walk away from a plane. Although out of the service, he still keeps contacts with his friends in the army, which is one reason why he stopped off at Kelly Field, en route by auto from the West Coast to Miami and Key West, Fla. for a vacation. He commended the excellent roads between San Antonio and El Paso, which contrasted greatly to their condition when he was on duty with the border patrol.

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Officers promoted to the rank of Major (temporary) were Captains Delmar H. Dunton and Orvil A. Anderson from January 26th, and Emile T. Kennedy from February 1, 1937.

96TH BOMBARDMENT SQUADRON COMPLETES TRIP TO PANAMA AND RETURN

Thursday, February 11th, saw the completion of the longest over-water navigation mission yet performed by a formation of land planes. The 96th Bombardment Squadron, of the 2d Bombardment Group, GHQ Air Force, equipped with B-10B airplanes, made a trip from Langley Field, Va., to Albrook Field, Canal Zone and return; the flight taking off from Miami, Fla., to Panama, direct, and returning the same route.

The 96th Squadron was ordered to start this flight on February 5th, the itinerary being as follows:

Feb.5th - Langley Field to Miami,Fla.
Feb.6th - Miami,Fla.to Albrook Field,CZ
Feb.9th - Albrook Field,CZ.to Miami,Fla.
Feb.10th- Miami, Fla., to Langley Field

Prospects of bad weather caused the squadron to leave Langley Field on the afternoon of the 4th and proceed to Spartanburg, S.C., where it remained overnight. A terrific snowstorm was encountered near Charlotte, S.C., but the squadron closed in on Major McDuffie, the squadron commander, and plowed on through even though all pilots were flying blind at times.

The following day, February 5th, the squadron proceeded to the Municipal Airport, Miami, Fla., where all tanks were filled to the brim and the motors given a final check. Saturday morning, February 6th, the squadron cleared for Albrook Field, C.Z., and at 0807, started on the long over-water hop. Everything was functioning perfectly and the pilots and navigators had hardly gotten settled down to work when Cuba was sighted.

Due to high cloud formations, the squadron was at all times above 4,000 feet, and at one time had to go to 13,000 feet and fly over solid overcast for an hour, but they made the best use possible of their octants at this time. After approximately seven hours of flying, Major McDuffie took his squadron down through broken clouds and everyone breathed normally again, for there was Panama! The navigation had been successful, as Cristobal was in sight, just to the right.

The squadron landed at Albrook Field, where a royal welcome awaited them. However, every member of the flight was greatly fatigued and could not respond in the manner they would have liked.

Early Sunday morning the officers and men were at the hangars and, with the help of Albrook personnel, the planes were put in readiness to start the return trip by noon. However, the squadron was to remain until Tuesday, so Sunday afternoon and Monday were given over to sight-seeing and shopping. The Carnival season was on, and the gayety was so contagious that everyone was ready to stay over several more days.

Tuesday morning saw the B-10B's loaded to go, and the squadron took off at 0740. Albrook Field with its surrounding hills is none to large for heavily loaded bombers, but they all got off safely, and at 0811 they left Colon and started the long trek back to the United States.

Winds slowed down the progress of the flight all of the way to Cuba. At one time it measured 37 knots and was coming from 45 degrees off the nose. Also, low clouds were encountered and the formation stayed close to the water. In the middle of the Caribbean, the squadron had its most exciting moment.

Captain Cousland, leading "B" Flight, suddenly called over his radio,"Motor Failure!" His left engine died without a cough, when it was over 200 miles to the nearest land. Captain Cousland immediately set his plane for flight on the right engine but, due to the low altitude, the right engine started heating, and it was evident that land could not be reached. Two planes were left to stay with the cripple and the OA-5 notified. The plan was for the OA-5, being slower, to precede the squadron, so that the squadron would pass it in the middle of the Caribbean. Due to accurate navigation, the OA-5 was in sight at this time, but it is doubtful if it could have landed in the mountainous seas. After several minutes of rest, and with the water only 600 feet below the plane, the left engine began running again, and the Caribbean was cheated out of one B-10B airplane. Lt. Gibbs,the navigator in this ship, reset his course and the squadron was soon overtaken.

The squadron landed at Miami at 1544, thus establishing the feasibility of the Canal Zone being defended by air units from the U.S.,upon short notice. Although careful preparation was made for this flight, one scheduled plane was out two hours before the take-off from Langley. Another plane was wheeled out and made the trip successfully.

Due to bad weather, the squadron remained one day in Miami on the return trip and on Thursday bucked a 30-knot wind back to Langley Field. Langley looked mighty good to all the tired officers and men in the flight, and everyone seemed glad to be home again.

The OA-5 accompanied the flight for rescue purposes and successfully completed the trip on schedule. Corp.Miner had to remain in Miami as he broke his hand when the anchor davit gave way as they were anchoring the ship. The accuracy of the navigation is shown by the fact that the OA-5 was sighted each time the squadron passed it en route.

(Continued on page 23)

BROOKS FIELD RESPONDS TO THE MERCY CALL

As soon as it was learned that the army would assist in the contemplated evacuation of flood victims along the Mississippi Valley, the Commanding Officer called a conference and relayed this information to his staff officers and organization commanders. They were directed to have detailed plans ready for a conference the following day.

At this conference, the entire plan was decided upon and definite arrangements were made for every detail. One plane had already been sent to Louisville with serum for the flood suffers.

Tests of the loading of trucks for the ground echelon were conducted, and the full number of trucks needed were designated. These trucks were then loaded, and the enlisted men who were to form the ground echelon were notified to be on the alert and to be ready to leave on a moment's notice. Results of the tests showed that the ground echelon could leave Brooks Field in two and one-half hours at the maximum.

Airplanes were loaded and ready to leave whenever the word came. Only local flying was to be engaged in.

Up to this writing, a total of 118 hours were flown by planes from Brooks Field engaged in the relief work. These planes have been AC-33 transport, O-43A Observation airplanes, and the Fairchild photo plane. The photographic plane is now engaged in missions at Vicksburg in connection with this work.

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96TH'S TRIP TO PANAMA

(Continued from page 22)

On the return trip, Cuba was touched within six miles of the correct course.

We all congratulate the officers and men of the 96th Squadron on a mission well done.

The following is a list of the personnel who made this flight:

Major Jasper K. McDuffie, Captains A.Y. Smith, Richard E. Nugent, C.V. Cousland, 1st Lieuts. David R. Gibbs, Frederic E. Glantzberg, Warren H. Higgins, Edwin L. Tucker, William A. Matheny, Douglas M. Kilpatrick, Paul G. Miller, Gerald E. Williams, Torgils G. Wold, Edwin G. Simenson, Clifford H. Rees, Eugene P. Mussett; 2d Lieut. Burton W. Armstrong, Air Corps, and 2d Lieuts. Herbert Morgan, Jr., John L. Templeton, John B. Montgomery, Raymond V. Schwanbeck and Arthur H. Rogers, Air Reserve.

Enlisted men - Staff Sgts. Donald E. Hamilton, Ralph R. Illick, George E. Wilson, August W. Keuhl, John B. Long, Walter B. Buff, Frank J. Seidl, Jack A. Franke; Corporals - Thomas G. Holmes, Gib Bradley, Lewis Hayduke, Ralph A. Miner; Privates, 1st Cl.- William A. Withers, Amil A. Mallada, Francis T. Harrington, Russell E. Junior, Lewis D. Smith, Clarence D. Lake; Privates - Charles Horstkamp, Edward Ellis and Harry O. Johnson.

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POSTHUMOUS AWARD OF THE D.F.C.

The Distinguished Flying Cross, posthumously awarded Captain Donald W. Buckman, Air Corps, who died in 1935, was presented to his widow, Mrs. Madeline Stone Buckman, at 10:00 o'clock on Wednesday morning, February 10th. The presentation was made by Brig. General James E. Chaney, Commandant of the Air Corps Training Center, in the Training Center Headquarters at Randolph Field.

The heroism of Captain Buckman which brought about the award occurred in November 1935. Stricken with a heart attack while flying a Transport plane with three passengers over Tehachati Pass, Calif., he managed to remain at the controls for 20 minutes until he landed the plane safely at Kern Airport, Bakersfield, Calif. He collapsed immediately after the plane landed and died within a few minutes.

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AIR CORPS EXHIBIT FOR NATIONAL AVIATION SHOW

The U.S. Army Air Corps was represented at the National Aviation Show by an exhibit composed of both old and new aeronautical items, demonstrating the progress in aviation through the years. A new Seversky Basic Training plane, a two-place, low-wing monoplane of all-metal construction of the latest type, incorporating instrument landing equipment, and having split flaps, was of leading interest.

A Diorama in miniature of a fog enshrouded landing field over which two small airplanes fly was displayed. These airplanes tune in with radio guiding stations, and with this aid glide safely down upon the landing field runway before the hangars. These little planes illustrate better than words the manner in which the instrument landing system is employed.

In this connection, the Original Instrument Board from the airplane in which Capt. Hegenberger made the first solo instrument landing in history, was shown, together with pictorial displays illustrating stages of instrument flying development, and Captain Hegenberger receiving the Collier Trophy at the hands of President Roosevelt.

Another pictorial exhibit of interest was devoted to Parachutes, and illustrated various types of chutes and methods of packing and jumping from an airplane.

A case of Aircraft Models made to 1/4C-scale and covering various types of planes, from the wartime "Jenny" and DH-4 to the latest Boeing Bomber, attracted much attention.

A Motion Picture depicted aviation development and historical progress from the Wright's first flight.

Two cases of newest Navigation and Engine

Instruments emphasized changes made since the 1918 instrument board, with its older protruding instruments, was in use.

An old type of Wooden Propeller was seen in contrast with the latest hollow steel controllable pitch propeller. There were mounted wing sections for those interested in aircraft structures. This is but a partial list of the exhibits which formed a display interesting and informative for an air-minded public.

Four representatives were sent to New York from the Materiel Division to take charge of the exhibit, namely, Messrs. S.G. Somers, F.S. Fisher, W.J. Selleck and Robert Fitzgerald. The hours were from eleven a.m. to eleven p.m., and a constant stream of visitors attested to the public interest aroused. The Chief of the Air Corps was one of a long list of prominent visitors who gave whole hearted approval of the display.

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WAR DEPARTMENT ORDERS

Changes of Station: To Randolph Field, Tex: Lieut. Colonel Albert M. Guidera (Major) from Langley Field, Va., for duty at Air Corps Training Center.

To Scott Field, Ill.: 1st Lieut. William J. Bell, from Selfridge Field, Mich.

To West Point, N.Y.: 1st Lieut. Charles F. Born, from Hawaiian Department, for duty at the U.S. Military Academy. Previous orders in his case amended.

To Santa Monica, Calif.: 1st Lieut. Daniel B. White, from Wright Field, for duty as Air Corps Representative at the plant of Douglass Co.

To Panama Canal Dept.: 2nd Lieut. Lawrence W. Greenback, from Langley Field, Va.

To Maxwell Field, Ala., for duty on the Staff and Faculty of the Air Corps Tactical School: Majors John E. Upston and Harlan W. Holden (Captains), Captains Robert C. Oliver, Ralph A. Snavely and Augustine F. Shea.

To Wright Field, Chic: 1st Lieut. Charles G. Williamson, from Hamilton Field, and to report not later than August 1, 1937, for duty as student at Air Corps Engineering School.

PROMOTIONS: To Colonel: Colonel John F.Curry (temporary) from December 23, 1936; Brigadier General James E. Chaney (Lieut. Colonel), from December 24, 1936. To Lieut. Colonel: Lieut. Colonel Ralph P. Cousins (Major) from December 22, 1936; Lieut. Colonel Adlai H. Gilkeson (Major) from December 24, 1936.

RETIREMENTS: Captain Albert F. Glenn, February 28, 1937, for disability incident to the service; Staff Sergeant James J. Geraghty, 8th Air Base Squadron, Brooks Field, Feb.28, 1937.

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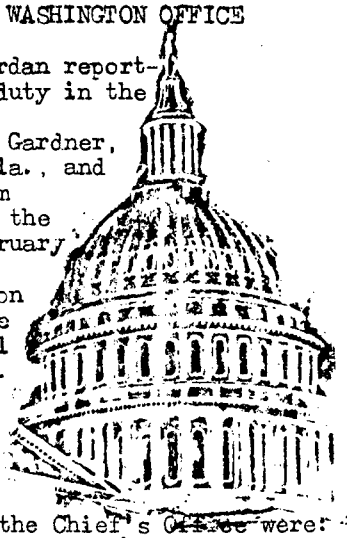
The War Department announced on February 25th the purchase from the Sikorski Aircraft Division of the United Aircraft Corporation of Bridgeport, Conn., of 5 large Amphibian planes and spare parts equivalent to one complete amphibian plane, for the sum of $633,898.

To adapt these planes for military purposes, the commercial design has been modified. The wing span is slightly in excess of 85 feet. The planes are powered with two 750 h.p. engines.

NOTES FROM THE WASHINGTON OFFICE



Captain James B. Jordan reported February 11th for duty in the Supply Division.

Majors Grandison G. Gardner, from Maxwell Field, Ala., and Bennett E. Myers, from Wright Field, were in the Chief's Office on February 24th for conference.

Officers departing on leaves of absence were Major Charles Y.Banfil and Captain Stewart W. Towle.

Lieut. Colonels H H. Young and G. E. Brower returned from leave, February 17th.

Recent visitors to the Chief's Office were: Captain George H. Steel, from Kelly Field,and Captain George A. Whatley, also from that field, both on a ferry trip to Mitchel Field, N.Y.; Captain Claire Stroh, Instructor, National Guard, Little Rock, Ark., while on a ferry trip from Santa Monica, Calif.,to Baltimore,Md.; 1st Lieut. B.G. Scott, from Kelly Field, while on leave; Colonel Frank M. Kennedy, from Scott Field; Captain Archibald Y. Smith from Langley Field; 1st Lieut. Ralph O. Brownfield, from Scott Field; 1st Lieut. August W. Kissner from Kelly Field and 1st Lieut. Gabriel P. Disosway from Barksdale Field, during the course of navigation flights.

Officers who returned to their home stations after a visit to the Chief's Office were Capt. Carl B. McDaniel and 1st Lieut. Ivan M. Palmer to Randolph Field.

Major Alfred W. Marriner returned from Wright Field and Captain Mervin E. Gross returned from a ferry trip to the West Coast.

Major Lowell H. Smith departed February 22nd on a navigation flight to Miami, Fla.

Captain Henry G. Woodward was a visitor from Wright Field, arriving February 22nd.

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A NEW WAY OF SENDING MESSAGES

Private W.S. Holloway, stationed at Phillips Field, Aberdeen Proving Ground, Md., in a recent communication, has this to say regarding a visit of Lieut. Nichols (dubbed the "Windmill Salesman" by virtue of his piloting an autogyro) who was "pxed" at the field on the teletype:

"I was standing in front of operations when he arrived. Seeing me, the Lieutenant hovered about three hundred feet in the air, leaned out and yelled - 'Hey, tell Operations that I am going on to Bollin.' Then he swung gracefully away and vanished.

I have been in the Air Corps quite a while and have never seen as novel a way of delivering a request for a message. Also I might say that Lieut. Nichols has been here in two of his "Jeeps," as he calls them, and he can make them do everything but talk and give milk."

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Barksdale Field, Shreveport, La.

The Officers' Club was the scene of a farewell party on the night of February 3rd, given by the 20th Pursuit Group for departing personnel, orders for whom had been received for the most part in the past few weeks.

Honor guests on this occasion were Lieut. and Mrs. T.H. Baxter and Lieut. D.T. Mitchell, who go to Panama; Lieuts. R.W. Puryear, M.I.Carter, D.C. Strother, R.O. Cork, J.P. McConnel, and their wives, all of whom will go to Hawaii, and Lieut. and Mrs. D.N. Motherwell, who go to the Philippine Islands. Orders were received the next day for the departure of Lieuts. P.R. Gowen and S.B. Mack, and their wives, and Lieut. G.P. Disosway, to Panama, and for Lieut. H.R. Maddux, who will leave with his wife for Hawaii.

The Group regrets the departure of these officers and their wives. Some of these officers came here when Barksdale Field was first put into service in 1932. Plaques representing the Group Insignia, with the date of arrival for duty at Barksdale of each officer, were presented by the Group as tokens to the honor guests.

Although much time has been lost from flying during January, the 20th Pursuit Group is making good progress on the ground and in the air during the late winter period, and has accomplished a goodly portion of its work for the time, despite handicaps greater than ordinarily encountered. Ground target gunnery has been pushed through towards record firing on every fair day, and only a short period of time will be necessary to complete this training for the entire unit.

An auxiliary range is being constructed for practice firing, and it is expected that a reduction of some 25% in the time required for a squadron to complete its course will be accomplished with the use of the new range.

Ground personnel of the squadrons are utilizing non-flying days for maintenance of the airdrome, and most of bad spots on the field have been filled and made safe for landing.

77th Pursuit Squadron: Gunnery progressed as per schedule, and all members of the Squadron who have finished qualified nicely. Squadron record has not yet been fired, but with what has gone before as an indication of what is to come, good scores are expected.

All firing has been done under adverse conditions. South and north winds have caused a great deal of trouble. Every effort was made to hold off as long as possible in hopes of better conditions - more favorable winds, but no such luck was forthcoming. Early morning found the winds as strong as did mid-day, and the late afternoon was no better.

The individual pilots of the Squadron are due a great deal of credit for the excellent records they have made and we hope, and expect, the Luke Trophy will have the name of the 77th Pursuit Squadron inscribed on its face after all the noise and popping of .30 and .50 caliber guns have died away.

20th Pursuit Group: Personnel of the Group, which is under the command of Major Armin F. Herold, are gradually dwindling towards an irreducible minimum with the arrival of orders sending men to foreign duty, and transfers to other branches. The shortage of airplanes, which has been acute in the past, is gradually becoming erased without the addition of new craft, and with the present rate of decrease in personnel, a quick return to the fabled good old days when each pilot had several airplanes to choose from is anticipated.

Since the previous report of the 20th Pursuit Group personnel leaving for foreign duty, 11 men have been lost to the organization. Orders were received sending Lieut. Clark N. Piper, Operations Officer of the 77th Pursuit Squadron, to Wright Field, and a shortage of pilots in the 3rd Attack Group made it necessary to transfer nine pilots from the 20th to the 3rd. This change, effective February 15th, took the following men away from Major Herold's command by selection, after a call for volunteers had failed to obtain any transfers: Lieuts. David G. Desmond, Willard J. Foley, John A. Way and Ashby H. Toulmin, Flying Cadets Howard L.Buller, Arch B. Campbell, Robert W. Fausel, Loring F. Stetson and Leonard M. Rohrbough.

The most recent shift in personnel leaves the 20th Pursuit Group with a strength of eight regular officers, exclusive of Headquarters, when all orders take effect. This number includes squadron commanders, and the total strength of the Group, counting all commissioned pilots, is now set at 40 pilots, including one on D.S. at Hot Springs General Hospital and one attached to Wing Headquarters.

Hamilton Field, Calif., February 11, 1937.

5th Air Base Squadron: Thirty-two members of this organization have just qualified for pistol marksmanship for the training year 1937-1938. Leading the field of those who qualified is Technical Sergeant James N. Bothne, with a percentage of 92. Following him in the qualification of Expert is Private William D. Funk, with a percentage of 87.5. Six men rated Sharpshooter, with the remaining 24 qualifying as Marksmen.

Primary Flying School, Randolph Field, Texas.

Captain Luther Y.F. Chang, of the Chinese Air Corps, visited Randolph Field on February 15th. Captain Chang, who was recently on duty with the Chinese Training School at Hangchow, China, is making a visit to a number of Air Corps stations in the United States. He stated that "The Chinese Government had, as near as possible, the same method of training as that used at the Air Corps Training Center."

Flying training on the Basic Stage was completed on February 23rd for the class entering the Primary Flying School in July, 1936. The class was due to report to Kelly Field for advanced training on February 25th. This class is composed of ten officers of the Regular Army, two foreign students, and 54 Flying Cadets. Air Corps officers completing the course at Randolph Field are: Lieut. Colonels Raymond E. O'Neill, Laurence F. Stone, Majors Warner B. Gates, George A. Lundberg, Walter J. Reed, Captains Howard H. Couch, James F. Early and

John P. Kirkendall.

The class now undergoing training on the Primary Stage will complete their training so as to commence Basic training on March 8th. The new Primary Flying Class was due to report on March 1st.

Recent Air Corps visitors to Randolph Field included Colonel Ralph Royce, Selfridge Field; Major Peter E. Skanse, Maxwell Field; Major B.S. Thompson, Hensley Field, and Captain L.C. Craigie, Wright Field.

Recent foreign visitors included Michel Detroyat, the winner of the Charles E. Thompson Trophy at Los Angeles, Calif., last fall; Michel Wetzig and R.C. Peyronnet de Torres, of France. All three men are members of the French Air Reserve.

Kelly Field, San Antonio, Texas.

Increased interest in horseback riding has been evinced lately by Kelly Field personnel. There are classes for adults and for children, and a good bit of riding is being done on various occasions. Captain Walter G. Bryte is in charge of the riding. Many interesting paths around the field and in the hills make riding a great pleasure as well as a splendid exercise. Riding was given its first impetus at Kelly Field by Colonel Harrison H.C. Richards, who left here a year ago for duty in the Office of the Chief of the Air Corps, Washington. Colonel Richards is an enthusiastic horseman and inspired many of his old neighbors with his fondness for this sport.

Flying a Douglas instrument plane used in meteorological flights, Captains George A. Whatley and G.H. Steel took off from Kelly Field on the morning of February 16th for Mitchel Field, N.Y. They are to deliver the ship, which will be put into service there. Captain Whatley is commander of the Kelly Field Headquarters Squadron and Captain Steel is Post Exchange Officer.

First Lieut. C.H. Pettenger reported for duty at Kelly Field and was assigned as Flying Instructor. He comes from Luke Field, Hawaii, and is a graduate of the Advanced Flying School, Bombardment Section, (October, 1934).

Cadet J.F. Hunker, who broke his finger and was unable to accompany his class on its maintenance flight to Louisiana, Alabama and Georgia, left February 18th with his instructor, Lieut. Jackson, for Fort Bliss, Texas. He is scheduled to return via Midland, Texas.

Captain H.R. Yeager, Communications Officer, is on a navigation flight to Bolling Field, D.C.

Major R.T. Cronau, Chief of the Bombardment Section, was taken ill with la grippe at Maxwell Field, and returned here Feb. 19th.

Luke Field, T.H., February 4, 1937.

50th Observation Squadron: During the last ten days of January, the Squadron has been engaged, in cooperation with the 19th Pursuit Squadron of Wheeler Field, in a series of exercises to determine the ability of Pursuit to operate against the concentrated fire-power of a formation of aircraft of modern type. The exercises include machine gun fire on towed targets, as well as the use of camera guns. While the local Pursuit units are not yet equipped with the latest high performance Pursuit aircraft, so that the results cannot be considered conclusive, excellent combat training is nevertheless being obtained, as well as data for continued experiments along these lines.

72nd Bombardment Squadron: Major Idwal H. Edwards recently led his squadron on a flight to the Big Island (Hawaii) in order to familiarize recently arrived personnel with the topography of the outlying islands, location and condition of landing fields, prevailing flying conditions, and to accomplish training in bombardment employment and tactics. The flight consisted of eight Keystone Bombers, an Amphibian escort and a BT, flown by Lieut. Colonel Millard F. Harmon, Jr., Commanding Officer of Luke Field, who was participating in his first inter-island flight since his arrival in the Hawaiian Department. Bucking an exceptionally strong head wind, the Squadron followed the north shore of Molokai, passing over the leper settlement at Kilaupapa and the landing field there; thence along the northern cliffs of the Island of Maui; then, after a hurdle across the turbulent Alenuihaha Channel between Maui and Hawaii, past Upolu Point and the green slopes of Mauna Kea to Hilo. After a PME lunch, Army style, the personnel entrucked for the upward climb to the Kilauea Military Camp. The following day was spent on a guided tour of the Park and its surroundings. In the evening, all enjoyed a motion picture on the subject of volcanoes.

On the following morning, the flight took off for Morse Field, South Cape, the southernmost point of the chain of islands. From Morse Field the formation followed the Kona coast past the Kealehehua Bay, scene of the death of Captain Cook, discoverer of the islands, and landed for a short, wet visit at Suiter Field, Upolu Point. Leaving Suiter Field, the flight headed for home, detouring enroute for a close-up view of the Islands of Kahoolawe and Lanai.

After an interruption of one month due to the Christmas holidays, weather, and other interferences, the Squadron completed its tour of the Islands by a visit to the Island of Kauai on February 1st. In spite of unfavorable weather, the flight, consisting of five Keystones, an Amphibian and one BT, landed at Lihau Airport; then, taking off again, promptly circumnavigated Kauai and the nearby Island of Niihau, landing at Burns Field for gas before returning to Luke Field.

23rd Bombardment Squadron: On January 22nd, the Squadron, led by its new Commanding Officer, Major Harold W. Beaton, duplicated the flight of the 72nd Squadron, but in reverse order, as a visit was first made to the Island of Kauai on which Burns Field and Lihau Airport are located. The flight returned to Luke Field the same day. On January 25th, the Squadron proceeded to Hilo, visiting the landing fields on Molokai and Maui enroute. All planes were serviced at Upolu Point and departed immediately for Hilo. The following day was spent at Kilauea Military Camp and in visiting the natural wonders of the Park. On the morning of the 27th, the Squadron took off and, after assembly over Hilo Airport, circled Mauna Loa to

Morse Field, from which place the flight headed for Lanai. After a brief stop at the latter place, the flight returned to Oahu. Unusually clear weather added to the success and pleasure of the trip.

Middletown, Pa., Air Depot, February 24th.

Colonel Lawrence S. Churchill, the Depot Commander, returned from leave of absence on January 27th.

Major R.C. MacDonald reported for duty Feb. 15th, after an extended stay at Walter Reed Hospital.

Major Charles W. Steinmetz, who has been here as Depot Supply Officer over a period of more than six years, was transferred to Chicago as Air Corps Procurement Planning Officer. His departure necessitated changes in the assignment of officers. Major Paul C. Wilkins was assigned as Depot Supply Officer and Captain Charles H. Deerwester, formerly Depot Inspector, assumed command of the 2nd Transport Squadron, Major Wilkins' previous assignment. Major Charles B. DeShields is Depot Executive Officer.

One C-33 and one C-27C from this Depot were recently utilized in flood relief work and were sent to Wright Field for that purpose.

The Central heating plant, construction of which was started approximately two years ago, was accepted January 12, 1937, after the completion of final efficiency tests. This plant, which was erected at a contract price of $213,471.00, furnishes heat to all buildings in the industrial section of the post.

Langley Field, Va., February 15th.

33rd Pursuit Squadron: Comes now practicing breaking through overcasts. It's all very interesting, but your 33rd Squadron Correspondent is wondering how it is going to work out when the real thing comes along. The Langley Beam has more curves in it than Sgt. Tomko's snake, and the writer is convinced that it will be a howling coincident if anybody can follow it in to the cone of silence, which is constantly doing a hula hula around the balloon hangar. By now I guess everybody's doing it (practicing breaking through overcasts, I mean).

The rest of our time was utilized shooting at long ranges. The Group has a B-10 which they loan out to each squadron for towing purposes, and each squadron has a goat. The idea was to check off two pilots on B-10's - the Squadron C.O. and one other pilot, but it's the one other pilot who does all the towing. Draughty things, those B-10's.

35th Pursuit Squadron: Training activities of the Squadron are back in their normal swing after several weeks of curtailed flying. Improved field and weather conditions permitted a heavy schedule of training missions. Instrument flying in the current style of two PB-2's operating together was stressed, much benefit being derived therefrom. Scores are improving in the long range firing of fixed guns on the sleeve target towed by a B-10, though nothing brilliant has been turned in as yet. That "sock" looks mighty small from 500 yards.

Cadet Eakin, soon about to change his feathers and his rank, recently took new lease on life when his PB was dug out of the moth balls and turned loose after a long "rest" on the hangar floor awaiting replacement parts.

The Squadron regrets losing the capable services of its ace engineering and supply officer, 1st Lieut. S.O. Ross, just transferred to Randolph Field. Lieut. Harry Martin has taken over, however, and things are still clicking smoothly.

36th Pursuit Squadron: Second Lieut. Robert A. Gardner departed Feb. 1st in a PB-2A plane to participate in the Cold Weather Equipment Test in the Selfridge Field area. The purpose is to conduct a test for a period of three weeks of the efficiency of the equipment and personnel under extremely cold flying conditions.

A farewell party was given to 2nd Lieut. Wm. H. Gist, a splendid dinner being served and enjoyed by all officers and men of the organization in attendance. This enjoyment was increased by virtue of the elimination of the customary speeches. Lieut. Gist departed the following day on leave of absence, upon the termination of which he will depart from New York for his new station in Panama. Assigned to the 36th Pursuit Squadron, July 1, 1934, as a Cadet, Lieut. Gist was commissioned in the Air Reserve on July 1, 1935, and in the Air Corps, Regular Army, on October 2, 1936. He leaves the organization with the best wishes of the officers and men thereof.

37th Attack Squadron: The Squadron regrets the loss of its able Supply Sergeant and charter member, Sgt. Ibison, who is purchasing his discharge to take a position with the Dawn Laundry of Newport News, Va. Handling supplies is always a dirty job anyway. With this vacancy in the Sergeant grade coming up, Corporal Assman already has a couple of boxes of cigars on hand - just in case. Another loss soon to be sustained by the 37th is Sgt. Eisenberg, who is transferring to San Antonio, Texas, in order to obtain relief from his sinus trouble, which has been greatly aggravated by the very damp Virginia climate.

Just as the proverbial mailman who went for a walk on his off day, Staff Sgt. Hoagland spent a great deal of his recent furlough visiting the Northrop factory. His description of the assembly line of A-17's makes one look forward in anxious anticipation of new equipment.

The smiling 37th recently had a photograph made of all the personnel. It is unanimously agreed that Lieut. Fender would be the best model for a tooth paste advertisement.

San Antonio Air Depot, Duncan Field, Texas.

Major Wm. J. Hanlon, of the Air Corps Materiel Division, Wright Field, arrived at this Depot February 15th for a few days' temporary duty, studying Depot methods. Major and Mrs. Hanlon and their daughter are motoring from Wright Field to San Francisco, and will sail from there to Hawaii, the Major's new assignment. He will also stop at the Rockwell Air Depot, Coronado, Calif., for similar temporary duty.

Among recent cross-country visitors at the Depot were Majors Robert G. Breene and Sam L. Ellis, of the Command and General Staff School,

Fort Leavenworth, Feb. 19-20, the former returning to his station and the latter ferrying an O-25B; also Lieut. Mark E. Bradley, Jr., on Feb. 5th, ferrying a C-24 to his home station, Scott Field.

Major John M. Clark, Depot Supply Officer, flew to Hensley Field, Texas; Fort Sill, Okla., and Oklahoma City, Okla., Feb. 9-11, coordinating Air Corps supply matters in this Depot's Supply Control Area.

Major Elmer D. Perrin, Operations Officer and C.O. of the 3rd Transport Squadron, departed on one of the regular Interdepot Transport Service flights to the Middletown Air Depot and return, Feb. 8-12, to supervise and check the operation of C-33 transports by pilots of the Squadron in the air transportation of supplies.

Captain David J. Ellinger, Assistant Engineering Officer of the Depot, departed Feb. 19th on an extended cross-country flight to Mitchel Field, via Maxwell Field, Ala.; Bolling Field, D.C., and Olmstead Field, Pa., returning along the same route.

Warrant Officer and Mrs. Arthur R. Trabold departed Feb. 15th on 21 days' leave prior to sailing from San Francisco for duty with the Air Corps in the Hawaiian Department. He has been on duty at this Depot as an assistant to the Depot Supply Officer since September, 1928. Their departure is greatly regretted by a host of friends in this vicinity, who wish them every success and happiness at their new station.

The 3rd Transport Squadron at this Depot gained three new members by transfer from Kelly Field on Feb. 18th, viz: Staff Sgt. George L. McCollum and Sgt. Clarence S. Rublee from the 62nd School Squadron, and Pvt. Herman F. Trager from the 61st School Squadron. Pvts. Lucas J. Ashcroft and Lon Z. Bryson, of the 3rd Transport Squadron, left February 19th for the Air Corps Technical School, Chanute Field, Ill., the former to take the Radio course and the latter the Parachute Rigger's course.

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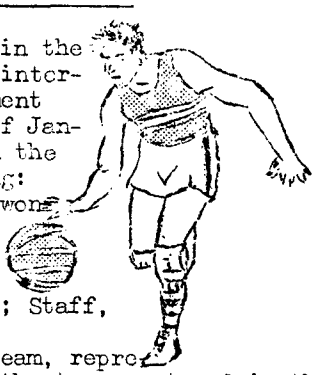
K E E P I N G F I T



Scott Field — The final games in the post basketball inter-squadron tournament were played the night of January 28th, resulting in the following final standing: 7th Air Base Squadron, won all six games played; 15th Obs. Sqdn., won 4, lost 2; 9th Airship Squadron, won 1, lost 5; Staff, won 1, lost 5.

The Post Basketball team, represented by players from the teams entered in the post tournament, won all but one of its games, and that one by a score of 32-31. This contest was started immediately after the team had driven more than a hundred miles in a blizzard. Ten local teams were played and there is a tentative schedule of ten more games, including one at Jefferson Barracks, Mo., and a home game with the Mitchel Field team.

The Scott Field Panthers, a team composed of Scott Field youngsters, was defeated by a Belleville junior team, score 20-10.

Hamilton Field — Basketball is beginning to receive attention on this field. This speedy game had only a small following in the previous season, the fans being somewhat reluctant to part with the bit of energy necessary to attend one of the many games. This year quite a few have turned out, transportation being furnished for games near the post, while the team usually had private cars for transportation. The Bombardiers, as they were called, completed a season with 13 wins out of 18 games played, and earned the respect and friendship of all teams played, together with the fans attending. Every team contacted, without exception expressed the desire for a return game, thus showing what good sportsmanship can attain in the eyes of communities surrounding the different army posts. We look forward to the next season for a more enjoyable series of games.

Inter-Squadron competition in soft ball began recently, with the initial game of a series between the 31st and 9th Bombardment Squadrons, the winner to play the much vaunted 11th Bombardment Squadron for the Group Championship.

Kelly Field — The Inter-Squadron Basketball League terminated with Headquarters Team in the lead, with 12 wins and 3 losses, followed by the 61st with 11 wins and 4 losses; 62nd, with 8 and 6; 12th with 7 and 7; 63rd with 6 and 8; 64th with 2 and 12, and QMC with a clean slate of defeats, 14 in number. Sickness and other unforeseen situations caused several hard working teams to forfeit some of the final games scheduled. Despite the many obstacles encountered, the entire season can be counted as a complete success.

Randolph Field — The Inter-Squadron basketball tournament was again won this year by the 53rd School Squadron. A post team is now being formed to compete in the Air Corps League, composed of Brooks, Kelly and Randolph Fields. The winner in this league meets the winner in the Fort Sam Houston League at the end of the season for the service championship of the San Antonio area.

BOXING

Scott Field — Three Scott Field enlisted men entered the St. Clair County Golden Gloves Tournament, held February 2nd, 3rd and 5th. Of the three boxers, all fighting in the Open Class, only one (Private Gene Higgerson) won a championship title. Higgerson, weighing 135 pounds, had one preliminary bout and scored a knockout in the second round. In the finals he out-boxed his opponent. Higgerson is qualified to enter the St. Louis tournament with other regional champions, and if he defeats all fighters in his class he will then qualify to go on to Chicago. In 1935 he won the featherweight title in the Golden Gloves tournament at Memphis, Tenn.

Private Eddie Brown met a more experienced man and lost his bout in the first round under unfortunate circumstances. After being knocked

down, he jumped to a kneeling position to take advantage of the opportunity to rest while the referee counted, but jumped to his feet too late at the count of ten and was therefore disqualified at once.

Private Marvin Moore, the third fighter from the 7th Air Base Squadron, lost his first fight in the preliminaries by judges' decision.

BOWLING

Middletown Air Depot — The Middletown Air Depot Bowling League is in full swing, the games being rolled on the new alleys installed in the basement of the Administration Building. The League is composed of twelve teams, representing the various sections of the Depot and including an officers' team and an enlisted men's team. Prizes have been provided for the winning team, for high individual score for one game and for the individual members of the winning team.

SQUASH

Kelly Field — The Kelly Field squash players, who were on the recent graduation flight, enjoyed themselves, as might be expected, and to their hearts' content, for they managed to get in several matches with the players in some of the places where they stopped. The team was composed of Captains R.E.Randall, J.R. Anderson, Lieuts. E.J. Timberlake, A.W. Kissner and S.E. Anderson. They first met the Barksdale team and scored a 4 to 1 victory. At Atlanta, the Kelly squashmen did not fare so well, and it is now understood that they play a very good game of squash in the Piedmont Riding Club. Maxwell Field fell before the Kelly Field players (score 3-2), putting the A.C.A.F.S. Squashers one up on their matches. Incidentally, Captain Fat Partridge, one of the Maxwell players, stands about second ranking squash player in the Air Corps, honors going to Lieut. Joel Mallory of Randolph Field.

SOFT BALL

Albrook Field — Despite the postponement of many games, due to pressing maintenance duties, the Softball League of Albrook Field, Canal Zone, completed its first half of a split season with the 74th Bombardment Squadron on top of the heap. The 74th lost one game to the 80th during the series, and their hold on the top rung was never too secure because of the persistent pressing of the 19th Wing Headquarters Detachment (the dark horse of the loop) and the 80th Service Squadron.

The Radio Clerks of the Wing proved to be the real surprise throughout the first half, when they marshalled ten of their total strength of 20 men, to win the first two games on the docket, bowing only to the 74th and 80th in the latter part of the race. In the final standing at the end of the first half of the season, the 74th Bomb. Sqdn won 4 out of 5 games played; 19th Wing Hqrs. Det., 3 out of 5; 80th Service Squadron, 3 out of 5; 29th Pursuit, 2 out of 5; 24th Pursuit, 2 out of 5; and 44th Observation, 5 losses.

TECHNICAL INFORMATION AND ENGINEERING NEWS
Air Corps Materiel Division

Test of Navigation Equipment:

The Douglas C-33 airplane assigned to the Equipment Branch, with a crew of seven, departed from Wright Field on January 16, 1937, for Brownsville, Texas, via New Orleans, La., to test navigation equipment. During the overwater leg of the flight (New Orleans to Brownsville) extensive tests were made of the navigators' type drift meter and experimental drift signals. Celestial navigation was used throughout the flight except for short periods during which the sun was obscured. Comparative tests were made on the bubble sextant and an experimental gyro sextant. The Type A-3 computer was used for the reduction of celestial observations throughout, and in the latitude band 30 - 39 degrees H.O. publication #214 was also used. The automatic pilot functioned satisfactorily and was controlled directionally from the navigator's table during the entire flight.

A report is being prepared describing the results obtained with the various items of equipment.

Return to Wright Field was made on January 23, 1937.

Double Pointer Tachometer:

An Engineering Section Memorandum Report outlines results of tests conducted on a double pointer tachometer submitted by the Kollsman Instrument Company, Brooklyn, N.Y., to determine compliance with the Air Corps Specification. This tachometer has errors smaller than the tolerances allowed for chronometric tachometers on all the tests applied; the double pointer and resultant openness of scale make for readability which is much advanced over that of the standard Type C-2 chronometric tachometer; simplicity of the mechanism should make repair and maintenance easier than for the Type C-2 tachometer. It was recommended that a quantity of ten of these instruments be procured for service test.

Photographic Work in Connection with Flood Relief:

The aerial Photographic Laboratory of the Equipment Branch was especially active during the past three weeks due to the photographic work in connection with the Flood Relief Project. This Laboratory was used as a base for all aerial photographic work pertaining to the survey of the Ohio River during the flood stage. Wartime conditions were simulated, in that it was necessary to obtain pictures regardless of weather conditions. The percentage of good results was extremely high.

Navigation Case:

Service Test Manual and questionnaire for the Type A-5 navigation case were prepared. This is a carrying case for the navigator's use in maintaining his equipment. It is 18 inches long by 17 inches wide by 3 inches deep and has a quick opening zipper fastener. Receptacles

are provided for numerous pieces of equipment necessary in the performance of the navigator's duties.

Type B-4A Photographic Print Dryer:

One Type B-4A photographic print dryer, which is used for the natural air drying of photographic prints in large quantities, has been fabricated and tested at the Materiel Division. This dryer is similar in design to the Type B-4, except that it is constructed entirely of metal, has large capacity air blowers, and is provided with castors. It received a severe test during the Ohio River Flood Survey Project. Action has been initiated to standardize this type dryer in place of the Type B-4 which was service-tested. Improvements recommended as a result of service test of the Type B-4 were incorporated in the Type B-4A dryer.

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AIR CORPS COMMENDED FOR IMPROVED ACCIDENT RATE

As a result of facts developed from an exhaustive study directed by the Chief of Staff, designed to increase the safety factor in the operation of Army aircraft, the Secretary of War has directed the following letter be sent to the Chief of the Army Air Corps:

"It has come to the attention of the War Department that during the Fiscal Year 1936 the rate of accidents occurring in the Air Corps has reached the low point of .859 per thousand flying hours. This compares with an average rate of 1.08 for the preceding five years and with a rate of 5.06 during the Fiscal Year 1922. During the Fiscal Year 1936, a total of 500,704 hours were flown, as compared with a total of 65,214 hours during the Fiscal Year 1922. An analysis of these figures indicates the following:

"In 1936 eight times as many hours were flown by military aircraft as in 1922, but the rate of total accidents in 1936 was one-sixth the rate of 1922, and it is noted that in 1936 one fatal accident occurred for approximately every 12,000 hours flown, as compared with one fatal accident for every 2,000 hours in 1922, or the 1922 rate of total accidents was 489 per cent higher than the 1936 rate.

"Similarly, a comparison with the preceding five-year period indicates that although the number of hours flown was 20 per cent greater in 1936 than the average for the five preceding years, the frequency of accidents was reduced by one-fifth, again indicating that in 1936 the safety factor was considerably improved.

"The Secretary of War states that, in his opinion, such an improvement could have been accomplished only through the loyalty and diligence of the officers, enlisted men and civilian employees of the Air Corps, who by painstaking effort, the display of expert knowledge, and by intelligent cooperation with the civilian industry and other technical agencies of the Government, have so advanced the science of aeronautics.

"The Secretary of War therefore desires to commend the entire Air Corps for this splendid showing and expresses the hope that succeeding years with improved safety appliances will continue to show marked improvement.

"A copy of this letter is being transmitted to the Commanding General, GHQ Air Force, and to all Corps Area and Department Commanders for their information and for their publication to all Air Corps organizations under their command."

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PURCHASE OF AUTOGIROS

The Secretary of War announced the purchase of 6 autogiros, complete with spare parts, from the Kellett Autogiro Corporation, Philadelphia, Pa., at a cost of $238,482.18. Each autogiro is powered with one 225 horsepower radial engine manufactured by the Jacobs Aircraft Engine Company, Pottstown, Pa.

This purchase was made following exhaustive tests by the Air Corps in conjunction with the Infantry, Artillery and Cavalry during approximately 1½ years, using pilot models from the Kellett Autogiro Corporation and the Pitcairn Autogiro Corporation of Willow Grove, Pa.

These autogiros will be used by the Infantry, Artillery and Cavalry for reconnaissance, observation of fire, carrying of messages and command missions. They have a speed of approximately 125 miles per hour, a minimum endurance of 2½ hours, and in landing can clear an obstacle 50 feet high and stop within 150 feet of the obstacle.

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"DUSTING OFF" MOSQUITOES IN PANAMA

Mosquito Dusting has become one of the duties of the 74th Bombardment Squadron in the Panama Canal Department, and a trusty Keystone is being used to best advantage. A short time ago, it was found that mosquitoes in large quantities were breeding in the inaccessible parts of Victoria Fill, and Colonel H.C. Pillsbury, Chief Health Officer of the Panama Canal, requested that Albrook Field furnish an airplane for dusting purposes.

Dusting apparatus was immediately installed on a B-6 Bombardment plane, and once a week Captain J.T. Sprague and Lieut. G.C. Clark, Air Corps, spread a mixture of paris green and oulverized clay throughout the breeding area. The dusting has been so effective that in the future it will be necessary to conduct dusting operations only once every ten days.

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IMPROVEMENT OF LANDING FIELDS IN HAWAII

Work in connection with the improvement and enlargement of the airports at Hilo, Hawaii; Burns Field, Kauai; and a new field on Maui, replacing the tricky field at Maalaea, is now well advanced, and when completed it is anticipated that week-end navigation flights to the outlying islands by individuals and squadrons of the 5th Composite Group, Luke Field, T.H., will be encouraged.

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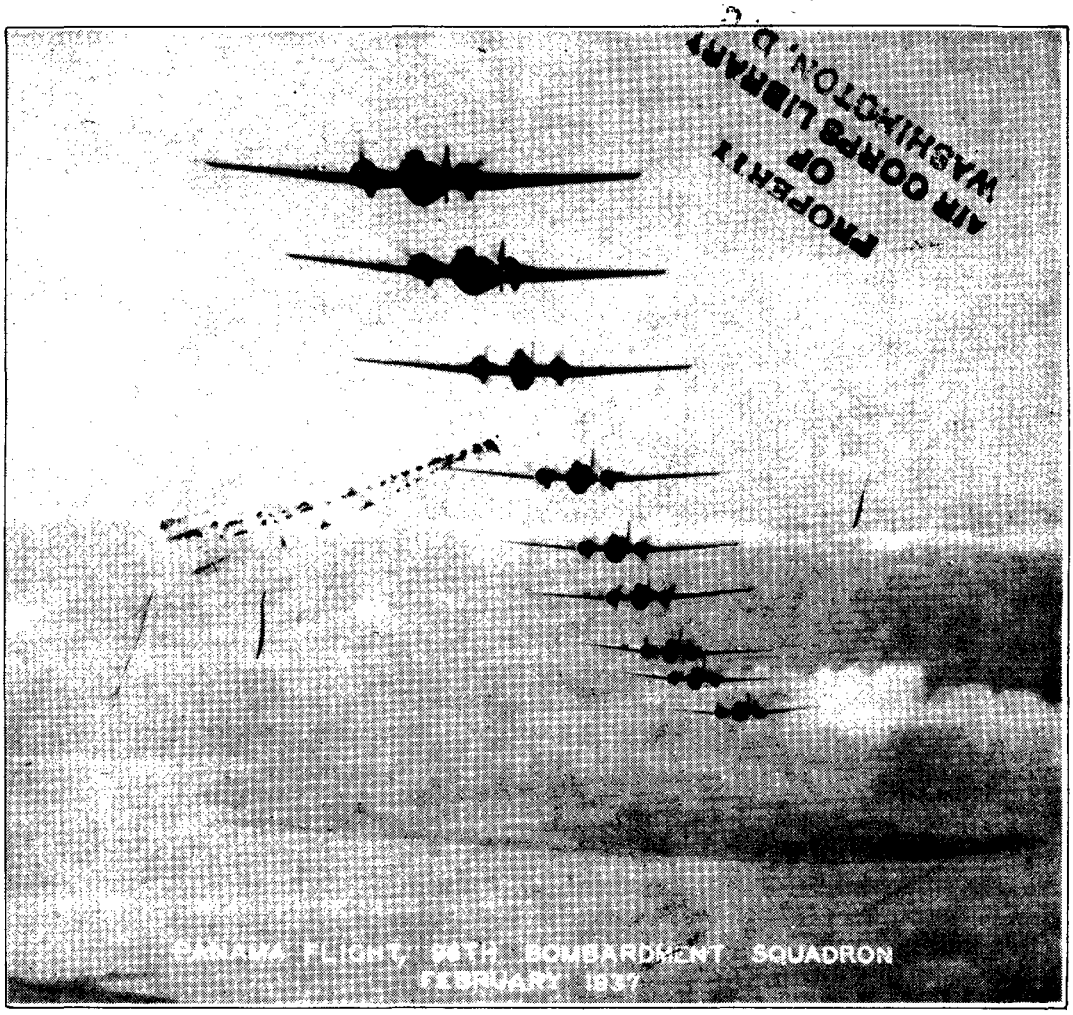
AIR CORPS NEWS LETTER



HAWAII FLIGHT 14TH BOMBARDMENT SQUADRON FEBRUARY 1937

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

VOL. XX MARCH 15, 1937 NO. 6

VOL. XX AIR CORPS NEWS LETTER NO. 6.
Information Division, Air Corps — March 15, 1937 — Munitions Building, Washington, D.C.

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

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MATERIEL DIVISION ACTIVITIES OF 1936

ANY review of Air Corps activities for a given calendar year must of necessity be brief in order to maintain the interest of readers. As an opening we introduce the Materiel Division which is the technical service of the Air Corps.

The end of 1936 found the Division organization without major change except for the establishment of a Budget Office, which was introduced for the purpose of accomplishing a centralized control over a function which had formerly been executed by several isolated units. The Budget Office, under the direction of a Budget Officer, is charged with the preparation of the Budget Estimate for all Materiel Division activities, control of the subsequent expenditure of funds, and the accounting to higher authority for that expenditure.

A number of W.P.A. workers were taken on principally in construction and grading projects. The personnel on permanent status at the end of 1936 stood as follows: 100 officers, 44 enlisted men, and 1305 civilians. In the officer group, members of various services, such as Medical Corps, Signal Corps, Quartermaster Corps and Corps of Engineers work in cooperation with Air Corps officers in certain specialized projects.

The basic activities of the materiel Division lie in three main sections - Engineering, Procurement and Field Service. The Engineering is responsible for design, development, and testing of equipment and for the preparation of engineering data used for evaluation and procurement purposes; the Procurement for the execution of all circulars, contracts, and pertaining legal documents, and for all actual procurement accomplished in the Air Corps; and the Field Service, for the supply and maintenance of all equipment procured for the distribution of supplies to the service.

During the calendar year of 1936, the main emphasis of the Division was placed upon the accelerated procurement program, with the result that contracts were completed for even more planes than were delivered in any previous year. The delivery of many of these planes, contracted for in 1936, was accomplished before the year was ended. Airplanes delivered during the calendar year 1936 and contracted for during 1936 and preceding years were in excess of 500.

Engineering. - In spite of concentration on procurement and the vast amount of engineering labor involved in connection with procurement, from the outlining of predictions to the checking of engineering results, the laboratories have continued in their research and testing with most interesting results.

Wheels. - Operation of the present streamline wheel and tire on soft ground was improved by widening the tire contour at the tip of the tread. A new series of so-called "smooth" contour tires have been under development. These have a smaller outside diameter for a given load than the present standard wheel, thereby reducing the amount of cut-out required in the wing for retracting gear. The new wheels in this series were designed in 27, 39, 44 and 47-inch sizes for loadings of 2650, 8000, 10,500 and 13,500 pounds, respectively. The 60-inch wheel was reduced to a 56-inch size with the same carrying capacity and footprint, achieving a more efficient shape and a saving in assembly weight. A 50-inch watertight wheel was ordered for experimental test on a YOA-5 airplane.

Propellers.- During 1936, efforts were directed toward the elimination of difficulties in existing designs rather than in the development of new types. The Propeller Laboratory conducted all the propeller tests for the Navy and the Department of Commerce, as well as for the Air Corps. It is the prime source of propeller engineering data in the United States.

The controllable pitch propeller reached a stage of development where it was procured for all new military airplanes except the primary trainer. After considerable research, the automatic or constant speed propeller was sufficiently perfected to warrant installation on several types of airplanes under current procurement.

Under experimental investigation were the synchronization of automatic propellers and the application of dual rotational controllable propellers, or two propellers mounted in tandem on separate concentric shafts rotating in opposite directions. The main interest in the latter type lies in the neutralization of torque effect on the airplane which becomes necessary in the use of the thousand-horsepower engine in small

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single-engine aircraft. Experimental blades produced by copper brazing in an atmosphere of hydrogen, and a type employing a single reinforcing rib down the center line, were placed in production.

A wet magnaflux method of inspection first employed during 1936, discloses internal flaws not heretofore revealed by any known method of visual inspection forcing an improvement in manufacturing processes, in order to avoid rejections because of the flaws made evident.

The study of propeller vibration has continued to prove of paramount importance. Especially is this true since the increased rigidity of engine mounts for higher powered engines and the use of monocoque fuselage structures have raised the natural frequencies of these structures from below the flight range, in some cases, to the cruising range, thus magnifying the slightest amount of propeller unbalance.

The Wind Tunnel Laboratory developed, during 1936, the photographic method of measuring performance in landing and take-off. It has also been engaged in developing methods for measuring static thrust, ground friction, and net accelerating forces of actual airplanes as well as a method for measuring torque and thrust of an engine-propeller combination in actual flight.

Nose Wheel Landing Gear.- Investigation of a nose wheel type of landing gear based upon the theory of the unsoundness of the normal landing gear system, in which the airplane at rest is supported by a pair of wheels located forward of the center of gravity and a tail wheel in the rear of the airplane, has proved most interesting. Desiring to provide evidence of the adequacy of the system as applied to large airplanes of heavy wing loading and fairly high speed, a survey was made of Air Corps airplanes and a trial installation on a Douglas amphibian was effected. It was given thorough flight testing with satisfactory results. In addition to the more positive landing characteristics, prevention of nose-overs in soft earth, ground loops, and increased reliability in instrument landings, this system provides greatly improved stability in turns. The bimotor type of airplane lends itself to the nose wheel installation quite feasibly, and since this is the present conventional arrangement for airplanes of large size and weight, it seems possible that the nose wheel may find favor for future construction.

Lighter-than-Air.- Two motorized balloons were ordered for flight tests for delivery in the latter part of 1936 and procurement data were prepared for a high-speed, single-engine balloon winch truck equipped with a collapsible mooring mast for use with the motorized balloons. The only balloon in the world constructed completely of synthetic rubber was produced - the Army Observation Balloon, Type C-3. The material was selected after extensive research and testing and has been proved to possess excellent durability, gas-holding, and weather characteristics. A definite increase in the life of this balloon over the one constructed of genuine rubber is expected.

Rubber-coated Hose.- This experiment led to the development of an all-purpose synthetic rubber-coated hose which is impervious to the deteriorating qualities of coolants, gasoline, or other chemical solvents at all temperatures encountered in practice.

Engines.- Power plant engineers have concentrated on increasing the power output of engines in service, design of new types, improvement of fuels to permit greater power output with reduced fuel consumption, development of automatic controls, and an oil dilution system for cold-weather starting.

The power output of the air-cooled engine has steadily increased and the introduction of the 14-cylinder, 2-row types permits higher engine rotating speeds.

Oil Dilution System.- Invented by an Air Corps engineer, an oil dilution system permits cold-weather starting of engines, without the use of external heat, even at extremely low temperatures.

Materials.- The probability of flight at high altitudes has introduced the problem of materials whose properties must not change under lower temperatures, and a vast amount of testing in the cold room under temperatures of -50° F. has been carried on. Since windows must withstand an internal pressure, the physical properties of glass and glass substitutes had to be obtained. It was found that new resinous materials with the transparency of glass but considerably stronger offered a solution to this problem.

Navigation Equipment.- A Douglas C-33 airplane was assigned to the Instrument and Navigation Unit during 1933 for the purpose of testing the automatic pilot, gyro octants, drift sights and signals, and other navigation equipment. Several test flights over water, two from New Orleans to Brownsville, Texas, furnished valuable information on the equipment carried. Automatic control of the increasing number of instruments with which the modern airplane is equipped is one of the outstanding Division aims and this work has been pursued in the laboratories constantly through the year. A synchronous control for multi-engine installations showed promise. Operating on bench tests, a small model automatically synchronized speeds much better than could be accomplished by manual control.

Electrical Equipment.- Electrical de-

velopment has been characterized by exploration into the field of alternating current for aircraft application, and an experimental installation prepared for fiscal year 1937. Portable-by-air lighting equipment for landing fields was under development.

The design of landing lamp assemblies was modified to reduce parasite drag especially for airplanes of over 200 mph. cruising speed. These lamp assemblies are installed in the leading edge of the wing and use a glass lens conforming to the wing's contour.

Miscellaneous Equipment.- A shoulder type safety belt was developed to prevent head injury to the aviator in a crash.

A small compact pneumatic life-preserver vest worn during over water flight and quickly inflatable with CO_2 gas was adopted. Previous types of life-preserver vests were constructed of kapok. The new vest has a light fabric outer shell with an airtight latex inner cell which can be readily inflated in emergency and is far less bulky for cockpit operations with guns, cameras, etc.

Tests were completed on a light-weight tent and sleeping bag suitable for Arctic regions.

Oxygen masks for gaseous oxygen were improved and tested. Due to the difficulty of obtaining liquid oxygen, the universal use of gaseous oxygen was faced as a necessity, requiring the design of new cylinders, regulators, valves and related equipment.

A steam operated external energizer for cold weather engine starting was designed, consisting of a small automatically controlled steam generator weighing about 100 pounds and a steam-driven energizer.

Aerial Photography.- A self-contained photographic laboratory automobile trailer unit has been developed, having one room completely equipped for printing and one for film processing and print finishing. The Unit houses its own ventilating system, water supply, electric power plant, chemical and material supply, together with all photographic accessories necessary to produce complete mosaics wholly within the Unit. Much progress was made in the construction of photographic instruments of precision comparable to surveying instruments. The Aerocartograph and Multiplex Projector were tested out in the preparation of aerial maps.

Great progress has been made during 1936 upon the completion of the Physiological Research Laboratory. Equipment was gradually obtained and additional experiments performed. One of the principal projects was the investigation of centrifugal force on pilots. The equipment consisted of a long rotating arm with a seat bolted to its outer end. Powered with a large electric motor, the arm is rotated at speeds up to 80 rpm., developing a force 20 times the pull of gravity. Laboratory members are acting as experimental subjects up to "8 G's" and experimental animals for the higher forces, where permanent injury may be produced.

Armament.- Nonconfidential armament projects under investigation included determination of limiting dimensions for turrets or inclosed cockpits for use of flexibly mounted guns; a control mechanism for bomb racks, by which bombs may be released at regular time intervals, thus producing a controllable spacing on the ground of successively dropped bombs; revision of fixed gun installations to increase number of bullets that can be fired in a given time, to compensate for the increased ground speed of the modern attack aircraft.

Aircraft Radio.- Further experiment with the radio compass to procure one which would prove satisfactory, reliable, and not too intricate from the maintenance point of view was a principal project. Progress was made in the development of a simple light-weight direction finder for pursuit airplanes. Tests of a loop wound around the engine cowl gave promise. A throat microphone was developed to replace the T-17 hand microphone. With this equipment which is strapped to the pilot's throat, the hands are left free for other purposes while transmitting.

Flight Testing.- In a year of accelerated procurement, and almost constant convening of evaluation boards, the Flying Branch has been a busy place. Complete performance testing of 8 Air Corps airplanes and 7 commercial airplanes offered in competitions was accomplished. Other miscellaneous tests of military and commercial airplanes numbered 46, besides which were the continuous project flight tests for the Aircraft, Power Plant, Equipment, and other engineering branches.

Field Service Activities.- The increased activity and mobility of GHQ added to the vast amount of routine detail handled by this Section. Outstanding among the year's activities, however, were the following projects.

Inter-depot transport operations were established with two new C-33 airplanes and a transport squadron assigned to each depot. This service proved most valuable and has alleviated the shortage of spare parts situation.

Work on the construction of a new depot at Sacramento, California, to replace the Rockwell Air Depot, was initiated. The new depot is to be finished about the end of the calendar year 1938.

An Engineering and Supply Conference was held in October after a year's lapse of this annual event. Limiting the attendance to depot and wing of-

ficials increased the effectiveness and control of the gathering. About 35 officers from other posts convened with Materiel Division officers at Wright Field.

Army Aeronautical Museum.- Several interesting and valuable exhibits were added during the calendar year and from the collection an Air Corps display was prepared for the Great Lakes Exposition at Cleveland which was an acknowledged success. The publication of the 8th edition of the Handbook of Instructions for Airplane Designers, completely rewritten, was a major project of the Editorial Unit. In addition to an almost continuous flow of press items, there was produced twice each month, "The Technical Data Digest", consisting of 48 pages of abstracts from current aeronautical publications. Furthermore, 24,000 photostats and 19,000 photographic prints were turned out, and approximately 12,000 feet of motion picture film copied.

General Activities.- In a busy organization events are apt to crowd closely upon the heels of events. A greater number of evaluation boards congregated than during any previous year. The American Photogrammetry Society and the Air Transport Association held their annual meetings at the Division, Air Corps officers benefitting from the conference. Eight officers received awards of merit, five for courage under danger in connection with flight. Many lectures on Air Corps topics were delivered by Materiel Division officers and engineers before representative organizations, and thousands of visitors made the daily tours of Wright Field.

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NAVIGATION SCHOOL AT MITCHEL FIELD

The 9th Group Navigation School is scheduled to resume activities on April 5th, when a new class of four student officers will assemble daily to wrestle Old Man Mercator and his associates. The Group is now provided with twenty graduates of its own Navigation Unit and several graduates of the Langley Field and Rockwell Field Schools.

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NAVIGATION FLIGHT BY 97TH SQUADRON

By the Mitchel Field Correspondent

Bright and early on the morning of February 17th, the 97th Observation Squadron (Corps & Army), Mitchel Field, N.Y., left Mitchel Field, N.Y., bound for a three-day trip to Florida and Alabama for the purpose of training in Unit and individual Navigation, familiarization with terrain and airports, and maintenance of airplanes away from the home field. Seven O-46A airplanes with the following personnel were taken: Captain A.J. Lehman, Lieuts. S.P. Wright, C.F. Damberg, T.S. Moorman, Cadets Wackwitz, Catlin and Burnham, Staff Sergeants Riviere, Pollack, Corporals Farmer, McCoy, Collins, Privates Placey and Ennis.

After several weeks of rain and snow, the morning of the 17th dawned bright and sunny. Aided by a tail wind, we made Langley Field in one hour and forty minutes and flew on to Pope Field, arriving at 11:50 a.m., or two hours and fifty minutes' flying time for the 510 miles to Pope Field. The Squadron was divided into three flights.

From Fort Bragg we flew to Jacksonville, where we staked down our ships and were driven into town to the Roosevelt Hotel. After dinner, we took up a strategic position in the third and fourth rows of the "Florida Theatre."

On the 18th we flew to Maxwell Field, the route lying over some of the wettest country we've ever seen. We landed at Maxwell Field about 11:30 a.m., and were much impressed by the layout of the landing field and buildings. No two-mile jaunts from one end of the flying line to the other there.

Very early on the morning of the 19th, the Squadron left Maxwell Field for Atlanta, where we were forced to lay over for two hours because of bad weather anead. We finally got away and arrived at Pope Field at about three o'clock, having lunch there on crackers and milk. A short jaunt to Langley Field - refueling, and the final leg to Mitchel Field. Darkness caught us enroute, and we landed at Mitchel Field at 6:30 p.m.

Having flown several thousand miles in three days - four or five hours a day - the absence of maintenance trouble was most complimentary to the O-46A airplane. Of interest to the statistically minded are a few figures relating to speed and gas consumption, viz: Total distance covered, 2118 miles; flying time, 14 hours and 40 minutes; average ground speed, 144.49 m.p.h.; average gas consumption, 34.6 m.p.h. The cruising r.p.m. never exceeded 2,000, or approximately 60 percent of available power. The cruising altitude varied from 2,000 to 4,000 feet.

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CHIEF OF STAFF COMMENDS PANAMA FLIGHT

In a letter to Major General Frank M. Andrews, commanding the GHQ Air Force, the Chief of Staff of the Army, General Malin Craig, stated:

"The flight of the 96th Bombardment Squadron from Langley Field to Panama and return was well planned and has demonstrated that our Army navigators are thoroughly capable of navigating our airplanes over extensive stretches of water. I have read your report with great satisfaction." General Craig extended congratulations to the officers and enlisted men participating therein.

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"C H O W C A L L"

By the Bolling Field Correspondent

NAPOLEON had no conception of airplanes or their value in peace and war. Nor did he know that thousands of men would sometime comprise that all important branch of the service - the Air Corps.

And so - the Air Corps - thus being a part of the Army, is included (and heartily agrees) in Bonaparte's well-known and oft repeated saying - "An Army marches on its stomach."

Under the supervision of its mess officer, 1st Lieut. Arnold L. Schroeder, Air Corps, the Bolling Field consolidated mess is operated with efficiency, cleanliness and dispatch by Mess Sergeant (Staff Sergeant) O.E. Johnson, and a competent staff, including Sergeant George G. Long, Assistant Mess Sergeant; ten cooks; two bakers and two clerks.

The cafeteria system is used, and meals are served for one and one-half hours, that is, breakfast from 6:00 to 7:30, etc., in a well ventilated dining room equipped with 34 four-place tables. On the walls and posts are hung replicas of the various Air Corps squadron and school insignia, thus adding a cheerful though not blatant color to the surroundings.

The latest type of equipment is conveniently installed in the kitchen. Electric coffee grinders, meat slicers, mixing machines and refrigerators all do their part toward minimizing in time and labor the task of preparing a well balanced and well cooked meal.

The old army dread of doing "K.P." is also practically eliminated through the use of electric potato peelers and dish-washing machines, and five handy sinks connected to boiling hot water.

The food is prepared in the newest type ranges, steam kilns, cookers and broilers and then placed over steam heated counters where it is kept hot while being served during meal hours.

The cafeteria system is most practical, because Air Corps duties are such that certain groups of men must eat at varied hours, and thus 450 men are easily served at places accommodating but 134. Little, if any, delay is experienced at the serving tables, and it takes only six minutes for a group of 25 to go through the line, from the time they pick up their trays to having them filled.

Two 30-gallon coffee urns are used, and the serving counter is also equipped with two gas-operated toasters, as well as ice cream compartments and water coolers.

Lieut. Schroeder says: "The morale of any group of men varies directly with their satisfaction with the food they eat. Since I have been Mess Officer at Bolling Field, my main concern has been to operate our Mess in such a manner that our men would be, in every respect, more than satisfied. Any success that has been attained is due to the efficiency and splendid spirit of cooperation shown by all the men working in our Mess."

A sample of the Bolling Field menu follows:

Breakfast: Corn cakes, pork sausages, syrup, fresh apples, fresh milk, oatmeal, bread, butter, and coffee.

Dinner: Cream of tomato soup, Virginia baked ham, sweet potatoes, bread dressing, stewed tomatoes, buttered carrots, fresh celery, ice cream, cherry cake, bread, butter, coffee and milk.

Supper: Roast beef, mashed potatoes, vegetable gravy, cole slaw, bread, jelly, tea and milk.

With such menus and with such modern equipped kitchens in which they are prepared, it can safely be wagered that - were the great General to come back to earth today he would readily amend his remark to "An Army marches AND FLIES on its stomach."

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18TH RECONNAISSANCE SQUADRON INSIGNIA

The insignia of the 18th Reconnaissance Squadron, GHQ Air Force, was approved by the War Department on February 9, 1937, and is now being painted on the equipment. The design is a yellow equilateral triangle, one point down, with a silver border. Superimposed on this triangle is a sphere under a winged eye. Both are blue. Coming from the eye are nine silver rays spreading fanwise over the sphere which terminate at the border. Heraldry being what it is, the design of the insignia describes perfectly the function and scope of the Squadron's activities.

The 18th Reconnaissance Squadron is stationed at Mitchel Field, L.I., N.Y.

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RECRUITS FOR BOLLING FIELD

An extensive recruiting program in the Third Corps Area is bringing many recruits to the Air Corps, and especially to Bolling Field, D.C. A "recruit training period" of from six to eight weeks is given the new men before they are turned over to various duties on the field. It is noted that the majority of newcomers are exceptionally well educated, and therefore most apt to cope with the intricate duties of the Air Corps.

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Brigadier General Gerald C. Brant has been relieved from the command of the 3d Wing, GHQ Air Force, Barksdale Field, La., and assigned to the command of the 2nd Wing, Langley Field, Va., March 19, 1937.

V-7248, A.C.

HEROIC ACTION OF TWO CIVILIANS SAVES LIFE OF PILOT

During the investigation of the airplane accident which occurred at Bernard Airport, Youngstown, Ohio, on February 7, 1937, and in which the pilot, 2nd Lieut. J.C. Ziler, Air Reserve, was injured, it developed that Messrs. P.C. Boyer and R.F. Thomas, both of Youngstown, Ohio, were instrumental in rescuing the pilot.

In a communication forwarded to the Commanding Officer, 1st Pursuit Group, Selfridge Field, Mich., Major John G. Williams, Air Corps, stated:

"Judging from the testimony obtained, Mr. Thomas was the first to reach the crash. While he was attempting to remove the pilot, Mr. Boyer arrived. Mr. Thomas lifted a wing and disengaged the pilot sufficiently to permit Mr. Boyer to pull him from the burning wreck. Although neither of these men were burned, the rescue was made at considerable risk, as the airplane contained three fuel tanks, each taking fire separately, and also equipped with flares which ignited during their rescue attempts.

Neither of these men knew each other and did not recognize each other until testimony was being obtained from Mr. Thomas. Mr. Boyer was present when Mr. Thomas was being interviewed and remarked that now he knew whose legs they were that he had seen. It appears that Mr. Boyer was so intent on helping to remove the pilot that he saw only the legs of the man that was helping him, both losing each other in the crowd that gathered quickly.

Some idea of the strain under which these men worked may be realized from the following incident. The office of the airport hangar is heated by a coal stove. Being temporarily out of coal, one of the attendants was burning old oil, placing it in a can and throwing the can in the fire. While interviewing Mr. Thomas, one of these cans hissed and popped, and Mr. Boyer started for the door, checked himself and remarked that it sounded like one of those flares exploding.

Their prompt action without doubt saved the life of the pilot."

The Commanding Officer of the First Pursuit Group, Lieut. Ziler's organization, in a letter to each of these two Youngstown citizens, commending them for their action in the emergency cited above, stated, in conclusion, as follows:

"Your action saved the life of Lieut. Ziler. Kindly permit me to extend to you on behalf of Lieut. Ziler and his brother officers of the First Pursuit Group the sincere appreciation and thanks from the entire command.

Should you ever be in the vicinity of this station, you are heartily invited to visit this station so that the officers of the command may have the opportunity to meet you.

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LIEUT. MALCOLM SAVES CHILD FROM DROWNING

Second Lieut. Marion Malcolm, a member of the 94th Pursuit Squadron, Selfridge Field, Mt. Clemens, Mich., received the plaudits of his fellow officers following his heroic plunge into the icy waters of Anchor Bay on the afternoon of March 3rd to rescue the four and one-half year old daughter of the Commanding Officer of the 94th, Captain Leo H. Dawson.

The rescue by Lieut. Malcolm, made shortly after Mrs. Henry B. Clagett, wife of the Commanding Officer of Selfridge Field, rushed into the Officers Club and reported the mishap, was completed with the aid of officers who formed a human life-line across the ice.

Lieut. Malcolm ran from the club to the lake, taking off articles of his uniform as he ran. A few feet from shore the ice gave way beneath him and he was plunged into the icy water. Swimming the remainder of the distance, he found the small girl floating face down about 60 feet from the shore. After returning her to the edge of the ice layer, he handed her up to the first man in the line of officers which had formed across the ice to assist him. Lieut. Malcolm was assisted from the water while the girl was rushed to the Selfridge Field hospital. Although half unconscious, she was revived at the hospital and returned to her home in the evening.

Commenting on this incident, the Mt. Clemens DAILY LEADER stated:

"The heroic action of Second Lieutenant Marion Malcolm, of the 94th Pursuit Squadron, Selfridge Field, in saving the daughter of his commanding officer in Amchor Bay is typical of the spirit of the Air Corps and the men included in its personnel. Lieut. Malcolm's feat brings not only personal congratulations from the Daily Leader, but congratulations to the entire Air Corps department for training which develops in its young men the desire to give service to their fellowmen at all times regardless of personal danger. * * *

To Mrs. Henry B. Clagett, wife of Col. Henry B. Clagett, commander of Selfridge Field, go congratulations as glowing as those to the rescuer. It was Mrs. Clagett's immediate insight into impending tragedy and instant response to the demand for assistance which made the rescue possible. Were it not for her cool-headed action in calling aid, the incident might have resulted in tragedy.

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HIGHLIGHTS OF THE LANGLEY FIELD - PANAMA FLIGHT

By Major Jasper K. McDuffie, Air Corps

Have you ever flown a thousand miles over water in a land plane and then turned around and retraced your steps? The nine B-10B Bombers of the 96th Bombardment Squadron, GHQ Air Force, were scheduled to take off from Langley Field on the morning of February fifth for Miami, enroute to Albrook Field, Panama Canal Zone, on a routine simulated mission of assistance in the defense of the Canal Zone. Soon after General H.C. Pratt, commanding the Second Wing, GHQ Air Force, had completed his inspection of the planes and personnel on the morning of February 4th, however, forecasts of poor flying weather for the following morning began to pour in. A hasty weather conference was called for one o'clock that afternoon. Meanwhile, the 96th Squadron was told to prepare for a possible take-off early in the afternoon. At the conference it was decided to send the Squadron to Spartanburg, S.C., at once in an effort to get behind the bad weather.

From that moment until the take-off, there was a mad scramble of both officers and men to pack their clothing and obtain money with which to pay their expenses while enroute. These things are always put off until the last minute. A few people found that their suits were still at the tailor's, but General Andrews, who commands the GHQ Air Force, took these articles with him when he flew down to Miami the following day to wish the 96th personnel bon voyage on their over-water hop.

About an hour after leaving Langley Field, the flight began to wonder if Captain "Pinky" Williams, the meteorological officer, had recommended sending them to Spartanburg to avoid bad weather or to test them in instrument flying through snowstorms. The further the Squadron went the thicker the snow became, finally totally obscuring the ground and making it necessary to rely entirely on instruments. However, Major McDuffie had tuned in his radio on Spartanburg and knew that there was good weather somewhere ahead. The flight broke through the snow about fifty miles from Spartanburg directly on its course and had left behind all of the bad weather for at least the next six days.

On February 5th, the Squadron proceeded to Miami without incident and at once prepared the planes for the long hop to Panama. At 4:45 on the morning of the 6th, the telephones throughout the hotel began ringing, and the flight personnel had started another day. Clothes were hastily packed, breakfast was grabbed while discussing the weather reports and forecasts, busses were caught at six o'clock, and the ten-mile ride to the airport was begun. Then motor covers were pulled off, and the motors started to warm up while leather jackets and summer flying suits were donned. Winter flying clothes had been stored the preceding night as useless in the warm air between Miami and Panama. For the next few hours, however, everybody was longing for the warmth of those same discarded suits.

Finally, everything was set. The nine Bombers moved out in single file and rose easily into the air with their 4500 pounds of gasoline. As they climbed in large circles up to 6,000 feet, they passed over Chapman Field at eight o'clock headed on the course. From that time until Panama was reached, the order was to hang back on the throttle and conserve gasoline. It might be needed.

The Squadron was just an hour behind the slower flying Amphibian, the "Duck," which was making the same flight as a safety plane in the event one of the Bombers was forced down into the water. Incidentally, every plane carried collapsible rubber life rafts, drinking water, canned tomatoes, corned beef, malted milk tablets, chocolate bars, and even jungle kits with bolos and mosquito head-nets.

Cuba was crossed in the thirty minutes just after nine fifteen, at which time everyone took a real good look at the last land they expected to see before reaching Panama. Drift and ground speed were carefully checked by the navigators in the three flight leaders' planes while they still had good solid ground to get accurate readings from. Then Cienfuegos faded behind. Afterwards the navigators could use only the white-caps of the wind-swept Caribbean with which to reckon their drift and ground speed. But, of course, as good navigators, they took plenty of shots to verify their positions.

Gradually the broken clouds forced the planes higher, and at the half way mark the Bombers were at 8,000 feet, when inquisitive eyes which had been watching the white-caps and clouds began searching for the Amphibian which was flying along below the clouds and about 500 feet above the water. Sure enough, their curiosity was satisfied. There below and to the right was the "Duck" lumbering along at a hundred and ten or fifteen miles an hour. It was possible to watch it for five minutes or more through the breaks in the clouds and then it was gone. After that it was the same old thing of looking at the clouds, or taking glimpses of the water, or wondering where the sharks were thickest or, as some of the more comfortably fixed mechanics could

do, lie back on their soft kapok life preserver cushions and read of bold adventure on the arid plains of the old West.

Too much comfort cannot last, and soon the clouds became solid and forced the planes higher and higher until finally they were just above the 13,000-foot level. Here it was too cold to lie back and relax. More thought was given to the nice warm winter flying suits which had been left behind at Miami. And here no drift readings could be taken from the water. More and more often the three navigators took sun shots and compared notes for lack of something to do. But at about one fifteen the Squadron had passed beyond the wind shift line and again was able to drop down to the 7,000-foot level where, although it was not so cold, it was still considerably chilly. The clouds became broken. New drift sights were taken and ground speeds computed.

According to the figures, the flight was nearing the coast of Panama around three o'clock when it was decided that it was better to go down through the clouds while still over water rather than wait for the hilly terrain of Panama to greet the planes as they emerged through the clouds. Consequently the noses were pushed over, and at 1,700 feet the clouds were above and the water was below. In a few minutes the green hills in the vicinity of historic old Porto Bello could be seen off to the left thrusting their round heads up into the clouds. Then almost directly ahead Minas Bay appeared. In just a few more minutes the planes had thundered on across the Isthmus to Panama City and were circling for a landing at Albrook Field, 1170 miles from Miami. It was the first mass flight of land planes ever to attempt the crossing.

At Albrook Field, General Brett, who commands the 19th Composite Wing, and Colonel Weir, commanding Albrook Field, quickly took over the servicing of the planes for the return flight and the assignment of officers and men to quarters. Before all of the personal baggage could be collected, the depleted gas tanks had been filled. Work was then called off until eight o'clock Sunday morning. But by noon on Sunday, all of the planes except one had completed the maintenance inspections and minor adjustments on engines and accessories. Before two o'clock the last plane had been tuned and was ready for the flight back to Miami.

The arrival of the flight at Albrook Field was coincidental with the festival week in Panama. Consequently, there was an added air of jollity combined with the warm comradely welcome and hospitality of the Albrook Field personnel. The people on the flight, the people of Albrook and France Fields, the native Panamanians, and the over present tourists made a noisy, pleasant crowd. Neither the officers nor the enlisted men could praise enough the service and treatment given them.

After a day of rest on Monday, the Squadron lifted the heavily laden planes from Albrook Field at seven-forty on Tuesday morning. The breakwater at Colon was crossed again approximately an hour behind the "Duck", which was already winging its weary way back across the water.

Head winds were forecast for the greater part of the return trip, and it was apparent that for safety the flight should conserve all the gasoline possible, although there had been an ample amount left in the tanks at the end of the outbound trip. Consequently the motors were throttled back and the planes eased along at 1000 feet just below the clouds. Now there were no holes in the clouds to look down through, and nothing to see except water. But what water! Stirred up and maddened by a 37-mile north-northeast wind, there were white-caps everywhere. Visibility was none too good and the Squadron shoved along monotonously hour after hour with yet more monotonous hours in view, except for the one break of passing the "Duck" which was offering its moral support and friendliness. There was nothing to do but listen to the hum of the motors and look at the waves.

Suddenly everyone was wide awake; not only awake but keyed up and on their toes. A radio call from Captain Cousland, piloting Number 90, started it. His left motor was dead! He couldn't hold his altitude with the right motor. It was over-heating badly. Apparently he was going to have to put his heavy land plane down on the rough waves of the Caribbean at exactly the greatest distance from land. Could he get away with it? Could he make a safe landing? Could even the "Duck" make a safe landing in such rough water? Could it pick up the four people in the disabled bomber? Could it get off the water with them? There was hardly a possibility of it. They would have to drift around and test out their safety equipment and emergency rations.

Quickly, Numbers 41 and 43 were detailed to stand by No. 90 until the "Duck arrived. They dropped back. At the same time, the long-range radio set started to hammer out its message to the "Duck" and to land stations. These had been prearranged for just such an emergency.

In a minute someone called that he did not believe No. 41 understood the orders to stand by; that he was coming on behind the flight. No. 41 replied that he understood, but that the "Duck" was approaching only a short distance away

and could surely see No. 90, as he was headed right for it.

Just then No. 92 called to say that No. 90 had landed safely. It did not seem possible. It was not a question of Cousland being either awfully good or awfully lucky. He had to be both. A repeat was asked for on the message. Again No. 92 said that No. 90 had landed safely and his mechanic had seen the splash as the plane hit the water. There was nothing the flight could do; it was up to the "Duck" from there on. The eight remaining planes were counted and put back on the course to Cienfuegos.

What was that? Someone had called that there was a single plane about 45 degrees behind the Squadron on the right. He must be foolish. But sure enough, there was a plane which was seen only faintly through the lower fringes of the clouds. Who could it be? Cousland was in the water and the "Duck" was with him. Certainly, there were no strangers flying around in the middle of the Caribbean. The Squadron turned slowly to get in front of the stranger and gave him a radio call, telling of their relative position. A couple of minutes more and No. 90 was calling to say that he was rejoining the formation. You couldn't believe your ears. Was somebody crazy? Why he was lucky to have landed without cracking up and he couldn't have lifted that plane out of the water with a derrick. But take a count of the planes. That cannot be right; count them again. Still the answer was nine. Oh, well; possibly the days of miracles are not over. But when the details came in, the answer was simple.

Dropping slowly down with one motor Captain Cousland struggled and struggled to get his left motor going again. When he had dropped to 600 feet a quantity of black oily "goo" bubbled from his exhaust. Then the motor started with a roar. Do you wonder what his thoughts were as he dropped down and as he slowly climbed back up into position? As he reached his lowest point it looked as though the plane was right on the water. The mechanic in No. 92 had mistaken the the breaking of a big white-cap for the splash of the plane in landing.

Later, safely on the ground, Captain Cousland was asked how long his left motor had been completely out. He answered with characteristic brevity and truthfulness:"Just exactly four thousand years".

That experience seemed to be enough for one day, because the clouds became more broken and the Squadron climbed up through them, finally reaching an altitude of 9000 feet on top. To show that fortune was again on the side of the planes, the strong head winds gradually changed to tail winds. Cuba was sighted in front and quickly left behind. Biscayne Bay was seen beyond the Gulf Stream clouds, and soon Miami loomed up straight ahead.

The grind was over. The Squadron was back safely. A mass flight of land planes had twice crossed the Caribbean between Miami and Panama without an accident - almost. That was the shameful part of it - that word, "almost". An accident was just ahead waiting for the unwary in order to mar an otherwise perfect flight.

On the previous Friday, the ground radio station at Miami had given the Squadron explicit landing instructions, including the runway to use, the direction of landing, the wind, and the parking area. Consequently, when the Squadron asked for landing instructions on Tuesday and was told that it would land in the same manner as on the previous visit, it was understood that the same runway was to be used and that the landing was to be made in the same direction as on Friday. But the ground station had intended these instructions to apply only to parking the planes in the same manner and in the same area as on Friday. As a result, the planes were brought in down wind.

As he approached the runway, Major McDuffie, who was piloting the leading plane, realized that an error had been made. He opened his throttles sufficiently to keep his plane in the air,at the same time calling to the others planes not to land but to stay in the air. The second plane did not receive this message and did not see the lead plane continue on across the field. It had lost so much flying speed that the pilot was afraid to open his throttles for fear that he could not clear the wires at the far end of the runway and would crash into the automobiles parked at that point. Rather than endanger these people,he chose to complete his down-wind landing, hoping to "ground-loop" at the end of the runway when the plane had slowed up sufficiently. But when he did "ground loop", the speed of the plane was still too great and the landing gear crumpled as the wheels hit the soft sand.

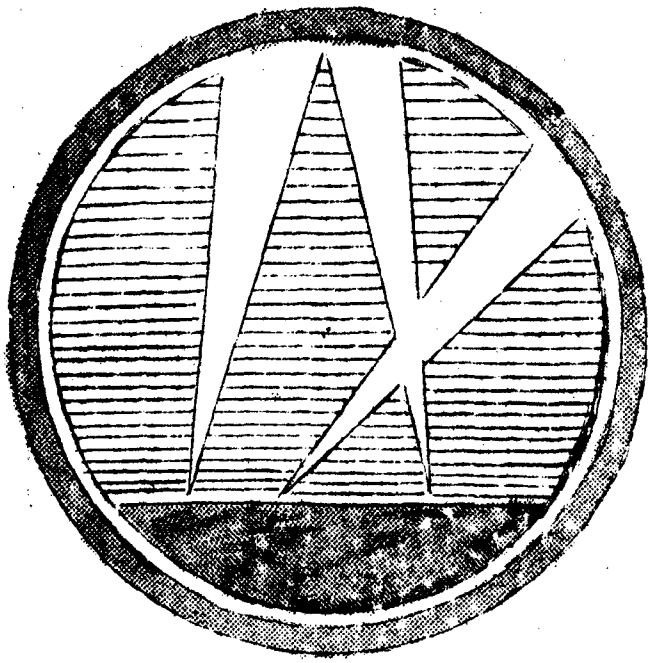
All of the remaining planes continued across the field, turned around and landed in the opposite direction.

The planes were held on the ground at Miami on Wednesday because of poor flying weather - it was reported from Titusville that even the birds were walking to their shelters that day. But on Thursday, the Squadron was again up and away, nosing its planes through the low flying clouds and light rains. The planes were forced to stay below 500 feet for the first two hours and often were forced down to 300 feet. However, after plugging along against a strong north wind, the planes prevailed over the rain and clouds and emerged into bright sunshine near Jacksonville. From

(Continued on page 10).

V-7248, A.C.

NINTH BOMBARDMENT SQDN., HAMILTON FIELD



HISTORICAL RECORD: Organized as the 9th Aero Squadron from Co. "E," Provisional Aviation School Squadron, May 31, 1917, at Kelly Field, Texas. Opened Selfridge Field July 5, 1917, with the 8th Aero Squadron and there assembled the first airplane to fly at that field. October 27, 1917, to Mineola, Long Island. November 22, 1917, to Halifax via the "Carpathia." Trained by flights; "A" Flight to South Charleston with Sopwith Camels; "B" Flight to Scrampton, Lincoln, with scout planes; "C" Flight to Spittlegate with observation planes; "D" Flight to Harlaxton, Grantham, for motor instruction. February 8, 1918, reassembled and took over work of 24th Wing, 12th Group, Royal Flying Corps. At the beginning of the St. Mihiel offensive, the Squadron was organized for night flying and reconnaissance. First trip over the lines from Amanty, September 14, 1918. September 20, 1918, moved to Navincourt and attached to the 1st Observation Group till the Armistice. After the Armistice assigned to the Third Army Air Service with the Army of Occupation in Germany. Inactive March 24, 1923. Active, April 1st, 1931, with Captain Leo F. Post in command, as part of the 7th Bombardment Group, March Field.

Transferred to Hamilton Field, Calif., as part of the 7th Bombardment Group, December 5, 1934. Captain Kenneth M. Walker is at present in command.

BATTLE HONORS: Entitled to silver bands on Guidon engraved: Lorraine, St. Mihiel, Meuse-Argonne.

DESCRIPTIVE INSIGNIA: Three tapering searchlight beams form the Roman Numeral IX, as well as signifying the three engagements during the World War. In the original design a war time Bombardment airplane was dropping bombs on a German village. Regulations governing insignia required the removal of the airplane and the village.

APPROVED INSIGNIA: On a black disc and within an orle of silver another disc divided per fess debased gray and black, on gray portion three piles arranged to form the Roman numeral IX in silver.

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The Flight to Panama and Return
(Continued from Page 9).

there on it was smooth sailing.

Leaving the true course at Charleston, Major McDuffie yielded to his vanity and led the Squadron across his home town of Marion, S.C., at two o'clock. Then the planes were put on the last lap for Langley Field. The final landing was made at three forty-five in the afternoon, just a week after the take-off for the tropics. The flight was over. The planes were put away to be groomed for more work. Everyone was glad to have made the trip. Everyone was glad to be home again.

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BOLLING FIELD OFFICER GOES TO ITALY

In compliance with War Department orders, Captain Jack C. Hodgson, Air Corps, will shortly be relieved as Operations Officer at Bolling Field, D.C., and will sail for Rome to take up the duties of Assistant Military Attache for Air to Italy.

Captain Hodgson will also serve in that capacity to Greece, making his headquarters in Rome and occasional official visits to Athens.

As a graduate of the Army Industrial College, Infantry School basic course, Air Corps primary flying course and Advanced Flying School Pursuit course, Captain Hodgson is well qualified for his new assignment. During his two years at Bolling Field, most of which time he was Operations Officer, he had become a familiar figure to Government officials as well as Army, Navy and civilian airmen.

Always ready and willing to give cooperation and personal suggestions to pilots arriving at and leaving Bolling Field, Captain Hodgson and his well known congeniality will be greatly missed, but he goes to his new work with the wishes of continued success and Godspeed from his host of friends both within and outside of the military service.

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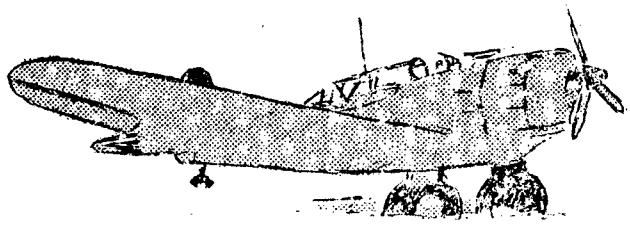
Captain Thomas D. White, Air Corps, whom Captain Hodgson is relieving as Assistant Military Attache for Air to Rome, Italy, is under orders for duty at the Air Corps Tactical School, Maxwell Field, Ala., in the 1937-1938 course.

PERFORMANCE OF A-17 PLANE ON SNOW-COVERED GROUND



An informal report on the performance of an A-17 Attack plane under the combined conditions of snow, high altitude and low temperature was recently rendered by 2nd Lieut. Noel F. Parrish, Air Corps, of the 13th Attack Squadron, Barksdale Field, La.

The performance of this test occurred through necessity and not through any prearranged plan, and hence there was no preparation. The locale of this test is described in the report, as follows:

Lonesome Valley is a small, mountain-circled plain near the center of the high plateau that is central Arizona. On the southwestern rim of Lonesome Valley, at an altitude of five thousand feet above sea level, is the Ernest A. Love Municipal Airport of the City of Prescott. It is a good airport, composed of firm, gravelly soil, and consisting principally of one broad runway almost a mile in length which slopes uphill toward the prevailing wind. The Department of Commerce reports "hangar and aviation fuel, day and night." But the aviation fuel has been discontinued and the best of three private hangars present is a box-car with one side knocked out. Useable facilities consist of two good wind-socks and one uninformed caretaker. However, the field is definitely sheltered from violent winds, and both rain and snow are rare.

Lieut. Parrish, accompanied by a mechanic, landed at the Prescott Airport on the morning of December 30th, last. Since information had been received that the field was covered with less than two inches of snow, no difficulty in landing or taxying was expected, and none was encountered. The temperature was well above freezing and the light snow showed no tendency to cling to the wheels. Clouds hung about the higher mountains, but the valleys were clear, and conditions appeared to be improving after three days of bad weather. The pilot consulted the local weather observer and was informed that the snow then present had been the heaviest fall in the past six years. Fair weather was predicted for the following day.

Three hours after landing, the sky had become overcast and the ceiling was dropping rapidly into the valleys. Take-off was inadvisable, so the plane was engine-covered and staked down for the night. During the night the sky cleared, but at daybreak clouds appeared and a light snowfall began which continued all day and night and became very heavy to the accompaniment of strong winds.

On the morning of January 1, 1937, the airport was covered with snow, the minimum depth of which was 18 inches. The snow was fresh and soft, so that a good automobile could proceed through it in low gear. The coverage was uniform, varying less than six inches, and there were no drifts.

Strangely enough, since the airplane had been faced directly into the wind, its own aerodynamic characteristics had, during the storm, kept it, and the space around and beneath it, almost entirely clear of snow. But this space was surrounded by a barrier of snow almost two feet in depth. The wings were covered with a thin coating of ice. It would have been difficult, though necessary, to remove this ice without damaging the finish. Fortunately, the temperature rose during the morning from 18 degrees above zero to a few degrees above freezing, and the ice coating melted. Ice in the carburetor bowl also melted, as had the ice on the ground, making it possible to free the wheels from the ground. The mechanic, after turning the propeller through by hand several times, was able to start the engine without difficulty.

On January 1st, low ceilings persisted, but it was thought possible to reach Phoenix - provided the airplane could be gotten off the ground - and thus avoid the possibility of more snow. Inquiry as to the possibilities of getting the field cleared revealed the fact that the almost unprecedented snowfall had created serious problems throughout the entire region. Mountain roads, including important highways, were blocked by deep drifts. Towns, communities, ranches, CCC camps, were isolated, and the few available snow plows were making desperate efforts to reach them. The best local comment was to the effect that the problem would remain for weeks, as would most of the snow, and possibly A-17 airplane No. 35-180.

The pilot at first believed that he would be unable even to taxi the plane through snow of such depth, but upon the mechanic's insistence the experiment was attempted. Surprisingly, the plane was able not only to drag itself through the stuff, but was able to do so at fair speed. Taxying uphill required almost full throttle, but less than three quarters throttle was required for downhill taxying. It appeared possible that a long downhill run might produce enough speed to free the plane from the snow.

Before such a run was attempted, it was necessary to establish the following facts by investigation and experiment:

1. The strong propeller blast required

for taxying even at slow speeds made it possible to keep the plane's tail down despite the tripping effects of the snow.

2. The streamline pants scooped up some snow, but there was no tendency for it to clog or bind the wheels.

3. Use of brakes had little effect in the snow, but the snow itself had a tremendous braking effect and could be counted on to stop the plane eventually, even though it was necessary to ease the throttle back slowly and cautiously to avoid nosing up.

4. Although runway and boundaries were completely obscured, a take-off route was selected and found to be free of hidden obstructions or deep drifts.

From the top of a small knoll at the west end of the field, the plane was driven at full throttle foremore than half the length of the field. It attained a speed of probably fifty miles an hour early in its run, and that was all it could do. It was slowed down very gradually and finally run upon a small knoll at the lower end of the field to avoid cutting the throttle too rapidly and nosing up. The total run was almost a mile. The plane was immediately taxied back and another effort made, with the same result. Head temperature had risen to 250 degrees, so the engine was stopped to permit cooling while the pilot developed a new plan of action.

Two local pilots offered information and assistance. One offered to take down the fence and suggested taking off on the nearby highway, which had been cleared. But the highway ran across uneven ground and there was a slight cross-wind, so the pilot vetoed this suggestion out of consideration for women and children who were present.

Instead, it was decided to have three automobiles present plough up and down the take-off path in the hope of lessening the snow's resistance. Assistance was enthusiastic, and a narrow strip was soon well rutted for some distance. It was impossible by this method to pack the snow in any uniform manner, for the snow was so deep that one automobile stalled. But it was hoped that the airplane in trying to take off might roll in some of the interlacing ruts and gain a little speed. The airplane was taxied up and down a couple of times, after which it was necessary to stop the engine again to prevent high head temperatures.

Finally, ttwo more attempts were made which were slightly more encouraging, because plane and motor seemed faster, despite the difficulty of staying on the narrow path which was invisible from the cockpit. It was now getting late in the afternoon, and the snow was becoming somewhat bumpy. A small log was secured to a Ford V-8 and dragged up and down the path, but results were superficial.

On another attempt, one wheel was seen to rise slightly. During all these efforts it was necessary to keep the stick back somewhat to counter nose-heaviness, so flaps were used timidly lest they blanket the flippers. But on this attempt they were pumped well down.

After allowing the engine to cool, another and similar attempt was made with some hopefulness. But this time a strange thing happened. The airplane suddenly failed to gain even fast taxying speed. An increase in nose-heaviness was noticeable to the pilot, and the plane slowed down with embarrassing suddenness as the throttle was reduced.

Suspicions were confirmed when an inspection showed the wheels had been sliding through the snow during a part of the run and that the snow in the streamline pants had suddenly begun to act as a brake. With increasing difficulty, the plane was taxied to the parking space and staked down for the night. Inspection showed that the tire surfaces had been slightly scored in turning.

This sudden change in the effect of the snow was mystifying until it was noticed that the temperature had by this time dropped to well below freezing. The snow in the pants which, in a semi-melted state, had previously allowed the wheels to turn through it without appreciable friction, had begun to freeze, expand and tighten against the tire. Friction of the turning tire melted for a time the snow which touched it, but the mass was constantly freezing from the outside, changing into ice, expanding and pressing even more forcibly against the surface of the tire.

On the night of January 1st, an offer of the National Guard Commander to turn out the National Guard was declined. (The Commander was a war pilot.)

During the night the temperature dropped to one degree below zero. On the morning of January 2nd, the airplane's starter would not work. The airplane was covered with so heavy a frost that it made the radio antenna appear as large as a small rope. The mechanic turned the propeller through several times. The motor was cranked by hand and started in less than ten minutes.

By this time the temperature had risen to almost twenty degrees, and it was hoped that continued sunshine might result in a thawing temperature during mid-afternoon. An effort was made to clear the ice and snow from about the tires. This proved very difficult, indeed. It was necessary to chisel two inches of solid ice from the pants-enclosed surfaces of the tires. It was impossible to remove the pants without the use of a hoist or jack. No hoist was available, and the use of a jack was known to be dangerous. So two hours were devoted to prying and punching about the inner surfaces of the wheels, removing ice from beneath the pants in small chunks. Adobe mud from

the Prescott field had frozen into the solidity of bricks and some of it could not be removed by any means available.

Finally, the wheels were almost free, and another take-off attempt was made. The snow had settled somewhat and lost a few inches of depth, but had perhaps become more firm and resistant. The first effort was discouraging, since the wheels were obviously binding already, due to the fact that the temperature had failed to rise above freezing.

Within five minutes, the plane could scarcely be taxied. Again the wheels were partially cleared and another take-off effort was made, with the same results. The wheels would begin to bind before the plane could be taxied into position on the pathway.

At this time information was received that Fort Whipple, Army Tubercular Hospital in Prescott, possessed a small snow plow which might possibly be borrowed. But this would require a day's delay. A final effort was planned. The plane was taxied into position at the steepest and most favorable portion of the pathway which had by this time been churned into a bumpy, rutted, irregular strip of snow, averaging a few inches less in depth than the fifteen to eighteen inches which still covered the rest of the field. Automobile tracks were made along one side of this path, so that the pilot could estimate its location more accurately. The wheels were again partially cleared. A faint uphill wind had arisen. Flaps were pumped down 20 degrees. As the plane started down the runway, the motor began missing slightly, but halfway down the stretch it picked up and gained a little speed. The pilot felt a slight buoyancy. He eased forward on the stick slightly, then back again. The plane bumped less forcibly, but the wheels, particularly the tail wheel, continued to drag in the snow for several yards. They chey were free.

The run had been slightly more than half a mile, down a grade of 3% or more, carrying 110 gallons of gasoline.

No take-off would have been attempted had it not been known that the temperature at Phoenix, 80 miles away, was well above freezing, for the wheels were no doubt already beginning to freeze up again as the plane left the snow.

The Phoenix airport was circled several times to allow melting. The plane bounced a couple of times before landing to make sure melting had occurred. A few handfuls of snow were found in the pants, melting rapidly. There were also several handfuls of snow inside the tail and rudder.

Had no warmer temperature been available, perhaps the best alternative would have been to land under power in more snow and hope that the wheels would skid. The same difficulty might also occurfrom an accumulation of mud freezing inflight.

Each morning at Prescott the removal of the carburetor bowl plug disclosed ice. On the first day, this soon melted and ran out as water, but on the second day it failed to melt even after the engine had been warmed up. Lacking hot water, the problem of removing it was a serious one. The drain plug hole was finally bored clear with a screwdriver.

The plane developed an intermittent miss which grew steadily worse after leaving Prescott. At Phoenix the lower plugs were removed and most of them found to be oily. The mechanic thought this condition might have been aggravated by low temperatures. Even after new plugs had been installed, when the plane was started at Albuquerque after storage in an unheated hangar with the temperature a few degrees above zero, the bottom cylinders failed to fire at first and threw so much raw gas into the exhaust pipes and under the cowling that it seemed a fuel line had broken. However, these cylinders soon picked up and ran well.

On the return trip across northern Arizona, near zero temperatures were encountered in flight and it was impossible to prevent the head temperatures from falling below 200 unless the altitude control was used. It was necessary to maintain considerable throttle during any long descent to prevent rapid loss of head temperature and poor engine performance.

The "outside temperature gauge" in the cockpit sometimes read well above temperatures reported along the route, particularly when the sun was shining on the plane.

Conclusions.

1. Landing in deep snow with an A-17 airplane would be very difficult, but might be performed without nosing up by skillful and plentiful use of the throttle at the right moment with the stick well back as the wheels entered the snow, and by slowing down gradually.

2. Snow will not seriously bind the wheels of an A-17 airplane with pants while the temperature is above freezing, but when the temperature is below freezing, soft snow will, by a process of packing, melting, and freezing again, develop a pair of self actuating ice brakes in less than a minute of taxying which will completely lock the wheels. Such a condition would cause almost certain disaster if a subsequent landing were attempted without thawing.

3. Brakes are not effective on a slick-tired airplane in soft snow.

4. The A-17 will start with surprising ease and will perform commendably well in very chilly weather.

5. An ice coating can be completely and safely removed from an airplane only by thawing.

6. An A-17 will take off at 5,000 feet through half a mile of churned snow more than a foot in depth - provided everything

else is just right. However, the process of getting everything else just right, while in no way damaging the airplane, is a considerable strain on the crew.

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NEW STUDENTS FOR AIR CORPS TECHNICAL SCHOOL

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers have been assigned to duty as students at the Air Corps Technical School, Chanute Field, Rantoul, Ill., to pursue various courses of instruction, viz:

Airplane Maintenance Engineering

1st Lieut. Charles B. Dougher, Mitchel Field, NY
1st Lieuts. David R. Gibbs, Thetus C. Odom, 2d
Lieut. Russell L. Waldron, Langley Field, Va.
1st Lieut. Louis A. Guenther, Brooks Field, Tex.
1st Lieut. Frank G. Jamison, Selfridge Field.
2nd Lieut. Lawrence S. Fulwider, Fort Leavenworth, Kansas.
1st Lieut. Richard L. Montgomery, Chanute Field.
2nd Lieuts. Byron E. Brugge and Jack E. Shuck, Hamilton Field, Calif.

Communications

1st Lieut. Carl F. Damberg, Mitchel Field, N.Y.
1st Lieut. Edward J. Hale, Maxwell Field, Ala.
1st Lieut. William R. Morgan, Randolph Field, Texas.
1st Lieut. Samuel A. Mundell, Panama Canal Dept.
1st Lieut. Travis L. Hetherington, Chanute Field, Ill.
2nd Lieuts. Jasper N. Bell, George B. Dany, Douglas W. Smith, John W. White, March Field, Calif.

Armament

1st Lieut. Melie J. Coutlee and 2nd Lieut. Charles H. Leitner, Jr., Barksdale Field, La.
1st Lieut. Jarred V. Crabb and 2nd Lieut. Eugene Brecht, Jr., Selfridge Field, Mich.
1st Lieut. John C. Horton, Randolph Field, Tex.
1st Lieut. Stanley R. Stewart, Brooks Field, Tex.
2nd Lieut. Thomas F. Langben, Mitchel Field, N.Y.
1st Lieut. William L. Travis, Mitchel Field.
2nd Lieuts. William M. Gross and Joseph C. Moore, March Field, Calif.

Photographic

1st Lieut. Jerald W. McCoy, Kelly Field, Texas
1st Lieut. Donald L. Hardy, March Field, Calif.
2nd Lieut. Hilmer C. Nelson, Mitchel Field, N.Y.

Officers assigned for duty as students in the Airplane Maintenance Engineering course are under orders to report to the Commandant of the Air Corps Technical School not later than Aug August 15, 1937, with the exception of Lieut. Montgomery, who is to report August 30, 1937; Communications course, date of reporting for duty, September 19, 1937, with exception of Lieuts. Mundell and Hetherington, who are to report October 4, 1937; Armament course, date of reporting for duty, November 15, 1937, with the exception of Lieut. Travis, who is to report December 1, 1937; Photographic course, date of reporting for duty, August 23, 1937.

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Lieut. Colonel Ralph Royce, who has commanded the 1st Pursuit Group, Selfridge Field, Mich., for a number of years, is under orders to proceed to the Philippines for duty.

PURCHASE OF AIRCRAFT ENGINES

The Secretary of War, Hon. Harry H. Woodring, announced on March 6th the purchase from the Wright Aeronautical Corporation, Patterson, N.J., of 141 Model R-1820-49 geared cyclone engines. The total amount of the contract is $1,099,729.50.

Of these engines, 109 are being provided for installation in a similar number of O-47A Corps and Army Observation airplanes being constructed by the North American Aviation, Inc., Inglewood, Calif., the announcement for contract of which was made on November 19, 1936. The remaining 32 engines are provided as spares.

The engines being purchased are of the single row radial type, developing 1000 horsepower for take-off and 800 h.p. at 4,000 feet and 2,100 r.p.m.

Prior to awarding this contract, this engine was subjected to the rigid type test made by the Air Corps Materiel Division, Wright Field, Dayton, Ohio, and proved to be highly efficient and reliable.

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NEW COMMANDER FOR SECOND BOMBARDMENT GROUP

A new hand is at the controls of the Second Bombardment Group, Langley Field, Va., in the person of Lieut. Colonel Robert Olds, who has succeeded in this position Lieut. Colonel Charles B. Oldfield, now on leave and soon slated to assume command of all Air Corps activities at Fort Lewis, Wash.

Colonel Oldfield, a native and former civilian resident of Norfolk, Va., served in the Army in many capacities before he assumed command of the Second Bombardment Group a few years ago. During the operation of the Air Mail by the Air Corps in 1934, he was on the staff of Brigadier General Henry H. Arnold, then commander of the Western Zone. Before coming into the Air Corps in 1920, he served in the Infantry for eight years, passing from private to the temporary grade of Major in that period.

Colonel Olds' assignment prior to assuming command of the Second Bombardment Group was that of Assistant Inspector, GHQ Air Force, Langley Field. A native and former resident of Woodside, Md., he enlisted in the Air Reserve three months before hostilities. He was commissioned a 1st Lieut., Aviation Section, Signal O.R.C., June 25, 1917, and promoted to Captain, September 3, 1918. Appointed a 1st Lieut., Air Corps, Regular Army, July 1, 1920, and promoted to Captain the same date, and to Major, August 1, 1935. He was promoted to the temporary rank of Lieut. Colonel, August 27, 1936. He graduated from the Air Corps Tactical School in 1928, and from the Command and General Staff School, Fort Leavenworth, Kansas, in 1935.

Colonel Oldfield graduated from the Tactical School in 1931, and from the Command and General Staff School in 1933, and completed his flying training in 1921.

Both Colonels Oldfield and Olds are on the General Staff Corps eligible list.

V

FAST TRAVELING FOR CHIEF OF GHQ AIR FORCE

Covering every one of the three wings of the General Headquarters Air Force in less than 18 hours' elapsed time, Major General Frank M. Andrews, commander of that organization, flew his Douglas transport "flagship" from March Field, Riverside, Calif., to Langley Field, Va., headquarters of the Air Force, in 14 hours and 39 minutes actual flying time. General Andrews landed at Langley Field at 2:34 o'clock on the morning of February 26th.

Departing from March Field, the headquarters of the 1st Wing, at nine o'clock E.S.T., on the morning of February 25th, General Andrews arrived at Biggs Field, Fort Bliss, El Paso, Texas, at 12:45 p.m., E.S.T., and lunched there. Between 2:00 and 5:00 p.m., E.S.T., that day, he flew between El Paso and the headquarters of the Third Wing, GHQ Air Force, at Barksdale Field, Shreveport, La.

Still following the southern route, General Andrews departed from Barksdale Field at 6:15 p.m., E.S.T., arriving at Lawson Field, Fort Benning, Columbus, Ga., at 9:30 p.m., E.S.T. Leaving the home of the Infantry School at 10:45 p.m., E.S.T., he arrived at Langley Field at 2:34 a.m., as above stated.

Colonel Hugh J. Knerr, Chief of Staff of the GHQ Air Force, pointed out afterwards, in a statement to the press, that the flight demonstrated how quickly the command post of the GHQ Air Force can be shifted from coast to coast in case of an attack on the continental United States. Most of the airplanes with which the GHQ Air Force will be equipped by the close of 1937 have cruising speeds enabling them to duplicate this feat, Colonel Knerr stated.

Accompanying General Andrews on this flight was Brigadier General Delos C. Emmons, Commander of the First Wing of the GHQ Air Force, March Field. He paid his first visit to Langley Field since his return from the Hawaiian Islands in June, 1936. He commanded the 18th Composite Wing at Schofield Barracks, T.H. An eleven-gun salute was tendered him at 11:00 o'clock, February 26th.

The purpose of General Emmons' visit to Langley Field was to discuss Air Force matters and to observe Langley Field training methods. On the morning of February 26th, General Andrews held a long conference with General Emmons; General Pratt, Commander of the Second Wing at Langley Field; Colonel Walter R. Weaver, commander of the Langley Field Air Base, and high ranking members of the GHQ Air Force staff.

While at March Field, General Andrews observed the performance of the Boeing B-17 Bombardment plane, which was temporarily used by the 19th Bombardment Group at the Pacific Coast station for a few days. The plane, which is manufactured in Seattle, Wash., arrived at Langley Field, where it will be used by the Second Bombardment Group. It has four motors and is one of the largest combat planes ever made for the Army.

Other passengers in General Andrews' plane on the eastward flight were Major Clements McMullen and the usual crew of enlisted men.

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AIR CORPS RESERVE UNIT AT BOLLING FIELD

Captain H.R. Baxter, Air Corps, the Post Inspector of Bolling Field, is also the Unit Instructor for the officers of the Air Corps Reserve in the Washington District.

With the approach of more favorable flying weather, Captain Baxter contemplates an effort on the part of twenty odd officers to equal in practice by actual pilotage and observation the valuable theoretical instruction they have received during the months of cold and inclement weather.

During the past few weeks, many applications for commission have been received, and Captain Baxter has been conducting written and flying examinations as often as the tasks of his other duties will permit.

The Air Corps Reserve regular monthly meetings and instruction courses are conducted on the first Tuesday of each month in the projection room of the Munitions Building, located at Constitution and 18th Street, and at least one guest speaker is always present. As the speaker is generally an officer or civilian directly connected with or otherwise interested in aviation, the talks are always interesting and entertaining.

A cordial invitation is extended to Reserve officers of all branches and from all districts who may be sojourning in Washington to attend these meetings.

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TURKISH OFFICIALS VISIT BOLLING FIELD

Major Samuel C. Eaton, Jr., and Captain Jack C. Hodgson recently escorted several officials of the Turkish Government on a tour of Bolling Field. The visitors had an opportunity of viewing many different types of Army and civilian airplanes, due to a large number of visiting planes to the field and to the Department of Commerce hangar on that particular day, and they expressed their admiration of the efficiency with which Bolling Field is operated.

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Special Orders of the War Department recently issued relieve Colonel Frederick L. Martin, Executive, Air Corps Materiel Division, Wright Field, Dayton, Ohio, and assign him to station at Barksdale Field, Shreveport, La., for duty with the Third Wing, GHQ Air Force.

V-7248, A.C.

LIEUT. COLONEL HUME PEABODY

Lieut. Colonel Hume Peabody, now on duty as Executive and Operations Officer of the 18th Composite Wing, Fort Shafter, T.H., was born November 24, 1893, at Shinglehouse, Pa. Graduating from the U.S. Military Academy, West Point, N.Y., June 12, 1915, he was commissioned a Second Lieutenant and assigned to the 3d Cavalry. He served with his regiment in the Brownsville, Texas, District, from September 12, 1915, to March 15, 1917, and participated in skirmish with bandits at Tahuachal and at Villa Verde Ranches, Mexico, June 17-18, 1916. He was stationed with his regiment at Fort Sam Houston, Texas, to August 28, 1917. He was promoted to 1st Lieut., 3rd Cavalry, July 1, 1916, and to Captain of Cavalry, July 3, 1917.

Detailed to the Aviation Section, Signal Corps, Colonel Peabody was assigned to the Aviation School at San Diego, Calif., where he was on duty as an instructor in aerodynamics, at the same time undergoing flying training.

Transferred to Ellington Field, Houston, Texas, he was on duty as Assistant to the Officer in Charge of Flying Training from February 15, 1918, to March 20, 1918, when he was assigned to duty as Officer in Charge of Flying at Eberts Field, Lonoke, Ark.

From May 13 to to September 7, 1918, Colonel Peabody was a student at the School for Aeronautical Engineering, Massachusetts Institute of Technology, Cambridge, Mass., following which he was ordered to duty overseas. He was on duty in France with the A.E.F., as technical representative of General Staff Mission from November 1 to 20, 1918, and then returned to the United States and was assigned to March Field, Riverside, Calif., where from December 16, 1918, to June 29, 1922, he performed various duties, such as Officer in Charge of Cadet Department to September 30, 1919; Instructor, Garrison School, January 1 to March 11, 1919; Officer in Charge of Forest Fire Patrol, May 6, 1919, to July 3, 1919; Summary Court Officer; Recruiting Officer; Executive Officer, July 18 to August 15, 1919; Instructor, Educational and Vocational Training, September 15 to November 30, 1919; Officer in Charge of Ground Instruction, October 1, 1919, to August 31, 1920; Commandant of the Flying Cadet Detachment, December 13, 1919, to September 30, 1920; Officer in Charge of Training, June 1, 1920, to June 30, 1921; Commanding Officer of the post, June 26, 1921, to June 29, 1922; and Commanding Officer of the 19th Pursuit Squadron, October 10, 1921, to June 29, 1922.

Transferred to the Hawaiian Department, Colonel Peabody commanded Luke Field and the 5th Composite Group, July 16, 1922, to October 31, 1922, when illness forced him to return to the United States. After a number of months at the Letterman General Hospital, he was assigned, January 25, 1923, as Assistant Air Officer of the 9th Corps Area at San Francisco, Calif., and as Commanding Officer of the 33rd Air Intelligence Section of that Corps Area.

On May 4, 1923, Colonel Peabody was assigned to duty as Professor of Military Science and Tactics, University of California, Berkeley, Calif., and he continued on this duty until the summer of 1928, when he was transferred to Langley Field, Va., for duty as a student at the Air Corps Tactical School. Following his graduation from this school in June, 1929, he continued his status as a student officer at the Command and General Staff School, Fort Leavenworth, Kansas, and upon completing a two-year course thereat, was assigned to Maxwell Field, Ala., for duty as Assistant Commandant of the Air Corps Tactical School. Towards the latter part of his tour at Maxwell Field, he served as a member of the Air Corps Board, until July 24, 1934, when he was assigned to duty as student at the Army War College, Washington, D.C. Upon his graduation from this institution in June, 1935, he was transferred to the Hawaiian Department.

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LIEUT. COLONEL EDWIN B. LYON

Lieut. Colonel Edwin B. Lyon, now stationed at Randolph Field, Texas, and Assistant Commandant of the Air Corps Primary Flying School, was born at Las Cruces, New Mexico, December 8, 1892.

Upon graduating from the U.S. Military Academy, June 12, 1915, he was commissioned a Second Lieutenant and assigned to the 7th Cavalry. From September 14 to December 25, 1915, he served with the 9th Cavalry at Douglas, Arizona, awaiting the arrival of the 7th Cavalry from the Philippines, and thereafter with his regiment on border duty to March, 1916, and with the Punitive Expedition into Mexico to December 21, 1916.

Detailed to the Aviation Section, Signal Corps, Colonel Lyon completed the course of instruction at the Aviation School, July 27, 1917, when he was rated a Junior Military Aviator. He continued on duty at San Diego until June 15, 1918, in the capacity of Supply Officer. During April and May, 1918, he served as President of a Board for the establishment of coast defense sites on the Pacific Coast.

Transferred to Ellington Field, Houston Texas, where he completed a course of instruction in Bombardment aviation, on

September 1, 1918, he then took the course in aerial gunnery at Carlstrom Field, Arcadia, Fla., proceeding on November 4, 1918, to Garden City, L.I., New York, for duty with overseas Handley-Page Bombing Group. Upon the signing of the Armistice, he was transferred to the 1st Provisional Wing and assigned to command Group "D" at Henry J. Damm Field. Upon the abandonment of his latter field, he performed various duties at Mitchel Field, N.Y., the last of which being Officer in Charge of Flying.

Relieved from duty with the Air Service and assigned to the U.S. Military Academy, West Point, N.Y., Colonel Lyon returned to the Air Corps August 26,1921, and was placed on duty as Air Officer of the 1st Corps Area. In October, 1923, he began the one-year course of instruction at the Air Service Tactical School at Langley Field, Va. Upon his graduation he remained at Langley Field as an Instructor at the Tactical School until June, 1926, when he was assigned as student to pursue the one-year course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas.

After a two-year tour of duty in Washington, D.C., in the Schools Section, Training and Operations Division, Office of the Chief of the Air Corps, Colonel Lyon was transferred to the Panama Canal Department for station at France Field, where for a brief period he served as Commanding Officer of the post, the 6th Composite Group and the Panama Air Depot; for about 18 months as Commanding Officer of the 25th Bombardment Squadron, and for the remaining period of his foreign service tour as Executive Officer and Adjutant of France Field and the 6th Composite Group.

Returning to Washington for duty as a student at the Army War College, he graduated therefrom on July 11, 1932; was a member of the War Department General Staff, G-4, Washington, for the next four years and, since August 6, 1936, has been stationed at Randolph Field, Texas.

Colonel Lyon was promoted to 1st Lieut. of Cavalry on July 1, 1916, and to Capt., June 28, 1917; to Major, Air Service, July 1, 1920; and to Lieut. Colonel, June 29, 1936. During the war he held the temporary rank of Major. In October, 1919, he participated in the Transcontinental Reliability Test Flight. He is listed as a Distinguished Graduate of the Command and General Staff School.

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From the Commanding Officer of Air Corps Troops, Fort Sill, Oklahoma, comes word that "The flood area has nothing on us. For the past week this portion of the United States has been inundated with a true Old Style Oklahoma Rain (Dust Storm) which has made flying almost impossible, and for those who did attempt to enter the higher stratum it gave them a good opportunity to demonstrate their ability in 'Blind Flying.'"

The above item was written on February 19th.

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AWARD OF SOLDIER'S MEDAL

Official notification was received by the Commanding Officer of Air Corps Troops, Fort Sill, Okla., that the Soldier's Medal has been awarded to Major Frederick D. Lynch, Air Corps, and Staff Sergeant Joseph F. Murray, 1st Balloon Squadron, Air Corps, for bravery in connection with the crash and destruction by fire of a free balloon near Fort Sill on July 10, 1936. The presentation will be made through the Commanding General of the 8th Corps Area.

It will be recalled that Major Lynch and Sergeant Murray were selected for the Cheney Award for 1936.

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ACTIVITIES OF 18TH RECONNAISSANCE SQDN.

The 18th Reconnaissance Squadron, GHQ Air Force, Mitchel Field, N.Y., has qualified all its flying personnel (including the enlisted photographers attached from the 8th Photo Section) as expert aerial gunners. In order to insure that gunners maintain their proficiency, each one is required to fire at least once each month.

Much interest has been shown by the Squadron in the Skeet Range recently constructed on the south side of the flying field by 1st Lieut. J.M. Jones, the Squadron Service Section Commander. The interest is higher than the scores to date, but it is expected that the gunners by diligent practice will acquire the knack of knocking off all the birds even from station 8.

This Squadron has made considerable progress since its organization, September 1, 1936, in the organization and training of the various sections and crews, and after March 1st will concentrate on Dead Reckoning and Celestial Navigation for those officers of the combat crews who are not graduates of a navigation school. Five officers of the Squadron are graduate navigators.

None of the Squadrons on the field are looking forward to the contemplated increase of personnel after March 1st with greater anticipation than the 18th. The News Letter Correspondent states that "when this increase in personnel is consummated, it is hoped that the shopworn expression 'shortage of personnel' will be encased in concrete and buried to a depth from which it may not be exhumed by the hand of man or machine."

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The News Letter would appreciate material from March and Maxwell Fields.

THE COLD WEATHER EQUIPMENT TEST

THE Headquarters Squadron, 9th Bombardment Group, Mitchel Field, N.Y., having been ordered to take part in the Cold Weather Equipment Test, took off, heavily laden with winter clothing and flying equipment, for Selfridge Field, Mich., where Colonel Walter H. Frank, commanding the Test Group, together with his Staff, had already set up temporary headquarters.

Ground personnel and baggage were transported to Selfridge Field by the Provisional Transport Squadron, while the combat crews, led by Captain Joseph C.A. Denniston, proceeded there in B-10's. The movement was completed on February 3, 1937, and the Squadron settled down to the business of testing various types of winter equipment. Considering the comparatively mild temperatures encountered, it is rather difficult to determine whether the men were disappointed or grateful for the spring-like weather. Probably the most disappointed individual of them all was Corporal Gowing, operator of the Snow-Go, who divided his time between Detroit and scanning the skies for signs of snow.

Lieut. David P. Laubach, Privates Diamintini and Wiener had the most stirring experience when the landing gear of the airplane in which they were making a training flight refused to function.

Lieut. Laubach, while preparing to land at Wayne County Airport, discovered that the wheels would not come down. He turned back to Selfridge Field and notified the Control Tower of his predicament. Upon receiving advice from Captain Irvine, of the Materiel Division, Lieut. Laubach put the plane into a series of short, abrupt dives. These maneuvers brought the wheels into position, but they refused to lock. He had the choice of "bailing out" with his crew or of attempting a landing and a possible crash. He chose the latter. With the entire line personnel of Selfridge Field looking on, he made his approach for the concrete runway. In order to prevent disaster, it was necessary to make a perfect three-point landing, the landing gear being held by nothing more than the supporting cable. A more beautiful landing has never been made. As the big ship rolled to a stop, spectators held their breath, but the wheels remained intact, sufficient to support the weight of the airplane Lieut. Laubach had cheated the undertaker a fidgety ambulance driver, and saved the Government some sixty thousand dollars. The crew emerged with visible signs of relief which they tried hard to conceal.

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FLYING CADETS ASSIGNED TO ACTIVE DUTY

The 30 Flying Cadets who graduated from the Air Corps Advanced Flying School on February 17, 1937, the names of whom were published in a previous issue of the Air Corps News Letter, were assigned to extended active duty with Air Corps tactical units at the Air Corps fields set forth below:

To Barksdale Field, La.:

James R. DuBose, Jr.; William E. Eubank, Jr.; Elbert Helton (Attack), and Eugene H. Snavely (Bombardment).

To March Field, Calif.:

Clyde Box and Wallace E. Nau (Attack) and Walter H. Dillingham (Pursuit).

To Langley Field, Va.: Jacob J. Brogger, Joseph F. Hunker and Hubert Zemke (Pursuit); Philip G. Cochran, Edward G. Hillery, Donald W. Macdonald, William K. McNown, Thornton K. Myers, Morris Perry, David A. Tate, Harold E. Watson and Earl B. Young (Bombardment).

To Selfridge Field, Mich.:

Steele R. Patterson and Henry G. Thorne, Jr. (Pursuit); Julian M. Bleyer, Lloyd H. Dalton, Jr., Thomas E. Margrave, James W. Phelps, Jr., Jack L. Schoch, Robert A. Theobald and Sam P. Triffy (Bombardment).

To Brooks Field, Texas:

Sterling G. Harvey and Aaron H. Hoffeditz (Observation).

RETIREMENT OF SERGEANT LITTLETON

Sergeant Winfred E. Littleton, 62nd School Squadron, Air Corps, Kelly Field, Texas, was placed on the retired list, pursuant to Par. 10, Special Orders No. 47, War Department, February 27, 1937.

Sergeant Littleton entered the service on April 2, 1907, and was assigned to Company "K" of the 1st Infantry. He has served in the Infantry, Engineer Corps, Marine Corps and Air Corps since that date. He served as a commissioned officer in the Corps of Engineers from July 25, 1918, to February 3, 1919. He has ten honorable discharges, all of which bear the notation of "Character: Excellent."

The officers and men of Kelly Field congratulate Sergeant Littleton on his excellent record, and their good wishes go with him on his well earned retirement.

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Under special orders of the War Department, recently issued, Lieut. Colonel Harvey S. Burwell, Air Corps, is relieved from duty in the Office of the Chief of the Air Corps, Washington, as Liaison Officer, General Headquarters Air Force, and assigned to duty at March Field, Riverside, Calif.

WAR DEPARTMENT ORDERS

Changes of Station: To Barksdale Field, La.: Major Gilbert T. Collar, 1st Lieuts. Robert B. Landry and Norman D. Sillin, from Panama Canal Department; 1st Lieut. John P. Kenny from the Philippines.

To Chanute Field, Ill.: 2nd Lieut. Opal E. Henderson, from Hawaiian Department.

To Fort Logan, Colo.: 1st Lieut. Byram A. Bunch, from Fitzsimons General Hospital, Denver, Colorado.

To Hamilton Field, Calif.: 1st Lieut. Chester P. Gilger, from Hawaiian Department.

To Hawaiian Department: Major Harold L. Clerk, upon completion of his present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas; Captain Frank D. Klein, from Materiel Division, Wright Field, Ohio; 1st Lieuts. George R. Acheson, Mitchel Field, N.Y.; Paul D. Bunker, Jr., and James A. Ellison, from Barksdale Field, La.; Richard I. Dugan and Charles B. Stone, III, Hamilton Field, Calif.; Elder Patteson, Randolph Field, Texas.

To Langley Field, Va.: 1st Lieut. Irving R. Selby, from Panama.

To March Field, Calif.: 1st Lieuts. Harold Q. Huglin, from the Philippines; Thomas B. Hall, from Panama; Thomas R. Lynch, from Philippines.

To Maxwell Field, Ala.: Captain Orval R. Cook, from U.S. Military Academy, West Point, N.Y., for duty as student in 1937-1938 course at the Air Corps Tactical School.

To Mitchel Field, N.Y.: Lieut. Colonel Donald P. Muse (Major) from Panama; 1st Lieut. Fay R. Upthegrove, from Hawaii.

To Newport, R.I.: Lieut. Colonel William E. Lynd (Major), Office Chief of the Air Corps, for duty as student at the Naval War College.

To Panama Canal Department: Captains Manning E. Tillery, Barksdale Field; Clarence D. Wheeler, Langley Field; 1st Lieut. John J. O'Hara, from Brooks Field, Texas; Lieut. Colonel George E. Lovell, Jr., 1st Lieuts. Robert F. Tate and Felix Vidal, from Barksdale Field; Charles Sommers, from Kelly Field; Captain Guy Kirksey, Hamilton Field; Franklin C. Wolfe, March Field; Major George W. Polk (Captain) upon completion of his present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To the Philippines: 1st Lieuts. Wendell W. Bowman, Langley Field; Ralph O. Brownfield, Scott Field; Reuben C. Hood, Jr., Barksdale Field.

To Randolph Field, Texas: 1st Lieut. Robert L. Scott, from Panama; 2nd Lieut. John G. Benner, Selfridge Field; 1st Lieuts. Harry S. Bishop and David N. Crickette, from Hawaii; Major Isaiah Davies, from Philippines.

To Scott Field, Ill.: Captain Roscoe C. Wriston, from Hawaiian Department.

To Selfridge Field, Mich.: 1st Lieuts. Paul B. Wurtsmith, from Philippines; Allen W. Reed, from Panama.

To Wright Field, Ohio: Captains Charles A. Ross, from Panama; Oscar F. Carlson, Chanute Field, for duty as student in 1937-1938 course at Air Corps Engineering School.

To Hawaiian Department: 1st Lieut. William Ball, from Hamilton Field.

NOTES FROM THE WASHINGTON OFFICE

Brigadier General Frederick L. Martin returned to Wright Field, February 27th, following a conference in the Chief's Office.

Lieut. Colonel William F. Volandt, Majors Bennett E. Meyers and Franklin O. Carroll, returned to their station, Wright Field, on February 24th, following a conference in the Chief's Office.

Recent visitors were Captain Roland Birnn, from Maxwell Field, Ala., and Colonel Lawrence S. Churchill, commanding the Middletown Air Depot, for conference; Captain Bernard A. Bridget, from Randolph Field, Texas; Major Richard L. Creed, from Maxwell Field, Ala.; 1st Lieut. Ralph P. Swofford, from Wright Field; Major Walter E. Richards, from Kelly Field; 1st Lieut. John C. Horton, from Randolph Field; and 2nd Lieut. John W. Furlow from Langley Field.

Colonel Chalmers G. Hall, Chief of the Supply Division, returned February 27th from a procurement Inspection trip.

Captain Stewart W. Towle, Jr., returned to his desk in the Personnel Division, March 9th, following a leave of absence.

Major Lowell H. Smith, Chief of the Inspection Division, returned March 1st from a navigation flight to Florida.

Major Karl S. Axtater, of the Supply Division, returned March 1st from New York City.

Colonel Herbert A. Dargue, from Maxwell Field, arrived March 2nd for temporary duty in the Chief's office.

Major Morton H. McKinnon, of the Personnel Division, made a navigation flight to Selfridge Field, Mich., on March 11th.

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ADDITIONAL PERSONNEL NOTES

Major Oliver S. Ferson was promoted from temporary to permanent rank of Major from February 16, 1937.

Major William L. Boyd (Captain), stationed at Fort Bliss, Texas, is under orders to report for duty as student in the 1937-1938 course at the Air Corps Tactical School, Maxwell Field, Ala.

Orders assigning 1st Lieut. Robert F. Travis, Langley Field, Va., to Panama, have been revoked.

Effective August 17, 1937, Lieut. Colonel John B. Brooks, Air Corps, is relieved as a member of the War Department General Staff and from duty in the Office Chief of Staff, Washington, D.C., and assigned to duty as Commandant of the Air Corps Primary Flying School, Randolph Field, Texas.

The active duty tour of 2nd Lieut. Frank Beard Scott, Air Reserve, now stationed at Barksdale Field, La., has been extended to June 15, 1939.

Second Lieut. William T. Lovelace, Air Reserve, of Jackson, Miss., has been assigned to active duty at Langley Field, Va., to March 31 1940.

NEW CLASS OF STUDENTS AT ADVANCED FLYING SCHOOL

The new class of students for the Air Corps Advanced Flying School, having completed the course of instruction at the Air Corps Primary Flying School, Randolph Field, Texas, reported for duty at Kelly Field, Texas, on February 25th, and started flying training on March 1st. They have been assigned for training in the specialized branches of aviation, as follows:

OFFICERS

Observation Section

Lt. Col. Laurence F. Stone, A.C. Pocatello, Idaho
Lt.Col. Raymond E. O'Neill, A.C., San Francisco, Cal.
Major Warner B. Gates, A.C., Evanston, Ill.
Major Walter J. Reed, A.C., Scarsdale, N.Y.
Major Geo. G. Lundberg, A.C., Olean, N.Y.
Captain Howard H. Couch, A.C., Monrovia, Calif.
Captain James F.J. Early, A.C. Worcester, Mass.
Captain John K. Kirkendall, A.C. Dallas, Pa.
1st Lieut. Charles E. Wheatley, Jr., Cavalry, Portland, Me.
2nd Lieut. Charles B. Winkle, Inf. Seaside, Ore.

Attack Section

Lieut. Lorenzo Egurrola, Mexican Navy.

FLYING CADETS

Attack Section

Horace D. Aynesworth	Alpine, Texas
Follett Bradley, Jr.	Langley Field, Va.
Murray A. Bywater	Salt Lake City, Utah
Edwin S. Chickering	Temple, Texas
Charles A. Clancy	San Diego, Calif.
Raymond L. Cobb	Brownwood, Texas
Murray W. Crowder, Jr.	Joshua, Texas
Allman T. Culbertson	Dansville, N.Y.
Raymond L. Curtice	Concord, N.H.
Waymond A. Davis	Lubbock, Texas
Julien W. Freeman	Clinton, S.C.
Charles C. Kegelman	El Reno, Okla.
Arthur W. Kellond	San Antonio, Texas
Richard F. Lorenz	Chicago, Ill.
John H. Payne	Austin, Texas
George L. Robinson	Corona, Calif.
William R. Stark	Starkville, Miss.
Theodore A. Suiter	Spearfish, S.D.
Frank K. Thompson	Columbus, Ohio
Henry Viccellio	Chatham, Va.
Delmer E. Wilson	Ephrata, Wash.

Observation Section

James B. Baker	Bird Island, Minn.
Thomas D. Brown	Spokane, Wash.
George R. Carr	Pocatello, Idaho
Lewis Countway	Quincy, Mass.
Guy L. Hudson	Los Angeles, Calif.
John R. Marshall	Montgomery, Ala.
Harold M. Means	Kane, Pa.
Frederick L. Moore	Fillmore, Calif.
Harold Y. Sewart	Murfreesboro, Tenn.
McClellan F. Stunkard, Jr.	Governors Is'd, N.Y.
Morris E. Thomas	St. Petersburg, Fla.
Adolph E. Tikofski	Walpole, Mass.

Pursuit Section

John R. Alison	Moscow, Idaho
Ancil D. Baker	Independence, Mo.
William E. Basye	Tallahassee, Fla.
Francis J. Black, Jr.	San Antonio, Texas
George A. Blakey	Roanoke, Va.
Thomas L. Butner	

Pursuit Section

Leland G. Fiegel	Rochester, Minn.
Ronald F. Fallows	Mason City, Iowa
Henry C. Godman	Palo Alto, Calif.
Milton L. Hardeman	Athens, Ga.
Victor M. Heath	Fon Du Lac, Wis.
Charles R. Greening	Tacoma, Wash.
Donald H. Kauffman	Carlisle, Pa.
Guilford R. Montgomery	Sidney, Neb.
Joseph A. Morris	Alva, Wyo.
Homer M. MacKay	Lansing, Mich.
Harold J. Rau	Shavertown, Pa.
James O. Reed	Eugene, Ore.
Barton M. Russell	San Diego, Calif.
Wilbur B. Sprague, Jr.	Manhasset, N. Y.
Ansley Watson	New York, N. Y.

Jesus A. Villamor (Philippine Constabulary)

It will be noted from the above that, beginning with this class, students are no longer being specialized in "Bombardment," as a new policy calls for the assignment of graduates from the Advanced Flying School to single-engined tactical organizations for two years. For this class, all students will receive approximately 25 hours' training on bi-engined equipment (Keystones), which is a lot more than students in these sections have received in the past.

Seventeen BT-8's have been ordered transferred from Randolph Field to Kelly Field and were allotted to the three sections to be used to supplement the other equipment now available, so that all students will receive training in them.

When this class started training at the Primary Flying School in July, 1936, it numbered 140 Flying Cadets, 10 Air Corps officers, 5 officers from other branches of the U.S. Army, one foreign officer and one Flying Cadet from the Philippine Constabulary; total, 157 students. Since 66 of these students were transferred to the Advanced Flying School, it will be noted that 42 percent of the original class of students successfully completed the primary flying course at Randolph Field.

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THE AIR CORPS TECHNICAL SCHOOL

In a discussion recently on the Air Corps Technical School, Chanute Field, Rantoul, Ill., during a Reserve officers' conference held at the armory of the University of Illinois, Major James B. Carroll, of Chanute Field, stated that the enrollment at this school is now larger than at any time in the history of the field, even including the war period. There are 547 students in the school, including 39 officers and 508 enlisted men. The total strength of the field is 1,150 officers and enlisted men.

Major Carroll stated that the construction and maintenance of military aircraft and equipment is one of the most exacting sciences of the world. When airplanes go up, both the tactical success of the flight mission and the life of the pilot depends upon the proper functioning of the airplane and equipment. Work cannot be done by the trial and error method.

Kelly Field, Texas, March 5, 1937.

Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center, accompanied by Lieut. Colonel H.G. Davidson, Executive, Office of the Chief of the Air Corps, inspected the adequacy of the training facilities at the Air Corps Advanced Flying School on February 26, 1937.

Lieuts. Fitzhugh Lee and S.C. Strong, U.S.N., stationed at Pensacola, Fla., spent the night enroute to Pensacola from San Diego, ferrying two F-4B4 airplanes - the Navy equivalent to the Army P-12.

Major Robin A. Day, Air Corps Instructor for the Washington National Guard, was delayed here two days the latter part of February while enroute to Baltimore, Md., ferrying an O-46 plane.

Lieut. Reed, with Lieut. Gifford, as passenger, both of the Texas National Guard at Houston, Texas, stopped here on February 20th.

The following pilots visited Kelly Field on routine navigation flights: Lieut. Colonel Donald Wilson, Maxwell Field, in an A-17 on Feb. 25th; Lieut. J.T. Murtha, with Lieut. Dany as passenger, in a B-10 on Feb. 23rd from March Field.

The following pilots from Barksdale Field visited here on routine navigation training flights: Lieut. Sheppard and Flying Cadet Gardner, in P-26's, on February 20th; Flying Cadets Stevens and Buller (passenger) in an A-17, Feb. 30th; Lieut. N.F. Parrish in an A-17 on Feb. 20th and again on the 21st; Flying Cadet Kunze in an A-17 on Feb. 22nd; Lieut. H.R. Maddox in a P-26 on Feb. 25th, and Lieut. A.F. Merewether in an A-17 on March 1st.

Major William Turnbull, Supply Officer, is on ten days' leave, visiting Mexico.

First Lieut. A.W. Kissner, formerly instructor in Observation, was detailed Assistant Adjutant and Recruiting Officer.

Major W.E. Richards, Commanding Officer of the 62nd School Squadron, recently flew an O-25A plane to Middletown, Pa., with 1st Lieut. J.H. Ives as passenger. The latter secured an O-38F at Middletown and ferried it to Candler Field, Atlanta, Ga., where he obtained an O-25A which he returned to Kelly Field.

Second Lieut. Jack W. Hickman, recent graduate of the Advanced Flying School, is now on leave of absence. He will report at San Francisco and sail on June 12th for the Hawaiian Islands.

Captain R.E. Holmes, Commandant of Flying Cadets, and 1st Lieut. Troup Miller, recently completed a ferry trip to Rockwell Field, bringing back a P-12.

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

72nd Bombardment Squadron: In addition to usual training activities, the Squadron is engaged in completing a program of 25 hours of cooperative flying for the Harbor Defenses of Honolulu. While all missions flown to date have been successfully completed, poor weather during the first half of the month has prolonged the schedule.

Former members of the Squadron will regret to hear that "Clipper" got the final indorsement on her service record on February 15th, after being run down by a Signal Corps repair truck.

4th Observation Squadron: The Squadron is devoting particular attention to practice gunnery on towed targets in anticipation of approaching record firing.

New faces and new chevrons are in appearance around the Squadron these days. Sergeant John J. Hoffman joined the ranks of Staff Sergeants and Corporal Paul Schmischke became a Sergeant. The Squadron congratulates these men for having been rewarded for their cooperation and earnest efforts.

Air Base Hqrs., Langley Field, Va., March 4th.

33rd Pursuit Squadron: For the past thirty days, the 33rd has been shooting at a regular anti-aircraft tow target with both .30 and .50 calibre machine guns. A B-10 with special tow rack equipment furnishes means of towing. Long range firing of 500 yards, 1,000 and 1,500 yards are the said distances of fire. Shooting at such distances calls for a good accurate gun sight, none of which are available; consequently, armament and engineering are kept busy trying to devise a sight worth using.

35th Pursuit Squadron: With all airplanes in commission, the 35th Pursuit Squadron has been maintaining a heavy schedule of flight activity. Unit interception missions, long range gunnery on tow targets, and instrument flying are being stressed.

The rear gunners had a try at camera gunnery on "enemy" attack planes, but found the slipstream a bit disturbing to swinging and aiming the gun.

The prescribed procedure of overcast breakthrough is being tested nearly every day. A few minor improvements and a little more practice will undoubtedly make this operation a good 'Ace in the hole" sometime when caught up on top.

36th Pursuit Squadron: The 36th's delegates to the Cold Weather tests at Camp Skeel, Mich., have returned from the North and reported that the weather was much less severe than expected. Are they tough, or were they red flannels we saw hanging from Sgt. Hodges' clothes line?

Lieuts. Tom Musgrave and Glenn Thompson recently joined our outfit. Having been trained and previously assigned to Bombardment, these two are now undergoing a strenuous mental metamorphosis - that is, they are being converted from slow thinkers into quick thinkers. The Squadron welcomes them.

37th Attack Squadron: Back in this writer's homeland, Little Sweden (Minnesota), the snow is deep and crisp, and the wintry blasts from across the Canadian and Dakota plains send snow flakes swirling in insane fury, but little did he realize that on the last day of February such a phenomenon would be reproduced here at Langley Field in old Virginia. Soon the 37th Attack Squadron's snow brigade shouldered shovels and marched to Langley #2 to clear a runway for Captain Schramm and all his lads. Never will it be said that a little snow kept

the A-17's of the 37th on the ground, especially with pilots in the Squadron as "eager" as Cadet Russell, who keeps his crew so busy making 40-hour inspections that they have threatened to go on a "sit-down" strike.

Long before the proverbial winds of March will have subsided, all eight ships of the 37th will be equipped with radio compass and marker beacon indicator, and thus will be able to conduct tests of any type of radio navigation, also instrument landings. Upon questioning the C.O., Captain Schramm, after his first flight with the new equipment, it was discovered that he was greatly disappointed by having had shattered his dream of taking off from Langley, immediately picking up some distant place as St. Louis, and flying needle all the way. The radio compass receiving set was just not strong enough.

The Squadron is now being gradually increased from 66 men to approach the newly authorized strength of 147 men in proportion for a full strength squadron of A-18's. According to the best available local sources of information, the first A-18 ought to be delivered by June 1st and, perhaps, two per month thereafter until the authorized thirteen have been received. The entire organization is anxiously awaiting the arrival of the A-18's.

Flying Cadets Watson and Young of the Kelly class of February, 1937, have been assigned to the 37th Squadron and will report for duty upon expiration of their present furlough.

2nd Bombardment Group: Recent orders affecting personnel of the 2nd Bombardment Group are as follows: Lieut. Colonel C.B. Oldfield to Fort Lewis, Wash.; 1st Lieuts. D.R. Gibbs, T.C. Odom and R.L. Waldron to Chanute Field, Ill., for the Maintenance-Engineering course; 1st Lt. J.R. Sutherland to Hawaii, and 2nd Lieut. L.W. Greenbank to Panama. Orders transferring 1st Lieut. R.F. Travis to Panama were revoked.

First Lieut. J.A. Miller departed for the Philippines, and the best wishes of the Group go with "Old Black Joe."

San Antonio Air Depot, Texas, March 5th.

Lieut. Colonel Howard C. Davidson, of the Office of the Chief of the Air Corps, on a recent visit to Kelly and Brooks Fields, paid an informal visit to this Depot on February 26th and conferred with the Commanding Officer.

Lieut. Colonel Junius H. Houghton, Commanding Officer of the Fairfield Air Depot, Patterson Field, Ohio, was a visitor here February 28th to March 2nd, piloting a C-33 on an inter-depot transport service trip to the Rockwell Air Depot, Calif., and studying loading facilities at the two Depots for air transport shipments.

A group of some twelve members of the present class of the School of Aviation Medicine, Randolph Field, visited the Depot February 26th for a tour of inspection through the Engineering Shops.

Major John M. Clark, Depot Supply Officer of the Depot, has been a patient at the Station Hospital, Fort Sam Houston, since February 22d, with a nasal ailment, but at this writing appears to be progressing satisfactorily and is expected to be up and about again in a short time.

Captain David J. Ellinger, Assistant Engineering Officer of the Depot, returned February 28th from an extended cross-country flight since the 19th, via Barksdale Field, La., and Patterson Field, Ohio, to Mitchel Field, N.Y., and back by way of Bolling Field, D.C., to Atlanta, Ga.; Maxwell Field, Ala., and Barksdale Field.

The Depot is glad to receive Warrant Officer and Mrs. Axel Bishop and their young son and daughter as new members of its official family. Warrant Officer Bishop was transferred to this Depot on March 1st from Hamilton Field, Calif., and his new duty here is that of assistant to the Depot Supply Officer.

Staff Sergeant Paul A. Simcoe and family are welcomed as recent additions to the 3rd Transport Squadron, this Depot, on his transfer from the 53rd School Squadron, Randolph Field, February 26th.

Albrook Field, Panama Canal Zone.

The big yearly golfing event of the Canal Zone is now history, and the divot diggers of the post might well be proud of the part they played. The yearly interclub matches between the Panama, Amador, Pedro Miguel and Gatun Golf Clubs are bitterly fought, as each Club tries by all fair means to gain possession of the championship cup. Amador, having won the cup twice, needed only victory this year to gain permanent possession of it. However, the Panama Club, paced by six of our best club swingers - Brigadier General George H. Brett, Majors G.F. Collar, G.H. Beverly, J.M. Epperly, Lieuts. R.S. Israel and B.A. Schriever, kept the cup in circulation by coming through with a smashing victory. Since each club was represented by only twenty members, Albrook Field can rightly throw out its chest for having six members on the championship team, of whom at least five played in each match. Not only was Albrook Field represented on the winning club, but we had two members, Lieuts. Fred Smith and Bob Landry, on the Amador Club which finished second, and Staff Sergeant Gilbreath knocked the pellet around for Pedro Miguel. The average score for twenty five rounds over four courses was only slightly over 83, and now the post is contemplating a challenge to any six-man club team. Maybe the bite will be too big to chew, but we'll try until the last putt is in the hole.

Albrook Field has an outdoor swimming pool under construction, and everyone is anxiously awaiting the day we can jump in.

France Field, Panama Canal Zone.

To those of us who were formerly very much annoyed when we compared the looks of France Field to other posts in the vicinity, the apparent and pleasing campaign to beautify the post is a welcome thing. Due to increased details and more exacting schedules, the grounds are only beginning to have the appearance they should have. Lawn mowing, fresh paint, a quantity of whitewash, and an entirely new program of work has indeed brought about a very pleasant picture.

TECHNICAL INFORMATION AND ENGINEERING NEWS

Inspection Division, Office of the Chief of the Air Corps

The following is quoted from Materiel Division's answer to Unsatisfactory Report relative to Cracked Crankcase, Main Section, and Broken Cylinder Hold Down Studs:

"The use of carburetor heat at manifold pressures between 32" and 37" during take-off or climb should be avoided as much as possible to avoid detonation.

It has been the observation of a representative of this Division that at many activities the engines had been operated on the ground for long periods even after warm up had been completed. Long periods of ground running tend to cause high cylinder temperatures and high spark plug temperatures which are certain to result in detonation and misfiring during take-off. The installation of the oil dilution system will tend to reduce the time necessary for warming up the oil. A service test is being conducted on the oil dilution system for installation in the B-10B airplanes. It is believed that this service test will be completed and all B-10B airplanes in the States can be equipped with the oil dilution system prior to next winter.

It is the practice of many Air Corps pilots to change to high pitch propeller settings immediately after take-off and then continue to climb in high pitch. This procedure punishes the engine unnecessarily and should be discontinued."

The damage which may be caused by excessive use of the heater is illustrated in the following:

In conversation with Mr. William Kennedy of the Wright Aeronautical Company, he stated that when the airlines first used high output engines, numerous piston failures occurred. After careful investigation, the Wright Company reported to the airlines that this trouble was being caused by their pilots. This statement aroused considerable antagonism and made it necessary for the company to prove its point. They immediately put representatives on the various airlines in order to find typical examples of pilot's abuse of the engine.

Mr. Kennedy in one of these trips himself, at night, seated himself on the left hand side of the cabin near the trailing edge of the wing where he could observe the exhaust flames. Shortly after taking off from Pittsburgh, while climbing through an overcast, he noted showers of sparks coming from the left exhaust which indicated to him the commencement of piston disintegration. He called for the co-pilot. The co-pilot, not knowing him, assured him that this condition was not dangerous. However, he informed the co-pilot that he was a representative of the Wright Company and to tell the pilot to reduce the carburetor heat on the left engine. When this was done, the shower of sparks ceased.

As a result of this and several other examples, definite instructions were issued to the airline pilots relative to the use of carburetor heat control. Simultaneously, with the introduction of proper procedure of controlling heat, all piston failures ceased.

Another pilot abuse consisted of setting the carburetor heat and mixture control during the climb and then failing to adjust immediately after level flight was resumed. This omission also contributed to engine failures.

Where carburetor air heat temperature gauges are not installed and the carburetor heater control is used, the tachometer should be closely watched and if the rpm's fall off, the amount of heat introduced in the carburetor should be reduced to the point where the rpm's are regained and held.

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Air Corps Materiel Division

Lamp Assembly, Cabin, Type A-5.

An Engineering Section Memorandum Report provides information necessary for the classification of lamp assembly, cabin, Type A-5, as standard. This assembly is intended for general illumination of the cabin airplanes equipped with one-wire (grounded) electrical system. It is supplied with a lamp socket of one terminal and no switch, and is similar to the Type A-2 cabin lamp which is used on aircraft equipped with two-wire ungrounded electrical system. The single contact socket eliminates the necessity for a switch similar to that used with the Type A-2 cabin lamp assembly. A separate switch, conveniently located, will be used with the Type A-5 cabin lamp assembly.

Portable Night Lighting Equipment:

An Engineering Section Memorandum Report describes the results of a flight test of a night landing system using a special arrangement of portable night lighting equipment. In the conclusions it was stated that the lights are easily picked up from the air and that a glide path and the ground level can easily be determined by the use of lights in a triangular pattern. Diagrams were included in the report to show the placement of the lights in this test. It was recommended that further development with this system be performed.

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VOL. XX AIR CORPS NEWS LETTER NO. 7.

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

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INSTRUCTION IN COMMUNICATIONS AT AIR CORPS TECHNICAL SCHOOL

By Lieut. Forrest G. Allen, Air Corps

THE widespread realization that dependable radio communication is an essential adjunct to successful aerial operations has resulted in a very great demand for a large number of trained communications personnel. The course of instruction for aircraft radio operator-repairers conducted by the Department of Communications has been designed to furnish the service with trained men having reasonably high technical qualifications who, with little additional practical experience, will be prepared to perform any communications assignment.

The communications course for enlisted specialists is thirty-two weeks long, the first eight weeks of which are spent in the Department of Basic Instruction. Upon entering the Department of Communications, each student follows the prescribed schedule of instruction involving eight sub-courses, the facilities of which are briefly described below.

One of the first classes the embryo "communicator" attends is Typewriting. Typewriters having Western Union keyboards are used and the minimum requirement is twenty words per minute, using the touch system. Those students who are already proficient in the use of the typewriter when they enter school are excused from typing and attend the code classes instead.

After the student has qualified in typing, he attends code instruction twice daily for the duration of his course. The Code Room is equipped with automatic code machines of modern design, low and high frequency radio receivers, an Ediphone recorder for checking student transmitting ability, and an "ink recorder" for making permanent records on paper tape of each student's accuracy in forming code characters with the standard hand telegraph key and the Vibroplex semi-automatic key.

When the average student has obtained a code speed of approximately twelve words per minute, he is ready for the subcourse, called Applied Communications. This subject includes all phases of operating technique, aside from the actual use of radio equipment, which the aircraft radio operator must know. Each student is required to develop an operating knowledge of the Joint Army and Navy Radiotelegraph and Radiotelephone Procedure and the procedure in communicating with Department of Commerce radio facilities. After learning the principles of "message handling," the student applies them in practical exercises throughout the remainder of the course.

A brief but comprehensive course in electrical and radio fundamentals is given in the subcourse, entitled Principles of Radio Communication. While theoretical in nature, this subject has been made highly practical through the careful selection of demonstration and individual laboratory experiments. For example, students undergoing instruction on radio transmitters perform experiments which demonstrate the principles involved in the Command and Liaison Set transmitters. Particular attention is devoted to the proper tuning and adjustment of the circuits and correct interpretation of meter indications since experience has shown that these "theoretical" factors are of considerable importance in the practical use of the actual radio sets installed in aircraft. Cathode ray oscilloscopes are frequently used to make visible demonstrations of electric wave phenomena which formerly required the student to exercise considerable imagination. The equipment for individual laboratory experiments is permanently mounted on breadboards; with his experiment each student is given a supply of wires terminated in special quick-fastening connectors resembling glove snaps, so that the more complicated hook-ups may be accomplished within a few minutes. Specially prepared experimental data sheets are provided with each experiment so that students may quickly record laboratory data and have sufficient time to write out the answers to questions devised to aid them in drawing logical conclusions. From the foregoing description it will be readily appreciated that the Department of Communications has far better lecture room and laboratory facilities than most colleges and universities.

An understanding of the electrical and radio fundamentals provides the student with a proper foundation upon which to build his practical knowledge of standard Air Corps radio equipment; this special knowledge is acquired in the subcourse called Circuit Test and Repair of Radio Equipment. In this subject the student receives practical instruction on the operating adjustments, circuit

testing and applied principles of modern service radio equipment. The Circuit Test and Repair laboratory contains over fifty specially designed, steel laboratory tables on which are mounted recent types of Command Sets, Liaison Sets, Radio Compasses, and Test Equipment; all power for the operation of aircraft radio equipment is obtained from a central power plant adjoining the laboratory room. Conspicuous by way of contrast is a row of ten aircraft radio transmitters, in vogue over ten years ago, which are employed in teaching the principles of transmitter trouble shooting. This is done by requiring the student to place designated troubles in the transmitters after which he records and analyzes the symptoms obtained. Although obsolete equipment is used in this phase of instruction, the principles involved are essentially the same as those embodied in modern equipment. Working with modern equipment, the student is required to develop an intimate practical knowledge of the numerous adjustments essential in its intelligent operation and maintenance. The general objective in this subcourse is to develop in the student the ability to read and understand the manufacturers' Handbooks of Instruction and Technical Orders pertaining to standard radio equipment, and intelligently to apply in practice the directions contained therein. It is doubtful if a more complete and well designed laboratory for this kind of important instruction could be found anywhere.

The ability to handle skillfully a soldering iron is as important to aircraft radio men as the ability to handle radio messages. In the subcourse entitled Shop Maintenance of Radio Equipment, students receive expert instruction in the care and use of soldering irons and the few hand tools associated with the radio repairman's work. Practical jobs assigned in this phase of instruction include radio cord and plug assembly, the formation of joints and splices; bus bar, cabled and flexible wiring; and several exercises designed to develop a small amount of skill in the above operations.

Field telephony and telegraphy are employed by the Air Corps to a limited extent, generally during maneuver pediods when working in cooperation with other arms. Consequently, the course in Wire Communication Equipment is a short one. During the time allotted, the student receives instruction in the installation, operation and field maintenance of field telephones, switchboards, and telegraph equipment, including the use of the latter in simplex and phantom circuits permitting the simultaneous transmission of telegraph and telephone messages over the same wires without mutual interference. Following instruction and practice in the installation of simple field wire systems, the student receives a small amount of training in field trouble shooting methods. The principles of wire telephony are also embodied in aircraft interphone equipment, a thorough knowledge of which is essential to aircraft radiomen.

The final phase of the course is devoted to thorough instruction, highly practical in nature, on the Inspection and Maintenance of Aircraft Radio Installations. Here the student is taught how to install and service aircraft antenna installations, how to "bench test" radio equipment prior to placing it into service on aircraft, how to perform the prescribed inspections of aircraft radio installations, and how to use a systematic method of locating troubles in the installation. Special lectures are given explaining the Air Corps Technical Order system, the Air Corps Circular system and the Signal Corps Supply Letter system; the student is required to look up references in these files throughout his work in this phase of instruction. The student is also taught how to read an airplane electrical wiring diagram, since some of the wires of the airplane communication system are included in the same conduits as other portions of the airplane electrical system. When aircraft are available, students are given actual operating practice in flight. In every respect, this subcourse is the most practical and most valuable in the entire communications course. It may be likened to the keystone of an arch, and being so it requires the firm foundation supplied by the various other courses which are prerequisite to it.

The course for Communication Officers is essentially the same as that given to enlisted specialists with the exception, however, that much greater emphasis is given to instruction in the electrical and radio fundamentals. In addition to the subjects already described, the officers are given instruction in the Duties of Communication Officers. This subcourse includes training in Signal Supply procedure, Message Centers and Military Cryptography, and Signal Orders. The Communication Officers' course is nine months long.

Following the trend of modern educational practices, the Department of Communications has adopted as standard for all examinations the so called "New Type" examination questions. Examinations of this type often include over a hundred questions, yet their design is such that they can be completed by the average student in from twenty-five to thirty minutes. The examinations may be graded in a few minutes through the use of specially designed answer keys, the use of which insures a standard basis for the grading of all examinations since there can be no doubt as to the "degree of correctness" of any questions; instructor opinion is thus eliminated in the grading of examinations

and the grade awarded a given paper will be the same regardless of who grades it. By making the examinations comprehensive in scope, each instructor can obtain a reasonably accurate measure of the knowledge possessed by his students, since errors due to chance selection of questions are virtually eliminated. When a sufficient number of students have taken each examination, the Training Literature Section conducts elaborate statistical investigations for the purpose of eliminating poorly designed questions and determining the degree of difficulty of the remaining questions. By this process, subsequent revisions of examinations are subject to continuous improvement as the amount of statistical data accumulates. In practice, the use of the "New Type" comprehensive examinations has met with universal favor by both instructors and students, since considerable time is saved by all concerned.

Many of the graduates of the communications course will report to their organizations to become aircraft radio operators aboard modern bombardment airplanes. Their responsibilities are akin to those of radio operators aboard seagoing vessels and they will become more so as military aviation develops and progresses. It does not require much imagination to conceive of situations where the radio operator will be directly responsible for the safety of the airplane in which he is flying and its crew. In such situations the level headed, resourceful operator of high technical qualifications will perform a service of much greater value than the cost of his training at the Air Corps Technical School.

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GENERAL PRATT DEPARTS FOR NEW STATION

Brigadier General Henry C. Pratt, U.S. Army, relinquished command of the Second Wing, GHQ Air Force to Colonel Henry B. Clagett on March 12th, and departed from Langley Field for his new command - the Air Corps Tactical School at Maxwell Field, Ala. The entire Base, which was formed in the vicinity of the main gate, felt very proud, indeed, to have had the pleasure of serving under their beloved commander.

Colonel Clagett will remain in command of the Second Wing until the arrival of the new Second Wing Commander, Brigadier General Gerald C. Brant.

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With the close of February, records show that the 4th Observation Squadron, Luke Field, T.H., completed the most extensive training program in many months. Squadron airplanes flew nearly 200 hours, and with several more months of this same type of training their War Department Training Directive should be completed on schedule.

G E A R B O X E S

By the Materiel Division Correspondent

From the days of the "Jenny" to our present line of airplanes, the mechanic, in so far as his work keeps the airplane on the ground, has more or less played the part of the forgotten man. It was hard to get performance and still keep maintenance in mind. On the other hand, if the man-hours spent in maintenance keep the high performance airplanes on the ground, then what good is performance?

In the hope that we can strike a happy medium, recent airplanes are coming in with remote-driven gearboxes. Substantially, this is no more or less than moving the rear of the engine back and driving the many gears from a single shaft from the engine proper. This gearbox has several drives to which may be attached vacuum pumps, generators, and other miscellaneous impedimenta necessary to keep our modern airplanes in the air.

To date, development of the gearbox is under way, and it appears to have several advantages, the first among them being the ease with which the engine may be changed by disconnecting the single driveshaft. Second, of course, is the added number of gadgets we may hook onto the drives of the gearbox. We all realize we had just about reached the limit of the accessories we could hang onto the engine proper. Third is the accessibility of these accessories. We hope it will no longer be necessary for the mechanic to hang by his heels, bend a couple of anti-brachiums around a generator, and with cold and numb fingers try to put that slippery nut and lock washer on that bolt that he can't see.

Gearboxes won't be perfect at first, but have patience and we will try to eliminate the "bugs."

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NAVIGATION TRAINING BY 88TH SQUADRON

The 88th Reconnaissance Squadron, Hamilton Field, Calif., is finishing a navigation school course which has been the center of attraction for the past four weeks. The course included about seventy-five hours of ground work, which has been completed, and about thirty hours of actual navigation training missions conducted by the school, which is about one-third completed. The successful completion of this course will qualify all present members of the 88th Reconnaissance Squadron as Dead Reckoning Navigators.

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During the past few weeks, the training activities of the 11th Bombardment Squadron, Hamilton Field, Calif., consisted of instrument flying, dead reckoning navigation and participation in 7th Bombardment Group Combat exercise on Feb. 27th.

DEDICATION OF NEW HANGARS AT LAWSON FIELD, GA.

By the News Letter Correspondent

SUNDAY afternoon, March 14, 1937, marked the completion of a new phase in the building and expansion program of Lawson Field, Fort Benning, Ga. Before a crowd of 3,000, which included the Atlanta Wing of the Junior Birdmen of America and hundreds of civilian visitors from Columbus, Ga., as well as Fort Benning personnel, the new hangars at the south end of Lawson Field were formally opened and dedicated by Colonel Bruce Magruder, Executive Officer of Fort Benning, Ga., who, by pressing a button, opened the 15-ton electrically operated hangar doors to the accompaniment of music by the 29th Infantry Band of Fort Benning.

Immediately following the opening of the doors, there was a demonstration of speed and maneuverability of light and medium tanks from the 66th and 67th Infantry, Fort Benning. Led by Captain Edwin J. Van Horne, 67th Infantry, six tanks came charging around the north, west and south sides of Lawson Field, with wide open throttle and machine guns firing blank ammunition. After the tanks were parked in a line just off the ramp in front of the new hangars, Capt. Van Horne explained to the crowd the type, weight, speed, armament, use and special features of each tank in a brief but comprehensive address over the mobile public address system, which was loaned to Lawson Field by the Academic Department of the Infantry School, Fort Benning.

Immediately following Captain Van Horne's address, Lieut. Thomas D. Ferguson, Air Corps, took off in an O-46A with Lieut. Thomas Lee Gates, Air Reserve, as observer, and flew a series of Observation Aviation missions, with Lt. Thomas M. Bartley, Jr., Air Reserve, furnishing explanatory remarks and announcements over the loud speaker. The missions flown included:

1. An exhibition of two-way communication between air and ground by means of panels, pyrotechnic signals and wing signals;
2. Drop-message and pick-up message demonstration;
3. A demonstration of communication between air and ground by means of two-way radio; and
4. Sensing of simulated artillery fire, with the use of puff targets.

Ground transmitter and receiver, furnished through the courtesy of the Tank School, Fort Benning, were connected with the loud speaker, in order that the crowd might hear the transmissions from ground to airplane and from airplane to ground.

Upon completion of these four types of Observation missions, Captain John W. Warren, Air Corps, took off in an O-25A, drop-tested a parachute, and towed a sleeve target across Lawson Field, releasing it in front of the hangars. Meanwhile, a demonstration of instrument flying under the hood was being given by Lieut. Gates in a BT-2B1, with Lieut. Ferguson as safety pilot. As a novelty feature for the entertainment of the crowd, this flight was controlled from the ground by radio, and Lieut. Gates executed climbing turns, steep banks, stalls and recoveries, etc., upon the request of Lieut. Bartley at the microphone, with the crowd hearing each request over the loud speaker.

On exhibition, but not taking part in the aerial demonstration, were an A-17, a B-10, and a P-12E from Maxwell Field, Ala., and an O-46A from Lawson Field. Thus, one airplane of each tactical type of the Air Corps was available for inspection by the crowd. Also on exhibition, inside the hangars, were exhibits by:

1. The Photo Section, Lawson Field, which included cameras, a camera gun, vertical and oblique photographs of Fort Benning and vicinity, and a mosaic map of the Fort Benning military reservation;
2. The Armament Section, Lawson Field, which included a Browning M-1, .30 caliber flexible gun mounted on gun trammel which was temporarily removed from the rear cockpit of an O-46A; pyrotechnic tools and M-9, M-10 and M-11 signal flares; one M-8 parachute flare; a belt of .30 caliber ammunition and loading device, and a tow target cable and release mechanism;
3. The Communications Section, Lawson Field, which included message bags, drop and pick-up message equipment, the latest type air-ground liaison radio equipment (SCR-185 set), a command set (SCR 183), and radio test equipment (I-65A);
4. The Parachute Section, Lawson Field, which included a parachute suspended from the ceiling of the hangar and strapped to a drop-test dummy dressed in winter flying clothing;
5. The First Battalion, 83rd Field Artillery, Fort Benning, which included a 75 mm. gun, model 1897, M-2; and
6. The Fourth Battalion, 29th Infantry, Fort Benning, which included a Browning .30 caliber ground machine gun, model 1917, and a Browning M-2, .50 caliber ground machine gun.

The success of this demonstration was due in a very large degree to the excellent cooperation received from all source. It was most fitting that the exhibition should include, in addition to Air Corps equipment, that pertaining to other branches of the military establishment, since Lawson Field is not attached to, but rather a part of the Infantry School.

V-7267, A.C.

Thanks are due to the Commandant of the Infantry School for his sponsorship of the entire program, also to the Tank School; the 66th and 67th Infantry; the 1st Battalion, 83rd Field Artillery; the 4th Battalion, 29th Infantry; the 29th Infantry Band and to the Academic Department of the Infantry School for their participation. Further, thanks are due to the Commanding Officer of Maxwell Field, Ala., as well as to Lieuts. Hale, Hughes and Ackerman, of Maxwell Field, who flew the B-10, the A-17 and the P-12, their cooperation enabling the exhibition to include one airplane of each tactical type of the Air Corps.

To the members of Flight B, 16th Observation Squadron, Lawson Field, the dedication of the new hangars was especially gratifying as a symbol of partial completion of needed improvements begun under the direction of the former commanding officer, Captain (now Major) Lloyd Barnett, and carried on since his transfer to Nichols Field, P.I.

Further needed improvements listed for accomplishment in the near future are:

1. The leveling and grading of the south end of Lawson Field and construction of runways, through cooperation of the Quartermaster, Fort Benning, with W.P.A. labor, thus more than doubling the size of the landing area;
2. Completion of the night lighting system, which at present includes boundary lights, three banks of flood lights, and a rotating beacon, but lacks a sufficient number of obstruction lights;
3. Construction of an aerial gunnery range and a skeet range for required gunnery training; and
4. The acquisition by the Communications Section, Lawson Field, of a suitable ground set (SCR 188) to replace present obsolete and inadequate ground set (SCR 136). Each of the above projects having received tentative approval, their early accomplishment is anticipated.

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31ST SQUADRON GOES IN FOR NAVIGATION

In the 31st Bombardment Squadron these days, the motto and password is "Every Pilot a Navigator." For the last three months the officers and cadets of the Squadron have ground away at navigation problems by the dozen, listening to lectures on everything pertaining to Dead Reckoning Navigation, Maps, etc. "Even in our dreams," says the Hamilton Field Correspondent, "we see a 'Rhumb Line' 'Following the Pilot' over a 'mountain of Logarithms.' Lieut. 'Lonnie' Campbell, as instructor for Navigation in the 31st, has done a great job with his classes, and at last we have reached the point where we can see our motto 'Every Pilot a Navigator,' about to become a reality. A salute to 'Lonnie.'"

THE O-46 PLANE UNDER ICING CONDITIONS

A National Guard pilot reports an experience he encountered recently in connection with icing conditions while piloting an O-46A airplane.

He stated that under such conditions the wind shield becomes immediately opaque and non-transparent and that the ailerons become extremely sensitive, exerting undue pressure on the stick and resulting in very critical action and extreme lateral instability.

The pilot further goes on to state that upon landing at Trenton, N.J., with ice and while on the ground during further snowing conditions with temperature right at freezing, a combination of partial thawing of ice caused icycles to form on the leading edge of the ailerons and in the slot. With from one-eighth to one-quarter inch of ice on the top of the wing, take-off was attempted. Approximately 2,000 feet were necessary to get off the ground with 2,500 RPM and 34 inches of mercury in power. Immediately the left wing depressed in a rolling action around the longitudinal axis that was impossible to correct because of ineffectual aileron action and excessive stick pressure. The motor was immediately cut and sufficient field was left for a landing - the left wing low but not quite low enough to strike the ground. No damage resulted.

The pilot expressed the belief that the wing section itself is a design that becomes critical to icing conditions and therefore should be avoided; that he is positive that ice and snow on the ailerons, particularly the top side and in the slot ahead of the leading edge of the aileron, regardless of freedom of movement, precludes adequate lateral control, and therefore it seems imperative that pilots be advised that when such conditions of ice or snow are found on the airplane that the wing section, and particularly the entire aileron and its slot be thoroughly cleaned.

Regardless of the type of aircraft flown, icing conditions on the wings, even if present to a very limited extent, are very apt to affect the aerodynamic characteristics of same. The icing conditions described above are not peculiar to any one type of airplane.

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Two Air Corps officers who held temporary advanced rank were permanently promoted to such rank, as of March 31, 1937, viz: Colonel Alfred H. Hobley and Major Robert G. Breene.

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Captain John M. Weikert, Air Corps, is under orders to proceed to the U.S. Military Academy, West Point, N.Y., for duty, upon the completion of his present course of instruction at the C. & G.S. School.

NEW PHYSIOLOGICAL RESEARCH LABORATORY AT WRIGHT FIELD

By the Materiel Division Correspondent

ANNOUNCEMENT was recently made by Brigadier General A.W. Robins, Chief of the Materiel Division, Wright Field, Dayton, Ohio, that the Physiological Research Laboratory which for more than a year has been in the planning and construction stages at Wright Field, has been completed and equipped, and bears altogether the shipshape, antiseptic, and promising appearance of all medical laboratories devoted to scientific research. However, inasmuch as this particular laboratory is to deal with problems affecting the aviator in the various phases of flight, it is somewhat unique and, while a large amount of its medical equipment is standard, it also contains items found in few other laboratories in the world.

In the earliest days of flying such a laboratory was not necessary. Man flew neither sufficiently high, fast, nor far to take him beyond the elements of normal physical reactions. During the World War, however, the question of altitude flying became a vital consideration, and with the realization that very little was known about the artificial induction of oxygen into the human system, a medical research laboratory was established on Long Island which, although it aimed to go into all physical reactions resulting to aviators from flying, gave its attention principally to the study of oxygen problems.

In 1920, the work of the laboratory was discontinued, all activity being absorbed by the development needs of aircraft itself. By 1931, speeds, altitudes, and flying conditions had been stepped up to the extent where attention had to be turned once more to the aviator who in good weather and bad, in heat and in cold, in extremely high altitudes, spins, and at speeds beyond anything previously conceived by the mind of man, was to be responsible for this complicated equipment.

The present laboratory is the result of this need. Upon the joint decision of the Chief of the Air Corps and the Surgeon General, it was located at the Materiel Division in order that advantage might be taken of the expert judgment available in all aeronautical engineering lines, and of the well-equipped engineering shops, where special experimental equipment can be constructed. Situated in the main laboratory building on the ground floor - in order to provide a firm foundation for the massive high altitude chamber - the laboratory occupies a floor space 120 feet long by 30 feet wide. This space is partitioned off into office, physiological laboratory, biochemical laboratory, high altitude laboratory, operating room, balance room, and stock room. The whole laboratory is air-conditioned for the purpose of obtaining the uniform temperatures essential in certain analyses and for results with certain test instruments. The office scarcely requires comment, except that part of its equipment is a library of reference works on general and aviation medicine.

The physiological laboratory is equipped for research on human subjects and contains for the most part standard medical equipment, including metabolism apparatus, blood gas analyzers, which measure the amount of gases, such as oxygen, carbon dioxide, and in some instances carbon monoxide in the blood under varying conditions of altitude; an air analysis apparatus, which analyzes air in the lungs or in sealed compartments, taken during different conditions of flight; and a spirometer, a storage chamber for gas to be used in rebreather tests or for storing samples of exhaled or other air.

The biochemical laboratory - biochemical signifies chemistry of living organisms - contains a chemical table with acidproof top and a sink and drain board of chemical stoneware. The table is serviced with direct and alternating current power, compressed air, vacuum gas and water. There is also a fume hood, a water still centrifuge and refrigerator.

The balance room contains the analytical balances necessary to any chemical laboratory for weighing purposes. Plans are eventually to dust-proof this room.

The operating room also contains standare equipment. A kymograph is installed for the purpose of recording pulse waves, respiratory movements, etc.

The high altitude laboratory contains three pressure chambers, two small, having a capacity of 3 cubic feet, and a very large one. The latter has been recently completed and represents the results of several years of experience in the operation of the first pressure chamber, installed several years ago in the Equipment Laboratory of the Materiel Division.

The new chamber is a great cylindrical steel tube, 31 feet long and 8 feet inside diameter. The interior is divided into three sections, a central compartment 6 feet long, bisecting two identical end compartments, each 12 feet long. Entrance to the end compartments from the center is by two gastight heavy metal doors, equipped with ball bearing hinges, rubber gaskets, and catches, manually operable from within and without. The end compartments are in effect two separate pressure chambers in which separate tests may be performed simultaneously under the same or entirely different pressure conditions. Or if desired, the large doors into the center compartment may be left

open, the whole structure forming one 31-foot pressure chamber, which may be positively sealed for any desired temperature or pressure condition by a single entrance door, similar to those dividing the end compartments, leading from outside the pressure chamber into the center compartment.

The chief purpose of the central compartment, however, is to serve as a lock through which entrance can be made from the outside to the end sections during tests without disturbing the pressure conditions in them. The center compartment is entered and the outside door closed. Pressure and temperature conditions are then produced in the center chamber identical to those of the end chamber into which entrance is desired. When these results have been obtained the door into the end chamber may be opened easily and the two chambers in effect become one. Exit can be obtained by closing the door between the end and center compartments, bringing the center chamber back to normal pressure and opening the outer door. It is an interesting experience to see the actual fastness of a door held shut by normal air pressure against an evacuated pressure. Air evacuation to the equivalent of 80,000 feet above sea level and refrigeration to -65° F. can be accomplished in this pressure chamber.

In one of the end compartments at present is a smaller tubular chamber large enough for a man to crawl into, in which the conditions of the supercharged pressure cabin airplane will be simulated while the surrounding air of the compartment will be that encountered at high altitudes. In all such experimental work, flying personnel will willingly act as the human guinea pigs.

Six observation windows 28 inches in diameter, three for each end compartment, are constructed of safety glass one inch thick, and made fog or frost proof by using two thicknesses, with an air or vacuum space in between. Telephones installed in each compartment make it possible for persons sealed inside during tests to communicate with observers outside the pressure chamber.

The value of the research which may be accomplished with such equipment and competent personnel is almost inconceivable. Practically all the physical reactions of the aviator to altitude flying may be carefully studied while he remains safely on the ground. The effect of extreme cold upon efficiency; the effectiveness of present flying clothing against this cold, the testing of oxygen equipment, the physical and mental reaction of flyers to oxygen over varying periods of time, the effect of carbon monoxide at high altitudes and low temperatures, investigations of use of oxygen mixed with carbon dioxide at high altitudes, and supercharged cabins under high altitude flying conditions are a few of the many problems unsolved. The answer to such problems as these may also be the answer to certain unexplained crashes where pilot and equipment were apparently in first-class condition.

Although not located in the main laboratory building, a centrifugal force laboratory is used in connection with this work. This contains a large centrifuge by means of which it is possible to simulate the forces produced on the body by various aircraft maneuvers, particularly high speed turns, loops, and spins-such maneuvers, in fact, as have been associated with the "blacking out" experience described by various pilots, a condition recognized but never fully analyzed. With the centrifuge, centrifugal forces twenty times the normal acceleration of gravity can be produced. It is estimated that approximately eight times the pull of gravity is sufficient to cause the "blacking out" effect, or momentary unconsciousness. The structure is of duralumin tubing 20 feet long and is mounted to rotate about a horizontal axis. It is operated by an electric motor through a variable speed drive. One end is arranged to accommodate the subject, while the other contains a compartment for counterweights. A recording accelerometer indicates the amount of force produced, while a special instrument makes a graphic record of changes in blood pressure during rotation.

The future of aviation was never more promising. At our threshold higher speeds, longer ranges, greater mechanical efficiency, substratosphere air lanes are virtually ready for us. All these are not of the slightest value, however, unless man is ready to take advantage of them. It is only by scientific and detached study of the physiological and psychological reactions of aviators to the various modern flight conditions that safety can be obtained, even making allowances for a high degree of mechanical efficiency. History has sharpened the point that mechanical efficiency counts only insofar as mankind in applying human efficiency can adapt it to the routine uses of living.

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According to the Riverside, Calif., DAILY PRESS, the Board of Directors of the Riverside Chamber of Commerce has launched a campaign to enlarge March Field and purchase a gunnery range at Muroc Dry Lake. This action followed a report of the aviation committee which has been studying the needs of March Field. Results of the survey made by the committee showed that the Muroc gunnery range would be of benefit not only to aviation but other branches of the service as well. It would provide anti-aircraft and mobile units of the Coast Artillery with a practice ground.

V-7267, A.C.

MIRROR PROVES HANDY ARTICLE IN EMERGENCY

A Navy Department press release tells of the ingenuity of a Marine Corps reserve sergeant from the Kansas City base which proved to be of the greatest assistance to one of Pensacola's flight instructors recently.

Captain Peters, U.S. Marine Corps Reserve, departed from Pensacola for Kansas City in an FF-2 plane with Sergeant Caldwell as passenger, Memphis being the first scheduled stop. Word was received at Pensacola that the plane had been forced down in a cotton field just north of Coffeyville, Ala., with a broken oil line, no other damage resulting. No oil lines to fit the description being available, a plane was dispatched to the scene to pick up the oil line and return same to the Pensacola Naval Air Station for repair. The pilot's description of the location of the grounded plane was definite within about a three mile limit. Upon arrival near the scene, the Pensacola pilot was unable to locate the other plane, as it was in a hilly, wooded country, abundant with pines and small clearings.

After several minutes search in a gradually increasing turning circle, the pilot suddenly noticed a bright flash of light which struck him in the eyes and continued to follow him. Immediately, he investigated the cause of the flashing light and discovered the other plane. A safe landing was made in the same clearing. The men on the ground had seen the circling plane and, being powerless to communicate with it, Sergeant Caldwell suddenly hit on the novel idea of a mirror to attract the pilot's attention. Accordingly, he drew one from his pocket and was successful in his first attempt to attract the pilot's attention. The Pensacola plane returned the oil line to Pensacola, where it was repaired, and the following morning it was returned to the grounded plane, thus enabling it to continue on its way to Kansas City.

Thus another use has been found for a mirror aside from its value as a toilet article.

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MORE NAVIGATORS FOR 2ND BOMB. GROUP

The Navigation Unit, Langley Field, Va., has just turned over four fully trained navigators to the 2nd Bombardment Group, GHQ Air Force, and started the instruction of four more officers in this subject. Those completing the class are 1st Lieuts. F.E. Glantzberg, W.H. Higgins, D.M. Kilpatrick and P.G. Miller. Those assigned to the new class are 1st Lieuts. R.E. Koon, W.A. Matheny, C.H. Rees and E.P. Mussett. When the 2nd Bombardment Group is completely equipped with the Y1B-17 planes, the navigators will undoubtedly obtain ample practice in navigation on long flights.

BIG BOMBER DELIVERED TO LANGLEY FIELD

The 2nd Bombardment Group, GHQ Air Force, Langley Field, Va., received on March 4th the first of the Y1B-17 airplanes delivered to a tactical unit. The officers and men of the Group were drawn up in parade formation to welcome the first "Flying Fortress."

With Major Barney M. Giles and Captain C.E. O'Connor at the controls, the huge plane flew by in review twice, and then glided in for a perfect landing on a snow-covered field. The size of the plane was not fully realized until it taxied to its position on the ramp, between a B-10B and a PB-2A. Major General Frank M. Andrews, Commanding General of the GHQ Air Force, and Brigadier General Henry C. Pratt, Commanding General of the 2nd Wing, GHQ Air Force, were both present to welcome Major Giles, the plane and crew to Langley Field.

On March 11th, Major C.V. Haynes delivered the second Y1B-17 to the 2nd Bombardment Group. The first one was assigned to the 96th Bombardment Squadron and the second one to the 49th Bombardment Squadron. At the time this was written, a crew from the 20th Bombardment Squadron was in readiness to depart for Seattle, Wash., to secure the third plane.

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SAFE LANDING SANS ONE LANDING GEAR

Luck and good piloting rode in the cockpit of one of the B-10B Bombers at Hamilton Field recently. Taking off for an Instrument Qualification Test, Lieut. Dale O. Smith, Air Corps, pilot, was notified by radio a short time later that one of his landing gears had fallen off. During the few moments after the warning was issued, the radio department had gotten in touch with the Commanding Officer, Colonel Davenport Johnson, who immediately rushed to the scene. By radio the Colonel and his aides issued instructions to the pilot and prepared to stand by for an emergency landing.

One of the wheels had stuck at about three quarters "wheels down" position, which tended to make the landing a dangerous one. After what seemed to be a century of waiting, the pilot started the plane on its downward path. Lower and lower it came until at the exact moment necessary for safety it hit. The wheel remained collapsed and the plane slid a few feet on its belly, slithering to a beautiful landing. Almost immediately the men were on the turf searching for fire.

The crew was composed Lieut. George F. Kinzie, co-pilot; Staff Sergeant R.F. Summers, Crew Chief, and Private Wiley C. Walters, Radio Operator.

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Items for the News Letter from March, Wheeler and Maxwell Fields are solicited.

V-7267, A.C.

YB-17 BOMBER LANDS AT BOLLING FIELD

SOARING majestically through the skies, the Army's new sovereign of the airways - the Boeing Bomber, YB-17 - circled Bolling Field on March 9th several times by way of heralding its arrival, and then came to a perfect landing on the new field to remain for a visit of inspection of four days.

A mutual tribute was paid in this landing. It was only fitting and proper that the Army's newest airplane creation should be the first to make an official landing on the new Bolling Field runways. This does not mean, however, that the new Bolling Field runways are in operation. While they are practically completed, there are no servicing or housing facilities for aircraft available. The old field will remain the official landing area until such time as funds are allotted by Congress for the necessary construction of technical buildings and they are completed. The Bomber's smooth landing proved, beyond the shadow of a doubt, that the new runways are perfectly equipped to accommodate any kind of aircraft.

Under the command of Lieut. Colonel Robert Olds, with Major Barney M. Giles as pilot, the "Big Ben of Bombers" was a most impressive spectacle in the air, with its powerful engines humming a tune of perfect rhythm. Once landed, it was taxied off the runway, properly secured and guarded by a quartet of sentries at all times.

Local newspapers featured the story of the plane's visit, and many hundreds of air minded citizens from Washington and vicinity came to view and pay tribute to its inspiring size, beauty and formidable fighting capabilities.

Several informal functions were held at the Officers' Club in honor of the visiting pilots, and the NCO Club held "Open House" for the picked enlisted men of Langley Field who comprised the crew.

On March 12th, at about 3:00 p.m., the great bomber again took to the air on its return trip to Langley Field, leaving Bolling Field personnel proud of both the visit and the unexpected "inauguration" of its new field.

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CAPITAL POLICE RECOVER STOLEN BALLOONS

Parking his automobile on a Washington street last week, Captain William H. Wenstrom, Signal Corps, Meteorological Officer of the 3rd Corps Area, stationed at Bolling Field, later returned to find that a box containing some four hundred balloons of the type used for weather observation had been stolenfrom his car.

By diligent effort on the part of the Washington police, the balloons were located in an abandoned stolen automobile.

AIRPLANES GAIN WEIGHT DURING FLIGHT

By the Hamilton Field Correspondent

The 9th Bombardment Squadron feels that they know the worst conditions for bombing, and as this Squadron completed bombing in accordance with TR 440-40 (Tentative) on February 20th and qualified only one bombardier, the following statement may have a concrete foundation. But first we would like to call to everyone's attention that these conditions are a bit "unusual" for this fair State of California.

We pride ourselves out here on knowing the place for each of nature's elements. This area being somewhat noted for the foggy conditions, we take these bad days in a willing, cheerful manner, but when Washington, Oregon and Northern California are in flames and a strong north wind is blowing, conditions may be said to be a little out of hand.

Knowing that it takes a little smoke or dust to bring on the gentle rains, we are naturally agreeable, but the feeling of rebellion was climaxed when slush floated around over the bombing targets in layers from the ground to eight thousand feet, and a pilot would land after a heart-breaking mission of two hours on instruments with his airplane weighing more than it did on the take-off. It may be advisable, if this sort of thing continues, that all airplanes in this area be equipped with flushing tanks for the purpose of bathing the various parts of our noble airplane.

It is also believed that if our opponents in any future engagements would add the essence of fir or the tang of mountain oak into their smoke screens, each and every combat man in this squadron would relaxwith the satisfied contentment of being at home again.

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5TH AIR BASE SQDN. A GROWING ORGANIZATION

Since the new allocation of 200 men to the 5th Air Base Squadron, Hamilton Field, Calif., business seems to have reached the peak. Paper is flying in all directions, and the Squadron as a whole have felt in many ways the need of a larger barrack and all accouterments. This squadron has received during the past week 114 recruits, bringing the Squadron count up to 434. Among these new men are to be found three sets of brothers, which seems to be a bit unusual to this correspondent, so we will delve into the facts of the case and add a few names to this bit of news. Privates Clyde F. and Elmer E. Hawes hail from Salem, Oregon. Privates John J. and Lyle B. Clemans are natives of Billings, Montana. Next in line are twins, i.e., Privates Milton D. and Milburn W. Raynor, of Dubois, Idaho. All of these men are recruits and they seem to enjoy the routine of Army life.

THE BOMBER B-THIRTEEN

(With apologies to that nonsensical old sea song, "A Capital Ship")

Oh, a capital ship for an aerial trip
Was the bomber B-Thirteen.
No breeze that blew dismayed her crew
Or troubled the captain's spleen.
So away she wheeled from the old home field
On a mission far away;
And the home troops cheered as the old ship cleared
At the speed of a one horse shay.

Chorus

Then blow, ye winds, heigh ho!
A-roving I will go!
I'll not be found on solid ground
So let the music play!
I'm off by the morning light!
And I won't be back till night!
I'm off for a trip in an aerial ship
A thousand miles away!

The gunner we had was apparently mad
For the fare he fed his guns
Was a pound or three of T.N.T.
Mixed up with a few stale buns.
His shots were as wild as a wayward child
But his bullets roared afar;
They were every bit as likely to hit
Their mark as the morning star.

Our bomber thought that the thing most sought
Was a detonating blast;
And whether it blew in the ground or the blue,
Was a question he never asked.
His bombs plunged down on a friendly town
Or a hostile rampart grim;
And the havoc they wrought was often as naught
To the hell that was raised with him.

Our radio op talked endless shop
On the ground and in the air.
When the terminal fort sent a weather report
He was always tuned elsewhere.
His voice was as raw as a black crow's caw
When it caws at the rising moon,
And the usual tone of his microphone
Was the ring of a small spitoon.

The old ship's prow was pointed now
At the mountains dour and dree,
And the ridges rose beneath her nose
Like the waves of a monstrous sea.
But one by one, in the dimming sun,
They slowly dropped astern,
As the pilots twain with might and main
Spun wheel for a bank or a turn.

The captain sat on his folding hat
And his pants of olive brown,
For he wanted to wear them both to the fair
When the good ship got to town.
He was old and gray, and had got that way
In his service through the years;
But his eyes were as true as the ocean's blue
And he knew no silly fears.

As they droned along to the motor's song,
The sky, that had been clear,
Was dimmed by the shrouds of drifting clouds,
Which warned that a storm was near.
The dark clouds grew in the western blue
To a wall that towered higher,
'Till the leaden pall of the thunder squall
Was split by the lightning's fire.

The pilots heaved as the old ship weaved;
They called on the interphone.
But the captain heard not a profane word
And answer made he none.
The ship plunged down like a tumbling clown
And up like a free balloon;
And the lightning flared till no one dared
Look out in the leaden gloom.

They were flying blind in a bitter grind
When the lashing hail began;
And it tore the wings into shreds and strings
All along their straining span.
But a fierce upblast caught the ship at last
And tossed her aloft bewhiles.
She was in a dive, but that great updrive,
It carried her up for miles.

Up there in the rime was an Arctic clime,
And the wings glazed over with ice;
And the motors true at last they knew
The grip of a frigid vise.
They sputtered and died in that cloudland wide
Where the lightning flashed between;
And the thunder rolled through the silence cold,
And down went the B-Thirteen.

She dropped in a dive that none could survive
And the pilots ordered all hands
To review their sins and jump for their skins
Ere she crashed on those mountain strands.
The gunner fell like a devil towards hell
As he hugged his beloved gun,
And the bomber followed in the path he hollowed,
And the others, one by one.

Then last of all did the pilots fall,
Well clear of the plunging craft;
And they thought, too late, of their traveling mate
Of the captain, wedged back aft.
They watched the ship on its downward trip,
And pulled on their parachute rings;
And the strong cloth spread over every head
So they drifted on silken wings.

They watched the career of the B-Thirteen,
And they wept for the captain's fate.
For the clouds now broke like dissolving smoke,
And the sun shone through in state.
The ridges rose beneath her nose
Like the horns of an angry bull,
And with senses numb for the crash to come,
They watched, and their hearts were full.

But wait! That plane was flying again
And ahead of her, plain to see,
Was the welcome yield of a mountain field
Where the forest used to be.
She turned from her glide to neither side
As she settled smoothly to earth;
And she rolled to a stand on that level land
As snug as a bug in a berth.

In that selfsame clearing the others were nearing
The ground, when they gasped to hear
The captain roar from the after door
Like a bull with a bee in his ear.
"You boobs," he yelled, "this crate has held
Through worse storms, in her prime.
She flies as nice with wings of ice,
As with fabric, any time."

V-7267, A.C.

At the old home fort an official report
Went forward to Washington;
And the medal looked well on the captain's lapel,
Where the President pinned it on.
And everyone said that a hero was made,
But the truth was otherwise --
In that stormy deep he had been sound asleep,
Not once had he opened his eyes!

- William H. Wenstrom.

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WELL KNOWN FLYER TAKES POSTMAN'S HOLIDAY

Second Lieut. Joseph C. Mackey, Air Reserve, acrobatic pilot and sky writer extraordinary, has recently completed a 14-day tour of active duty with the Air Corps Detachment at Port Columbus, Ohio.

In civilian life, Lieut. Mackey heads his own Flying Service at Findlay, Ohio, and holds an advertising contract with a prominent mid-west oil company. Thousands have acclaimed his prowess as a "stunter" during the past few years. At the Miami Air Races in 1936, he was awarded the Freddie Lund Trophy for acrobatic flying, after placing second in the International Air Show event at Paris, France, earlier in the year.

Lieut. Mackey reported that his fourteen days with the Military were well worth while. Particularly so were his flying hours in the new North American BT-9A's (not stunting).

"I value very highly the training I have received at Port Columbus, especially the instrument, radio beacon and tactical flying I had with the latest types of Army Air Corps equipment. With my own planes, practically all of my time is spent in keeping the up-side-down carburetors well lubricated and in checking the tensile strength of my safety belts," stated Lieut. Mackey upon his return to Inactive Duty status.

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COLORFUL CEREMONY FOR PRESENTATION OF TROPHIES

All squadrons of the Air Corps Advanced Flying School, Kelly Field, Texas, were on Saturday morning, March 13th, formed in a hollow square on the ramp in front of Post Operations. Colonel Arnold N. Krogstad, Commandant of the Advanced Flying School, presented four medals to 1st Lieut. Charles F. Densford, Air Corps, with the following remarks:

"Lieut. Densford, it gives me great pleasure to present to you, on behalf of the Michigan State Rifle Association, these four beautiful medals for proficiency in Pistol Competition. These medals are not only of intrinsic value, but indicate that you possess a skill in pistol shooting which represents years of effort on your part and reflects great credit on you, the U.S. Army, and the Air Corps, of which you are a representative."

These medals were won at the Michigan State Rifle Matches, held from July 4th to 12th, 1936, in matches as follows:

1st Prize for Rapid Fire with Pistol.
2nd Prize for Individual .38 Pistol Match.
3rd Prize for Individual .22 Caliber Pistol Match.
1st Prize for Individual Grand Aggregate Score with Pistol.

Colonel Krogstad then presented blue zipper type jackets, having on them a large yellow letter "K," standing for Kelly Field, to the members of the Post Football Team, with the following remarks:

"While we did not win any championship in football last fall, we did have a team representing Kelly Field. It isn't necessary to win a championship to have a successful season. The members of our team had the spirit to win and acquitted themselves in a worthy manner. They worked hard to give the rest of us enjoyment, and it is in recognition of this spirit of endeavor that we are presenting awards today."

The following men received jackets:

L.F. Anderson	V.L. Harrison	O. Howard
G.H. Geaslin	C.L. Sommers	S. DeFan
H.W. Beare	E.C. Lewis	P.E. Patton
L.F. Wallace	J.A. Sauer	C.K. Russell
R. Flagler	D.H. Smith	G. Collins

The News Letter Correspondent states that 1st Lieut. E.J. Timberlake, Jr., deserves a lot of credit for his work as coach of this team.

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DUTY ASSIGNMENTS OF ADVANCED FLYING SCHOOL STUDENT OFFICERS

The following-named Air Corps officers, now on duty as students at the Advanced Flying School, Kelly Field, Texas, and who are specializing in Observation Aviation, were, under Special Orders of the War Department recently issued, assigned to duty at the stations indicated upon the completion of their present course of instruction, viz:

Lieut. Colonel Laurence F. Stone and Lieut. Colonel Raymond E. O'Neill (Major) to March Field, Calif.

Major Walter J. Reed to Langley Field, Va.

Captain James F.J. Early to Langley Field, Va.

Captain Howard H. Couch to Mitchel Field, N.Y., for duty with 97th Observation Squadron.

Major George G. Lundberg (Captain) to Middletown Air Depot, Pa.

Captain John P. Kirkendall to the Hawaiian Department.

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STUDENTS ASSIGNED TO AIR CORPS TECHNICAL SCHOOL

First Lieut. Clayton E. Hughes has been assigned to duty as student in the Airplane Maintenance Engineering course at the Air Corps Technical School, reporting not later than August 15, 1937. First Lieut. George F. Hartman and 2nd Lieut. Charles B. Harvin are under orders to report to this school not later than September 19, 1937, for duty as students in the Communications course, while 1st Lieut. John C. Kilborn, of Randolph Field, is to report for duty as student in the Armament course.

The orders assigning 1st Lieut. John C. Horton, of Randolph Field, for duty as student in the Armament course at the Air Corps Technical School have been revoked.

duty as Air Officer of the 6th Corps Area. He returned to Brooks Field on October 16, 1935, since which time he has commanded the post and the 12th Observation Group.

Colonel Miller received his promotion to 1st Lieutenant, July 1, 1916; to Captain, July 2[illegible], 1917; to Major, March 17, 1925, and to Lieut. Colonel, November 1, 1936. He held the temporary rank of Major of Cavalry, August 8, 1918, to March 15, 1920; and that of Lieut. Colonel, June 18 to October 15, 1935; October 29, 1935, to November 1, 1936. He holds the flying ratings of Airplane Pilot and Airplane Observer, and is on the General Staff Corps eligible list.

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LIEUT. COLONEL HUBERT R. HARMON

Lieut. Colonel Hubert R. Harmon, Air Corps, now on duty as Commanding Officer of the 19th Bombardment Group, GHQ Air Force, March Field, Calif., was born at Chester, Pa., April 5, 1892. After attending the Polytechnic Preparatory School in Brooklyn, N.Y., for two years, he was appointed to the U.S. Military Academy, West Point, N.Y., from which he graduated June 12, 1915, whereupon he was commissioned a Second Lieutenant, Coast Artillery Corps. He served at Fort Monroe, Va., from September 12 to November 30, 1915; at Fort Andrews, Mass., to May 4, 1916; at Plattsburg, N.Y., as Adjutant of camp for regular troops and Assistant Adjutant, Business Men's Training Camp, May 8 to October 8, 1916; and again at Fort Andrews, Mass., to November 24, 1916.

Attached to the Aviation Section, Signal Corps, he was a student at the Signal Corps Aviation School at San Diego, Calif., from December 8, 1916, to May 20, 1917. He was rated Junior Military Aviator to date from June 21, 1917.

Transferred to Fort Sam Houston, Texas, Colonel Harmon was recorder of the Aviation Examining Board at that post and Assistant Air Officer, Southern Department, to September 12, 1917. From September 13 to 26, 1917, he was stationed at Kelly Field, Texas, where he organized and served as Commandant of the Ground Officers' Training School. From September 26, 1917, to January 3, 1918, he was on duty as Department Aeronautical Officer, Southern Department, following which he was assigned as Engineer Officer of Kelly Field No. 2, San Antonio, Texas. On March 4, 1918, he was transferred to Taliaferro Field No. 2, Fort Worth, Texas, as Executive Officer.

From April 1 to September 3, 1918, Col. Harmon was Officer in Charge of Flying at Barron Field, Everman, Texas. He was then ordered to duty overseas and, following the completion of advanced training in Pursuit Aviation at the Third Aviation Instruction Center, Issoudun, France, he was, on January 5, 1919, assigned to duty as Chief of Staff to the Army Air Service Commander, 3rd Army, Coblenz, Germany, in which capacity he served until September 23, 1919. From September 26, 1919, to October 18, 1920, he was on duty as Aviation Officer, U.S. Liquidation Mission, Provisional District of Great Britain, London, England.

Returning to the United States, he was, on October 30, 1920, assigned to duty as Assistant Executive, Office of the Chief of Air Service, Washington, D.C., serving in that capacity until June 30, 1924. From October 28, 1921, he performed additional duty as Junior Aide at the White House, and as a member of various boards.

From July 1 to August 14, 1924, Col. Harmon was stationed at Bolling Field, D.C., following which he was transferred to McCook Field, Dayton, Ohio, for duty as student at the Air Service Engineering School. Upon his graduation, August 20, 1925, he returned to duty in the Office of the Chief of the Air Service, serving as Assistant Chief of the Information Division to March 10, 1926, and as Chief of that division until February 22, 1927. During his service in Washington, he also performed additional duty as White House Aide.

From March 3, 1927, to May 22, 1929, Colonel Harmon was on duty as Assistant Military Attache for Aviation at the American Embassy, London, England. He was then assigned to duty in the Department of Tactics, United States Military Academy, West Point, N.Y. In August, 1932, he was transferred to Maxwell Field, Ala., for duty as student at the Air Corps Tactical School. Following his graduation from this School in June, 1933, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1935, he was assigned to station at March Field, Riverside, Calif., where he was on duty as Executive and Operations Officer of the First Wing, GHQ Air Force, until August 17, 1936. He was then assigned to his present position as Commander of the 19th Bombardment Group.

Colonel Harmon was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, February 14, 1925; and to Lieut. Colonel, October 1, 1936. During the War he held the temporary rank of Major, and from August 13, 1935, to October 1, 1936, he held the temporary rank of Lieut. Colonel. He holds the flying ratings of Airplane Pilot and Airplane Observer, and is on the General Staff Corps eligible list.

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Under Special Orders of the War Department, recently issued, Colonel Albert L. Sneed, Air Corps, will proceed to Maxwell Field, Montgomery, Ala., for duty upon the completion of his tour of duty in the Philippines.

TRAINING QUESTIONNAIRE

THE Base Intelligence Officer, Selfridge Field, Mich., submitted copy of a "Training Questionnaire" covering a written examination recently conducted by each flight commander of the First Pursuit Group. He states that it is planned by the Group Commander to give similar examinations to all pilots semi-annually as a means of furthering the efficiency of individual pilots. The scope of this examination was, substantially, as follows. Some of the questions, being of a somewhat confidential nature, are here omitted.

1. The duties of S-1, S-3, S-4, and the Engineer Officer.
2. Show by diagram, with approximate distances specified, of normal flight formation and squadron normal formation.
3. Definition of Pursuit Aviation.
4. Procedure of Flights A and B in initial phase of squadron attack on 9 Bombardment planes formed in defensive formation.
5. Explanation of meaning of terms "Readiness," "Alert" and "Stations."
6. Significance of the signals Fishtail or Yaw; series of small dives or zooms; rock wings; leader dips wing to right when in an echelon of individual planes to the right; leader dips wing to the left.
7. Name two Class I and Class II supplies, and what are Class IV A and Class IV E supplies?
8. Procedure of pilot in event of forced landing across border.
9. How often do pilots take blind flying test.
10. What are qualifying scores in Pursuit Gunnery for Expert Aerial Gunner; 1st Class and 2nd Class Aerial Gunner?
11. With altitude of ceiling 2,000 feet and plane is just on top of the overcast at 6,000 feet, give procedure to bring it down through the overcast and land on a completely equipped airdrome.
12. Name two duties of the Squadron S-2.
13. As specified in TR 190-10, Conventional Signs, the basic symbol for a troop unit is [redacted]. How would you indicate that the unit is Air Corps - an Air Corps squadron - a Group - a Wing - an Antiaircraft Battalion?
15. In preparing for an inspection of airplanes preceding a review, what is the interval between airplanes and what may be the interval between flights and squadrons. Where is the parachute displayed on P-26 airplane. Where do the maintenance and combat crews take post?
16. What were some of the discrepancies noted in last 40-hour inspection of the airplane to which you are assigned as the combat crew?
17. Approximately how many hours before the next 20-hour check is to be made of the airplane to which you are assigned as the combat crew?
18. How much time was spent with maintenance crew during the last 40-hour inspection?
24. In a gas attack, why is it so important to have overhead cover of some kind?
25. Ammunition carried in P-26 airplane and how many quarts of oil in tank.
26. What altitude is used as a basis for aircraft reporting their altitude?
27. At what altitudes will aircraft fly on a true course from 0 degrees to 180 degrees, but not to include 180 degrees? From 180 degrees, but not to include 360 degrees?
28. Aircraft flying along and parallel to a designated civil airway shall fly where with respect to the "on course" signal?
29. Inbound planes shall fly where with respect to the radio ranges of a landing field?
30. Outbound planes shall fly where with respect to the radio ranges of a landing field?
31. At what altitude shall aircraft fly when crossing an airway and at what angle shall it be crossed?
32. What are the necessary radio contacts for approaching and departing from a landing field that has a control station?
33. What are the restrictions for approaching airports, with considerable traffic, without having radio (two way) in the ship?
34. May aircraft be flown below 2,000 feet in good weather for contact flying?
35. In flight, where could one find the frequency and call letter for any station on the airways?
36. Explain the difference between a hooded instrument flight and an intentional instrument flight and what are their restrictions.
37. After departure, how may a flight plan be changed with and without a radio in the airplane?
38. During a mass flight, how many airplanes should have their transmitters set on 3105 kilocycles?
39. What is the frequency for airplanes going on individual cross-country flights?
40. May intentional instrument flights be made along civil airways?
41. What are emergency altitudes, and by whom are they used?
42. What is the average maximum range of the SCR-183 radio transmitter?
43. Under what conditions are the following maneuvers permitted on a single-place Pursuit airplane - Inverted flight-normal spin - inverted spin.
44. What item of pilot's equipment must be carried during night flying in addition to the pilot's normal equipment?
45. What is the significance of the white traffic control light, A.C. type B-1A, to the pilot taxying on airdrome?

46. What is the minimum altitude at which military aircraft may fly over the White House in Washington?

47. You are 2nd Lt. A on a cross-country flight to Boston. Captain B, commanding the Air Corps Detachment, wants to take your airplane for a short local flight. What are your rights in the matter?

48. In applying for an extended cross-country flight, what two principles should guide the pilot in his choice of routes and airdromes for overnight stops?

49. What is the prescribed method to change from one source of fuel supply to another while in flight?

50. How can the proper setting of the fuel cock be determined?

51. What two precautions must be observed when using flaps for landing?

52. What precaution must be observed when retracting flaps immediately after take-off or when near stalling speeds?

53. What are the indications of ice formation in the carburetors?

54. Under what conditions is ice most likely to form in induction systems of engines?

55. What precaution should be taken to prevent ice formation in carburetors when flying under icing conditions?

56. What method may be used as a last resort to clear the ice from a carburetor?

57. What is the proper use of the throttle when starting an engine?

58. What is the proper method of using the mixture control to conserve fuel or to obtain maximum power at altitudes?

59. What may result from using an excessive amount of mixture control in the operation of air-cooled engines?

60. What five steps must be taken in stopping an aircraft engine?

61. What method should be used in stopping a fuel injector engine?

62. Why must the manifold pressure be reduced or the RPM decreased when checking magnetos?

63. What degree of accuracy can be expected with the type C5 (Kollsman Sensitive) altimeter?

64. How is pressure altitude obtained from a station altimeter?

65. What is pressure altitude variation?

66. What precautions must be taken when using below specification fuel, obtained for emergency use?

67. What action should be taken at earliest opportunity after use of lower than Air Corps Specification fuel?

68. What conditions of oil temperature and pressure must be obtained before full throttle operation?

69. What are the minimum altitude and maximum airspeed at which it is considered safe to release the M8 parachute flare?

70. What is the approximate area effectively lighted by an M8 flare when released between 1,000 and 3,000 feet?

ELIGIBLES FOR W.O. APPOINTMENT

The Adjutant General's Office, War Department, published a pamphlet showing, as of March 1, 1937, the names of noncommissioned officers who recently passed the examination for appointment as Warrant Officer of the Army, these names being placed on the eligible list in order of length of service in the Army, from which vacancies in the grade will be filled.

Of the 740 names of noncommissioned officers on the eligible list, 114 are members of the Army Air Corps - slightly over 15 percent of the total number of eligibles. Since the publication of this eligible list, a total of 67 noncommissioned officers received appointment to the grade of Warrant Officer, including six from the Army Air Corps. Consequently, the noncommissioned officer who was No. 68 on the list is now No. 1 thereon.

The first Air Corps noncommissioned officer now on the eligible list is Master Sergeant Charles Budoff, who was originally No. 77 and who is now No. 10.

The Air Corps noncommissioned officers on this list, together with their position thereon, appear below, as follows:

No.	Name
77	Master Sgt. Charles Budoff
85	Master Sgt. Charles Maylon
102	Master Sgt. Nico G. Loupos
108	Technical Sgt. Richard Rogers
141	Technical Sgt. Ruben St. John
146	Technical Sgt. Edcil C. Maxwell
169	Master Sgt. Harvey H. Hewitt
182	Master Sgt. Charles C. Leiby
188	Master Sgt. Murt[illegible] K. Morrill
190	Technical Sgt. William J. Riley
198	Master Sgt. Gervais J. Garner
205	Master Sgt. Harry Wilson
213	Master Sgt. Walter Johannsen
217	Master Sgt. James D. Mehegan
219	Staff Sgt. Jacob S. Brown
223	Master Sgt. Carlton P. Smith
235	Master Sgt. Thomas J. Kelly
239	Master Sgt. Clarence Haymes
247	Staff Sgt. Anthony Groves
260	Master Sgt. William H. Folz
271	Master Sgt. Stewart C. Smink
276	Technical Sgt. Lonnie M. Johnson
282	Master Sgt. Robert B. Travis
284	Master Sgt. Chester F. Colby
285	Master Sgt. Floyd B. Haney
286	Master Sgt. Olin Brown
293	Technical Sgt. Clyde W. Doyell
302	Master Sgt. David T. Murphy
316	Master Sgt. John W. Frazer
319	Staff Sgt. Paul D. Bennett
342	Master Sgt. Alvan Killgore
343	Staff Sgt. Chauncey L. Andersom
357	Master Sgt. Joe M. Cates
358	Master Sgt. Samuel J. Davis
359	Technical Sgt. William V. Apple
361	Master Sgt. Arvin E. Miller
363	Technical Sgt. Wallace H. Williams
366	Technical Sgt. Thomas L. Willison
369	Master Sgt. Bernard Wallace

No.	Name	
370	Technical Sgt.	Russell C. Peckham
371	Master Sgt.	Boyd D. Ertwine
375	First Sergeant	Steve Stanowich
382	Technical Sgt.	John B. Von Euw
386	Staff Sergeant	Emmett A. Mobley
404	Master Sgt.	Ronald M. Short
413	Staff Sergeant	Fred C. Brockhausen
425	Staff Sergeant	John H. MacKenzie
431	Staff Sergeant	William P. McQuillan
432	First Sergeant	Robert Miller
433	Staff Sergeant	Lemuel T. Payne
438	Staff Sergeant	Floy L. Ashley
440	First Sergeant	William L. Jones
444	Staff Sergeant	David L. Fredenburg
457	First Sergeant	C. W. Guttenberger
460	Sergeant	Chas. C. Cunningham
461	Technical Sgt.	Virgil Moore
462	Staff Sergeant	Albert G. Gerlach
469	Staff Sergeant	Oliver E. King
475	Sergeant	Nelson E. Morgan
476	Technical Sgt.	Artie L. Revert
481	Technical Sgt.	Albert E. Freathy
491	Staff Sergeant	Albert C. Bergis
493	Technical Sgt.	Earl B. Redifer
494	Master Sgt.	Julius A. Kolb
495	Master Sgt.	Raymond A. Stockwell
496	Master Sgt.	Albert V. Kanig
506	Staff Sergeant	Henry W. Spiller
508	Staff Sergeant	Harry A. Tunks
511	Technical Sgt.	William E. Pope
523	Staff Sergeant	Charles S. Segelbaum
525	Staff Sergeant	Leslie K. Kingsley
533	Staff Sergeant	Harry J. Pitre
535	Staff Sergeant	Joseph Montgomery
537	Technical Sgt.	Hugh J. Marth
539	Staff Sergeant	George R. Boston
540	Staff Sergeant	Sidney M. Rahn
543	Technical Sgt.	Paul Grossman
545	Technical Sgt.	William D. Croy
546	Staff Sergeant	Clyde C. Liming
555	Technical Sgt.	Henry H. Gray
556	Technical Sgt.	Leo I. Perman
559	Staff Sergeant	Manuel J. Novak
564	1st Sergeant	Leo W. Axford
572	Staff Sergeant	Raymond M. Bishop
573	Staff Sergeant	Joseph B. Greswick
589	Staff Sergeant	Almon S. Farrar
593	Staff Sergeant	George H. Goodrich
596	Technical Sgt.	Frank J. Siebenaler
600	Staff Sergeant	Maurice M. Beach
601	Staff Sergeant	Geyser W. Pulliam
609	First Sergeant	Richard W. Hahn
614	Corporal	Rudolph Lesnick
619	Technical Sgt.	Albert G. Hewitt
620	Staff Sergeant	Joseph Ducheane
626	Staff Sergeant	Ralph Colby
628	Staff Sergeant	Benjamin Harrison
635	Technical Sgt.	Joseph R. Grey
652	Staff Sergeant	Leonard Gilsen
662	Staff Sergeant	Samson Smith
665	Staff Sergeant	Robert M. Proudfoot
667	Technical Sgt.	Theodore C. Totman
678	Staff Sergeant	Thomas E. Arnold
681	Staff Sergeant	Francis Ledoux
688	Staff Sergeant	Milton H. Hawkins
691	Staff Sergeant	Frank Bobulski
717	Staff Sergeant	Edgar K. Hillman
721	Staff Sergeant	Arthur Hanson
740	Staff Sergeant	James C.Richardson

AERIAL GUNNERY DOESN'T WORRY FISHERMEN

Gunnery over the ocean! Blue and white waves breaking over the shoals and rocks of a rugged coast - and overhead a plane with a sleeve target drones by while another plane overtakes it from the rear. For an instant the peace and prosaic quietude is shattered by the cold chattering of a machine gun. But the fishermen in their tiny boats along the shore pay little heed - for 'tis an every day occurrence for them. They did take notice at first, and the boats would "up-anchor" and scamper away; but as the planes continued to fly back and forth between two fixed points, the planes became a part of the expected order of things.

In the 31st Bombardment Squadron, Hamilton Field, Calif., "Safety and Caution" have ever been the watchwords. One of the first rules observed is never to go to sea without having each member of the crew wearing a life-vest under his parachute and a pneumatic life raft in the belly of the ship. A second rule is to always shoot out to sea, and with a constant watch for boats in the direction of fire. A third rule that the Squadron observes is that cross-under courses be made only with the plane in level flight and not in a banking turn. It has been found that even the best pilots sometimes gain and lose altitude in banks. An unconscious gain in altitude while crossing under the steel tow line is apparently unhealthy - hence the rule for the fixed angle intersection of courses.

In an effort to maintain the GHQ Training Schedule with the three airplanes available to this Squadron, the engineering section has kept these ships in commission for flying every day. This has meant hard and efficient work. Inspections have been "pulled" after dark and repairs made late in the night in order that when eight o'clock the following morning rolls around the ships would be ready to take to the air.

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SHIFTS IN AIR DEPOT COMMANDERS

Colonel Lawrence S. Churchill (Lieut. Col.), Air Corps, commanding the Middletown Air Depot, Middletown, Pa., is under orders to proceed to Langley Field, Va., for duty. Colonel Jacob W. S. Wuest, who has been in command of the Rockwell Air Depot, Coronado, Calif., is under orders to proceed to Middletown, Pa., to assume command of the Air Depot. Lieut. Colonel Harold A. Strauss, who for a number of years has been Chief of the Procurement Section of the Air Corps Materiel Division, Wright Field, Dayton, Ohio, succeeds Colonel Wuest as Commanding Officer of the Rockwell Air Depot. These changes go into effect this summer.

THE SOLDIER IN THE ARMY

COLONEL Henry B. Clagett, Air Corps, Commanding Officer of Selfridge Field, Mt. Clemens, Mich., recently addressed about 150 recruits of less than one year's service who had gathered in the Post Theatre. He dwelt on the various phases of the life of a soldier, starting from the entrance into the service, the period of transition between that of a civilian and a soldier in which the former becomes acclimated to the life of a soldier, the advantages of the Army to the individual, the education he can receive which will benefit him in his career as a soldier or as a civilian after his enlistment has expired, the advantages the Army offers as a career, the necessity of discipline, and the services they render to their country, to their family, and to themselves.

Colonel Clagett emphasized the elaborate school system of Selfridge Field, whereby the young soldier could elect to pursue a definite training. There are many vocations offered in the school system of Selfridge Field, none of which are different than those pursued in civil life. Should the soldier pursue any one of these courses in a conscientious and thorough manner, he would be qualified, upon the expiration of his term of enlistment, to step out into civil life with a journeyman rating in such vocation and take his place amongst the best mechanics of his kind.

Emphasizing the military training given to the soldier, Colonel Clagett stressed the point where a man schooled in the art of discipline and soldierly attributes was assured of becoming a success in the Army or in civil life.

Having learned the principles of discipline, the soldier, upon expiration of his term of enlistment, can step out into civil life and take his place in society as a trustworthy and honest citizen.

Colonel Clagett also emphasized the necessity of the soldier's conduct, particularly when in the presence of civilians and away from the military reservation, so that nothing but the finest credit could be reflected upon the service.

His address was most interesting, as evinced by the attention and enthusiasm given to him by his audience.

Colonel Clagett is a soldier of over 36 years' service, and his remarks were based upon these years of experience. He has always evinced a great deal of interest in the welfare of the soldiers of his command, and particularly looked out for the welfare of the young soldier or recruit. He has made himself available to these young soldiers for advice or any instructions that they might seek, and has instilled into his officers and older soldiers this same spirit of friendliness towards the young man just entering on a military career.

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VISIT TO SELFRIDGE FIELD BY HIGH SCHOOL AVIATION CLUB.

Mr. Paul B. Hartman of the Department of Industrial Arts of the Devilbiss High School, Toledo, Ohio, received a letter from Army Air Corps officials at Selfridge Field, Mt. Clemens, Mich., stating that they would be very happy to have the students of that school as their guests on an inspection tour of the Air Base. Accordingly, the Aviation Club of the Devilbiss High School announced plans for a pilgrimage to Selfridge Field on March 30th.

It was arranged for pilots of the Regular Army Air Corps units to act as guides for members of the club during their tour through various machine shops, maintenance, repair and assembly hangars, and while inspecting and observing the actual training of the fighting airplanes and their crews of the famous First Pursuit Group.

The units at Selfridge Field have probably more historical interest for the visitor than any other such group in the country. All the squadrons at Selfridge participated in battles of the World War in France. Almost every famous American "Ace" served as a member of this Group in the World War days, among them being Captain Eddie Rickenbacker; Major Raoul Lufbery; Frank Luke, the "Balloon Buster;" Reed Landis, son of the well known Judge Kenesaw Mountain Landis; Wilbur White; Major Frank O'D. Hunter, and many others.

Famous mementos of the World War days are still exhibited and highly prized by the present personnel of the First Pursuit Group.

Selfridge Field is also the scene of the Army's famous annual Mitchel Trophy Race, which is open only to pilots of the First Pursuit Group and which has attained great fame not only as the oldest established air race in the world but also as the safest, since even though these races are flown with military fighting aircraft not a single participant has ever been injured since this contest for the John L. Mitchell Trophy was inaugurated in 1922.

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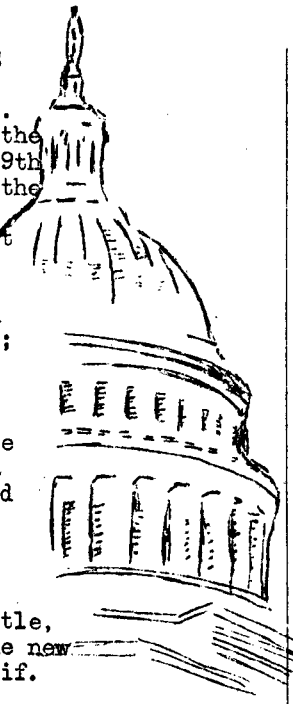
Colonel Arthur G. Fisher, until recently Commandant of the Air Corps Tactical School, Maxwell Field, Ala., assumed command of Scott Field, Ill., on March 22nd.

WASHINGTON OFFICE NOTES



Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, returned March 19th from an inspection trip to the West Coast. While on this trip he visited the aircraft plants of the Stearman Aircraft Co., Wichita, Kansas; the North American Aviation factory, Los Angeles, Calif.; the Northrop Corporation, Inglewood, Calif.; the Consolidated Aircraft Corporation, San Diego, Calif.; the Douglas Aircraft Co., Santa Monica, Calif.; the Lockheed Aircraft Corp., Burbank, Calif.; the Vulta Airplane Development Corporation, Glendale, Calif., and the Boeing Aircraft Co. at Seattle, Wash. He also inspected the new Air Base at Sacramento, Calif.

Major Lowell H. Smith, Chief of the Inspection Division, left March 28th on an inspection trip.

Recent visitors to the Chief's Office were Captain Benjamin W. Chidlaw, from Fort Leavenworth, Kansas; Major William W. Welsh, from Maxwell Field, Ala., and Captain John W. Warren, from Fort Benning, Ga., during the course of extended navigation flights.

Recent visitors from Langley Field were . . . Majors Otto G. Trunk Lawrence P. Hickey, and Edgar E. Glenn.

Major Robert Kauch made a ferry flight to Wright Field, March 27th.

Captain S.W. Towle, Jr., of the Personnel Division, left March 20th on a navigation flight to Chicago, Ill.

Major Malcolm C. Grow left March 27th on an inspection trip to Camp Lewis, Wash.

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90TH ATTACK SQUADRON WINS EFFICIENCY TROPHY

The Third Attack Group was honored on Saturday, March 13th, by the awarding of the Harmon Trophy to the 90th Attack Squadron of that Group. The Harmon Trophy had previously been presented to Barksdale Field by a group of Shreveport business men, in honor of Colonel Millard F. Harmon, first commanding officer of that field, with the suggestion that it be awarded annually to the organization having the highest efficiency rating.

Decision as to a suitable basis for making the award proved something of a problem, but a system was finally evolved which took into consideration the number of hours flown and the average number of airplanes in commission per number of airplanes assigned, also the number of forced landings during the calendar year.

Brigadier General Gerald C. Brant presented the Trophy directly to Captain William N. Amis, commanding officer of the 90th Squadron, who in turn passed it on to his Engineering Officer, 2nd Lieut. Charles H. Leitner, Jr. An inspection and an aerial review followed immediately.

The review was all but interrupted by a sudden rainstorm which almost obscured the field, as the 17th and 8th Attack Squadrons, followed by the 20th Pursuit Group, approached the reviewing stand. Despite the difficulties encountered, the review was completed as planned, with no greater discomfort to the pilots than a little browbeating from the rain. The 90th Attack Squadron, both commissioned and enlisted, standing on the ramp in full uniform, fared worse, receiving a thorough drenching from the rain. The prescribed attire for the farewell party in honor of General Brant, who was leaving for his new assignment at Langley Field, Va., was hurriedly changed from full uniform to optional dress.

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STATION ASSIGNMENTS OF TACTICAL SCHOOL GRADUATES

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers are assigned to duty at the stations indicated, effective upon the completion of their present course of instruction at the Air Corps Tactical School, Maxwell Field, Ala.:

To Chanute Field, Ill.: Lieut. Colonel Lloyd N. Keesling (Major), Captain John K. Nissley.

To Middletown Air Depot, Middletown, Pa.: Major Ray A. Dunn.

To Langley Field, Va.: Major Clyde V. Finter, Captain Alva L. Harvey, 1st Lieut. Frank H. Robinson.

To Barksdale Field, Shreveport, La.: Major James M. Gillespie (Captain), Major Paul L. Williams (Captain), 1st Lieut. Bud J. Peaslee.

To Selfridge Field, Mich.: Major William C. Goldsborough (Captain),

To Mitchel Field, N.Y.: Major Ulysses G. Jones (Captain), Captain Joseph Smith.

To Scott Field, Ill.: 1st Lieut. Fay O. Dice, with 15th Observation Squadron.

To Hamilton Field, Calif.: Majors Harold A. Bartron (Captain) and Edward D. Jones (Captain).

To Office Chief of the Air Corps, Washington: Major Wallace G. Smith.

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WAR DEPARTMENT SPECIAL ORDERS

Changes of Station: To Bolling Field, D.C.: 1st Lt. Robert L. Fenton, from Randolph Field.

To Chanute Field, Ill.: Captain David J. Ellinger, from San Antonio Air Depot.

To San Antonio Air Depot: Captain George A. Whatley, from Kelly Field, Texas.

Retirement: Captain Isaac J. Williams, March 31, 1937, for disability incident to service.

Relieved from duty with Air Corps: 2nd Lieut. Leland R. Drake, from Air Corps Training Center to Philippines for assignment to duty with the Coast Artillery Corps.

Extension of active duty of Reserve Officers: 2nd Lt. Richard T. Black, now in Panama, to Nov. 15, 1939; 2nd Lt. Marion D. Unruh, now in Panama, to October 31, 1939.

A NEW DEAL IN PANAMA

By the News Letter Correspondent

FOR years the cry has been 'The trouble with Panama is you can't fly anywhere but up and down the ditch." But at last, to everyone's joy, this old cry has been relegated to the junk heap.

Through the combined efforts of Brigadier General George H. Brett, Lieut. Colonel B.G. Weir and Major George R. Beverly, the policy of no cross countries has changed to a policy of flights to as many countries as possible. No longer will Air Corps officers in Panama be green with envy of officers in the States taking 500 and 1,000-mile flights, and this is only the beginning

On February 18th, fourteen ships from Albrook Field took off for a flight to Guatemala City. After gasing at David, the flight was on its way to Managua, Nicaragua, where we spent the first night of our journey. The next day, a "hop" of three hours put us in Guatemala City by noon, and everyone was amazed to find one of the most beautiful airport buildings they had ever seen. This three-hour "hop" took us out of Nicaragua over El Salvador into Guatemala, and it was one of the most interesting flights we have had the pleasure of making. Four active volcanoes were passed, also many extinct craters, one of which was large enough to fly into and easily circle in its depths.

Guatemala is one of the most picturesque and historical cities it has been our pleasure to see, and everyone was disappointed in not being able to spend more time in seeing the sights. However, every camera in the flight worked overtime, and many excellent pictures were taken.

The following afternoon found us in San Jose, Costa Rica, another interesting city to which cross countries from Panama can be made by requesting ten days in advance. The next evening we were back at Albrook Field tired but satisfied that we had enjoyed every minute of the trip. We were royally welcomed at each stopping point and given the assurance that we would be welcome back at any time.

Another flight of nine ships is scheduled soon to take off for Lima, Peru, and several similar trips are planned in the next several months. The crust has been broken, boys, and all indications point to flights of this nature being a regular part of the training directive of the 19th Composite Wing in the immediate future.

These flights will not only be valuable training for all officers but will be highly interesting from a personal standpoint. Yes, we have a new deal in Panama, and I see no sad faces.

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AN ECHO FROM THE PANAMA FLIGHT

In flying from Miami, Fla., to Albrook Field, Canal Zone, nine Bombers, commanded by Major J.K. McDuffie, completed the longest over the water mass flight in the history of the Army Air Corps. The 1100-mile "hop" was made in eight hours, and all 21 officers were in fine fettle upon landing at Albrook Field. The flight could not have chosen a more ideal time to come to Panama, as the Carnival Season was in full swing, and all visiting officers enjoyed it immensely.

The flight is another big step forward for the Army Air Corps and clearly shows the effectiveness of long range modern equipment. It demonstrates the mobility of a modern Air Corps and how distant points can be supported quickly and effectively by our Air Corps.

Panama and the large part of Central America, including the Caribbean Sea, is unfortunately afflicted with a wet season, which extends over a period from May to December. Since "Old Man Weather" is still our most hated enemy, the immediate support of the Panama Canal would be seriously jeopardized during this season, but with the most modern radio equipment bad weather may also be whipped.

"The flight was a big event for Albrook Field, and in our small way we did our best to entertain everyone," says the News Letter Correspondent. "We hope our best was good enough, for we are waiting for another visit."

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First Lieuts. Frank F. Everest, Jr. and Harry E. Wilson are under orders for duty in Hawaii upon completion of their course of instruction at the Air Corps Tactical School, Maxwell Field.

HAWAIIAN HIGH SCHOOL STUDENTS VISIT LUKE FIELD

Luke Field was recently visited by 21 cadet officers of the Roosevelt High School ROTC, of Honolulu, accompanied by their instructor, Captain Harold J. Keeley, Infantry. The group was met on arrival by representatives of the 23rd and 72nd Bombardment Squadrons and were taken immediately to the hangars, where the different types of Bombardment airplanes were explained in detail. The bombing trainer was demonstrated, and brief lectures were given on machine guns, bombs, bomb racks and radio equipment.

The visit of the high school boys was concluded with a tour of the departments and shops of the Hawaiian Air Depot. They left the post at 12:00 noon after a visit which they claimed made a new high in their military instruction.

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The 15th Observation Squadron gunnery detail returned to Scott Field from its first visit to the Valparaiso Gunnery and Bombing Base near Valparaiso, Fla., on March 16th. Nine officers and 17 enlisted men fired the two observation courses with .30 caliber machine guns mounted in the O-46A Observation airplanes, and all but one, an enlisted man, qualified as Expert Aerial Gunners. The nine officers were Majors Walter T. Meyer, Raphael Baez, Jr., 1st Lieuts. James F. Walsh, Mark E. Bradley, William J. Bell, Carlyle W. Phillips, 2nd Lieuts. James V.G. Wilson, Air Corps, and 2nd Lieuts. Jack S. Hunt and Sylvester L. Fahey, Air Reserve.

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Langley Field, Va., March 19, 1937.

We are happy to welcome three new officers into the Second Wing Headquarters - Colonel H.C. Kress Muhlenberg on February 27th, Major I.B. March on February 24th, and 1st Lieut. J.K. Lacey on March 2nd. Colonel Muhlenberg assumed the duties of Inspector of the Second Wing; Major March will be the Wing Surgeon, and Lieut. Lacey replaced Captain R.P. Williams, who was transferred to GHQ Headquarters as Meteorological Officer.

First Lieut. D.D. Hale was attached to Second Wing Headquarters from the 8th Pursuit Group Headquarters on March 2nd, as Assistant Wing Communications Officer, and has been up to his neck in work ever since. Major M.N. Stewart, Wing Communications Officer, whom Lieut. Hale so ably assists, took leave March 10th for one month. Then it seems that 1st Lieut. Hoyt L. Prindle, our Wing Adjutant, decided about the time Lieut. Hale arrived that Key West needed him to do some "big game" fishing for the short time of a month and a half, so Lieut. Hale inherited the Adjutant's desk. And to see that our aforesaid friend did not have too much time on his hands "they" decided that he would do excellently as Assistant Wing Operations Officer, inasmuch as 1st Lieut. D.B. Schannep is vacating the position on or about March 23rd to join his General at Maxwell Field, Ala. ("Shan" is General Pratt's aide in case you're not in the know). The only trouble there is that Major F.M. Brady, Wing Operations Officer, is at Hot Springs, Ark., undergoing treatment, and will remain there for some time yet. Poor Dudley Hale.

Colonel Muhlenberg left March 8th for Mitchel Field to secure detailed information on combat crew assignments of the 9th Bombardment Group.

Major Howard A. Craig, Wing Personnel Officer, left March 8th on a 4-day trip to Selfridge, Chanute and Patterson Fields to confer with the Commanding Officers of these stations relative to personnel matters of the Second Wing.

2nd Bombardment Group: Lieut. Colonel Robert Olds relieved Lieut. Colonel Charles B. Oldfield as Commanding Officer of the 2nd Bombardment Group. Lieut. Colonel Oldfield goes to Fort Lewis, Wash., to command the air unit at that station. At present he and Mrs. Oldfield are on leave.

On March 5th, the Group gave a farewell party for Col. and Mrs. Oldfield at the Officers' Club, which was attended by all of the officers of the Group and their ladies. A silver platter, engraved with the Group insignia, was presented to the departing Group Commander by the officers of the Group. The Group regrets the loss of Colonel Oldfield, but is glad to have as his successor Colonel Olds, who has served many years in this organization prior to this time.

Hq. and Hq. Squadron, 8th Pursuit Group. The organization welcomes Captain John E. Bodle, who resumed command on March 8th, back into the fold. Captain Bodle, then 1st Lieutenant, guided the first toddling foot steps of this outfit upon its organization September 1,1936. Captain Clarence D. Wheeler, the retiring commander, is still with us, but has assumed a more lofty position on the Group Staff.

The organization misses the cheerful smile of our genial Flight Commander, Lieut. D.D. Hale, who has been placed on special duty with the 2nd Wing, but wishes him success in his new duties. We hope he will soon be back with us.

35th Pursuit Squadron: Captain John E. Bodle vacated the position of Flight Commander of the Squadron and is again in command of the Headquarters Squadron, 8th Pursuit Group, GHQ Air Force. However, he is still attached to the 35th for tactical training.

Lieut. John H. Eakin was transferred to the 36th Pursuit Squadron on the day he received his commission. We sure missed those cigars, Johnnie.

The usual epidemic of maneuver rumors has aroused considerable speculation over the possibilities of interesting trips and field problems.

Flying training goes on as usual. The present acute shortage of pilots in the Squadron will be somewhat relieved in a few days, when the three newly assigned Flying Cadets arrive from the Training Center.

36th Pursuit Squadron: During the past two weeks of perfect flying weather, the 36th has succeeded in accomplishing a large amount of training in aerial gunnery and blind flying.

Under the able tutelage of Lieut. Springer, the Squadron has been working on unit descents through overcasts. In this work the P-6's have been used to an advantage as safety ships for those flying under the hood in the PB-2A's.

Due to a rearrangement in the Squadron set-up, new gunners have been assigned to all two-place ships. Most of these men had never flown or fired before, but all seemed pleased with the new assignment. Lieut. Gardner started them off with ground instructions in the machine gun and with ground firing from a scarf mount located on the Plum Tree Island range. This is to be followed by work with camera guns and then with aerial gunnery.

Early last week, Lieut. D.E. Williams, of the 36th, gave a scholarly lecture to the 8th Pursuit Group of the subject of Radio Aids to Air Navigation. The keen interest in the subject and the appreciation of Lieut. Williams' knowledge on this matter was made apparent by the many questions asked.

Since the last News Letter, Lieut. Eakin, Air Reserve, and Cadet Zemke joined our organization, and we are anticipating the arrival of two more Cadets in the near future. This addition to our flying personnel is greatly needed and welcomed.

We have also received a new contingent of enlisted men, but 1st Sergeant Laver still moans in his sleep for just one trained clerk to help him out in the orderly room.

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Hawaiian Air Depot, March 23, 1937.

The two C-33 airplanes recently received from the mainland have been assembled at the Depot and delivered, one being assigned to Wheeler Field and the other to Luke Field. Some wise was has nicknamed this model the "Goon"; not a bad appellation.

Major C.P. Kane, the Depot Supply Officer, is leaving on the St. Mihiel on March 23rd for his new assignment on the mainland as a student at the Army Industrial College, Washington, D.C. First Lieut. D.W. Titus has temporarily taken over the Supply pending the arrival from the mainland of Major W.J. Hanlon.

Congratulations are in order for Mr. Fred Wood, our Chief Civilian Inspector, on his recent promotion to the rank of Captain in the Air Reserve.

Recent arrivals reporting from the mainland for duty at the Depot include Messrs. Charlie Jackson and Walter L. Costenborder.

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

9th Bombardment Squadron:

The Squadron has been fortunate in having three experienced officers recently assigned to it, namely, 1st Lieuts. James H. Wallace, Wm. E. Karnes and Oliver S. Picher. Lieut. Wallace came from Albrook Field, where he was Operations Officer of the 24th Pursuit Squadron. He is now serving as Squadron Adjutant. Lieut. Karnes, who is now "A" Flight Commander and Communications Officer of the Squadron, recently graduated from the Communications course at Chanute Field and came from the 5th Air Base, where he served as Assistant Base Adjutant and Recruiting Officer. Lieut. Picher came to the Squadron after having completed the Engineering and Armament Courses at Chanute Field. For a while he served as Assistant Engineering Officer of the Base force and now serves as Group Armament Officer and Squadron Armament Officer.

88th Reconnaissance Squadron: To encourage taking the required exercise, this Squadron has purchased two badminton sets. On rainy days, this exercise has attracted quite a few and is rapidly acquiring more and more followers. The questions - "Who's using the racquets?" and "How about a game?" are becoming quite well known to the members of this organization. By the time good weather arrives, this Squadron will have qualified several of its members as "badminton experts."

11th Bombardment Squadron: Flying training in this organization for the last two weeks has been limited to the two or three days of clear weather and has been devoted entirely to dead reckoning navigation. Some of the officers found that their E.T.A. isn't as accurate in the air as it seemed on paper during the class periods.

Gunnery has had precedence for the past month. The efforts of the squadron to qualify as many as possible have borne fruit. With a month left for qualification, many have already qualified as expert aerial gunners.

5th Air Base Squadron: The Hamilton Field Bombardiers have just finished their basketball season, winning 16 of the 22 games played. For the nice showing, the men were given a trip to Vancouver Barracks, Wash., for an overnight stay, which was very necessary after the game with the Post team. The fliers were beaten by the score of 46-30. The fliers attracted attention with their usual fight and the fast breaking style of play. Time and time again opportunities presented themselves for scoring, but somehow the scorecard never recorded the points so necessary to win games. After the game, a buffet supper was served both teams, after which the men separated and spent the balance of the evening visiting various entertainment spots. All had a grand time, and we are looking forward to next year.

Scott Field, Belleville, Ill., March 27th.

Major Walter T. Meyer, who returned from gunnery practice with the 15th Observation Squadron at Valparaiso, Fla., on March 16th, was appointed Post Adjutant on March 19th, relieving Captain James C. Shively.

The gunnery detail to the Valparaiso, Fla., Gunnery and Bombing Base journeyed south by air and highway. Six O-46A's and one C-24 Transport flew down on March 2nd. And at the same time the motor convoy burned up the highways, making 567 miles in 14 driving hours the first day and finishing up the 872-mile trip on March 3rd.

It was on the return to Scott Field on March 16th that the C-24 Transport had engine failure a little more than an hour out of Valparaiso The seven enlisted passengers escaped by jumping with parachutes, but the pilot, 1st Lieut. Carlyle W. Phillips, was carried to his death when his parachute fouled on the tail of the airplane. It is believed that this is a record jump whereby seven men saved their lives at one time jumping from an airplane.

San Antonio Air Depot, Duncan Field, Texas:

Major John M. Clark, Depot Supply Officer of the Depot, returned March 9th from the Station Hospital, Fort Sam Houston, where he had been a patient since February 22nd for a nasal operation.

Recent cross-country visitors at the Depot included Colonel D.B. Netherwood of the Air Corps Board and Lieut. D.I. Moler, from Maxwell Field, Ala., in an A-17, March 9-10. Lieut. Moler ferrying back an overhauled A-12; Lieut. Colonel S.J. Idzorek, Supply Officer, and Major J.T. Morris, Engineering Officer, Rockwell Air Depot, Calif., March 18-19, on a transport service trip, enroute to an Engineering and Supply Officers' conference at the Materiel Division, Wright Field, Ohio; Major L.A. Dayton, March 13th, and Captain D.F. Fritch, March 16th, on a cross-country flight from the Tactical School, Maxwell Field, to Kelly Field and return, greeting old friends at this Depot where they were formerly on duty; Captain A.H. Johnson, Wright Field, March 18-19, in a B-10, for repairs to his plane, having been forced down at Waco, Texas, with engine trouble; Lieut. W.A. Aring, March 13th, bringing in a C-14 for overhaul from Maxwell Field; H.W. Logan, A.M. M/C, Pilot of the Air Patrol Detachment at El Paso, Texas, of the U.S. Coast Guard, March 15-17, for repairs to his V-117 plane, enroute to Dallas, Texas.

The monthly Supply Control Area Supply and Engineering Conference and Luncheon at this

Depot was held on March 9th. Out of town Air Corps officers attending were Majors L.S. Webster, Supply Officer, and Milo McCune, Engineering Officer, and Lieut. Livingston, all of Barksdale Field, La.

Major John M. Clark, Depot Supply Officer, and Major Elmer D. Perrin, Post Operations Officer and Commanding Officer of the 3rd Transport Squadron, were scheduled to depart March 20th by air for Wright Field, Ohio, to attend a conference in the Office of the Chief of the Materiel Division on engineering and supply problems.

During February, the Engineering Department of this Depot overhauled a total of 19 airplanes and 63 engines, and repaired 17 planes and 31 engines.

3rd Transport Squadron: Private John W. [illegible] Jackson enlisted and joined the Squadron on March 6th, having formerly been on duty with the 12th Air Base Squadron at Kelly Field. Pvt. LeRoy L. Trenton joined the Squadron March 17th by transfer from the 12th Air Base Squadron, Kelly Field. Private, 1st Class, James C. Guthrie was promoted to Corporal March 5th, and Privates W.W. Forehand, Jr., R.C. Gray and Louis Schmidt were promoted to Privates, 1st Class, March 1st.

Advanced Flying School, Kelly Field, Texas.

Major U.G. Jones, a student at the Air Corps Tactical School, Maxwell Field, Ala., arrived here on March 15th and departed on the 17th for Fort Crockett. Major Jones was formerly stationed at this School, having served as Commanding Officer of the old 39th Observation Squadron and prior to bring relieved from assignment was Post Operations Officer.

Captain Wallace E. Whitson, also a student at the Tactical School, was a visitor from March 15th to 17th, piloting an O-46A. Prior to his detail to the Tactical School, Captain Whitson was Chief of the Bombardment Section here. He also coached the Kelly Field football team for four years, taking up where Lieut. "Chick" Harding left off.

Other visitors were Captains J.S. Stowell in an O-19B, R.W. Harper in an O-19 and D.F.Fritch in a P-12E, all from Maxwell Field; 2nd Lieut. B.E. Brugge in an O-16 from Hamilton Field on route to Chanute Field; and Major G.P. Johnson, Air Corps Instructor at the Field Artillery School, Fort Sill, in an O-19.

Members of the 62nd School Squadron have voiced their regrets upon hearing that their congenial Engineering Officer, 1st Lieut. Chas. Sommers, is under orders for duty in the Panama Canal Department. The noncommissioned officers of the Squadron tendered Lieut. Somers a "Farewell" party, which was attended by the Squadron Commanding Officer (Major W.E.Richards) and 1st Lieut. R.F.C. Vance.

Technical Sergeant Ray Francisco, 62nd School Squadron, was promoted to Master Sergeant.

First Lieut. Wm. G. Bowyer, who recently completed a tour of duty in the Hawaiian Department and transferred to this station, was assigned as Engineering Officer of the 64th School Squadron.

TECHNICAL INFORMATION AND ENGINEERING NEWS
Air Corps Materiel Division

Lamp Assembly, Running, Type A-8.

An Engineering Section Memorandum Report provides information necessary for the classification of lamp assembly, running, Type A-8, as standard. This assembly is intended for aircraft equipped with one-wire electrical system. It is similar to the Type A-7 running lamp, except that the lamp socket is designed for single contact base lamps, one side being grounded.

Lamp Assembly, Running, Type B-3.

An Engineering Section Memorandum Report provides information necessary for the classification of Lamp Assembly, Running, Type B-3, as standard. This lamp assembly furnishes a long range running or position light for installation on airplanes equipped with the one-wire electrical system. It possesses a shielded fitting for flexible conduit installation. The flexible conduit installation on this lamp assembly materially decreases the cost and is more satisfactory than the solid conduit installations required for the Types B-1A and B-2 lamp assemblies.

Test of Spruance Black Lacquer No. 76-911.

An Engineering Section Memorandum Report covers test of Spruance Black Lacquer No. 76-911, procured from the Gilbert Spruance Co., Philadelphia, Pa., demonstrating that no Air Corps standard lacquer is equivalent to Spruance black lacquer No. 76-911 for use as a protective coating on the exposed metal portions of the cases of integrally shielded batteries. As the result of Materials Branch tests, Air Corps Specification No. 14091, covering acid-proof lacquer, has been released and the integrally shielded battery drawings are being revised to specify lacquer finish in accordance therewith, in lieu of asphalt varnish, Specification TT-V-51. This action was found necessary after it has been determined that asphalt varnish, Specification TT-V-51, was not entirely satisfactory for use on the integrally shielded batteries, as it does not provide a good, hard finished surface which will not chip.

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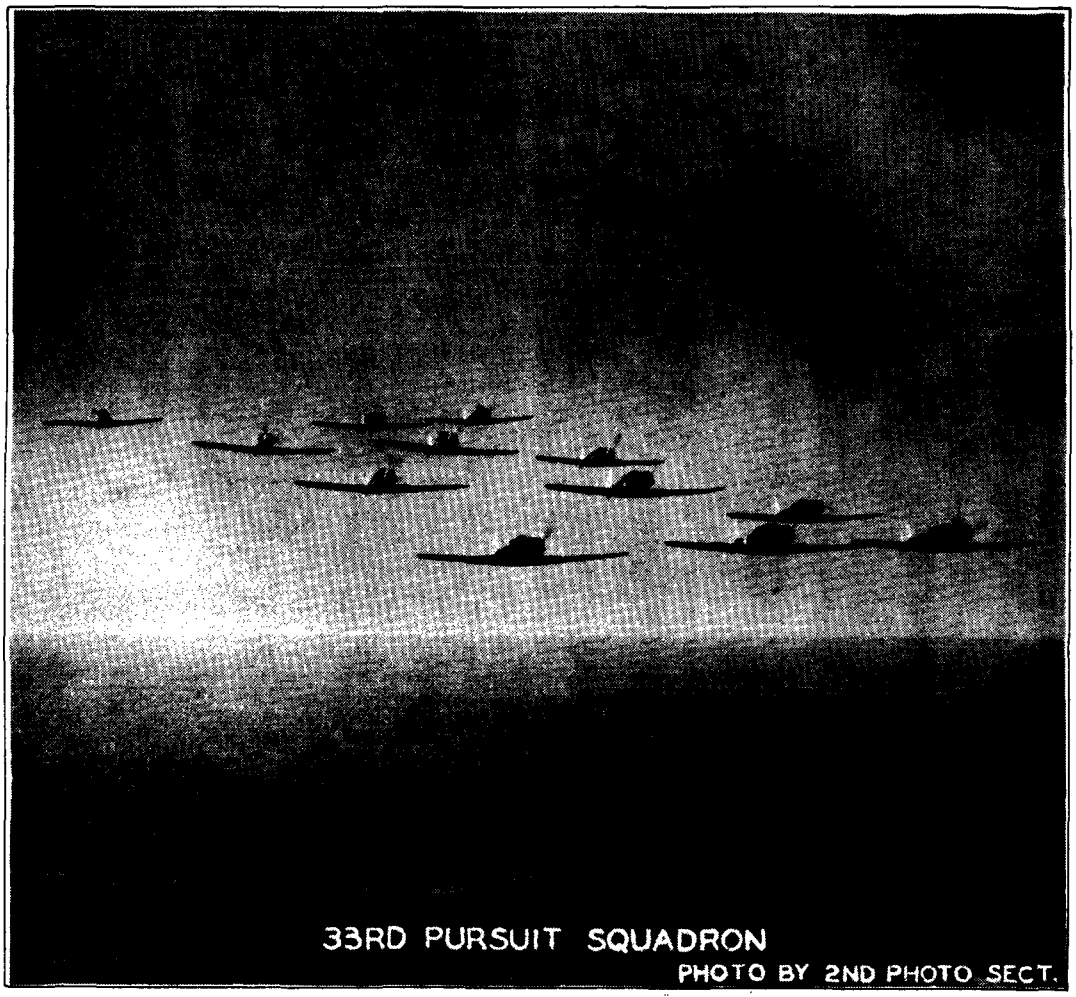
Major Claire L. Chennault (Captain) is relieved from duty at Barksdale Field, La., on April 12, 1937, and ordered to his home to await retirement.

Captain Kirtley J. Gregg, upon the completion of his present course of instruction at the Air Corps Tactical School, Maxwell Field, Ala., is to proceed to Fort Leavenworth, Kansas, for duty as student in the 1937-38 course at the Command and General Staff School.

Major Harold R. Wells (Captain) is assigned to Selfridge Field, Mich., upon the completion of his tour of duty in the Philippines.

Major Emil C. Kiel (Captain) is assigned to Mitchel Field, N.Y., upon completion of his course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas.

AIR CORPS NEWS LETTER



33RD PURSUIT SQUADRON
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VOL. XX AIR CORPS NEWS LETTER No. 8.
Information Division Air Corps April 15, 1937 Munitins Building Washington, D.C.

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

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THE RADIO METEOROGRAPH

At the present time, daily observation flights with planes are necessary to obtain weather data for the general use of the Army, Navy and Air Corps, especially so the latter. Daily "routine" flights from 15,000 to 18,000 feet are made by personnel from Kelly, Wright, Maxwell, Mitchel, Selfridge and many other fields.

According to Captain O.C. Maier, Signal Corps officer, attached to March Field, Riverside, Calif., these rather expensive and not very reliable weather flights can be done away with through the use of the RADIO METEOROGRAPH. This is a unique instrument created by the combined efforts of Mr. L.E. Wood, of the California Institute of Technology, and Captain Maier, plus the able suggestions of members of the Guggenheim Aeronautics Laboratory, California Tech.

The meteorograph is a robot weather man. A balloon is sent aloft, at altitudes between 35,000 and 45,000 feet. Attached to it is a small gondola, containing a small radio which "broadcasts" the measurements of temperature, pressure, relative humidity, as well as wind direction and velocity, at frequent intervals. The gondola of this complicated little machine carries two batteries, a miniature radio and the meteorograph. The total weight of the complete assembly is given as 425 grams. This may vary slightly, but will remain consistently less than one pound (453.6 grams). Experiments with the meteorograph have been made and recorded since October, 1936. According to Captain Maier, the robot man made 24 ascents, none of them under 35,000 feet, and all of them without failure. The instruments worked perfectly, regardless of temperature differences, and recorded up to - 70° C.

No information has been forwarded regarding the actual working of the intricate mechanism of the Meteorograph, but the March Field Correspondent points out that large benefits could be derived from its use by the Air Corps since, after all, the Air Corps demands more weather data than any other branch of the service. He states that at present March Field obtains its daily observations through San Diego, and since planes are dependent on ceilings there is no one hundred percent assurance of regular and uninterrupted meteorological service. Furthermore, this miniature weather recorder could be sent aloft twice or three times daily for recording without much additional expense or trouble.

Inviting attention to the fact that Captain Maier and Mr. Wood had the meteorograph aloft for as long as three hours at one time, the March Field Correspondent adds that successful observations can be done within the hour mark or less and that the idea "seems well worth trying."

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CONTRACT AWARDED FOR ADDITIONAL BASIC TRAINING PLANES

The Hon. Harry H. Woodring, Secretary of War, announced recently that the contract heretofore made with the North American Aviation, Inc., of Inglewood, Calif., for basic training airplanes has been increased by a total of 73 airplanes and a complement of spare parts, at a total additional cost over the original contract of $903,380.99.

Forty of the above 73 airplanes are being changed from the original design in order to take a more powerful engine - the Pratt & Whitney R-1340 "Wasp." The remaining 33 will have incorporated therein certain necessary changes to provide for the training of pilots of the Air Corps Organized Reserve. These planes are being provided especially for the training of the Air Corps Organized Reserve, due to its importance in National Defense.

The changes from the design prescribed in the original contract are being made in order to fit these planes for use at points other than the Air Corps Training Center, for which the airplanes in the original contract are being procured.

By taking advantage of a contract already under way and making changes in the plane being produced, it has been possible to procure these airplanes at a material reduction in the total cost over that which would have been necessary had a special plane been developed for these purposes. The reduction in the number of types of aircraft has also materially simplified the problem of the aircraft manufacturing industry. Also, by taking ed-

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vantage of a contract already in production, the War Department is able to secure delivery of the completed airplanes months before such delivery would be possible under a new contract.

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ADDITIONAL FLIGHT SURGEONS FOR THE ARMY

Five officers of the Medical Corps, U.S. Army, and one Medical Corps Reserve officer, who pursued a course of instruction in Aviation Medicine at the School of Aviation Medicine, Randolph Field, Texas, graduated on March 31, 1937, as Flight Surgeons, viz: Captains Henry C. Chenault, Barksdale Field, La.; Edgar L. Olson, Chanute Field, Ill.; 1st Lieuts. William F. Patient, Moffett Field, Calif.; Edward B. Payne, Selfridge Field, Mich.; Wayne R. Weaver, Randolph Field, Texas; and William B. Lovelace, of the Mayo Clinic, Rochester, Minn.

Diplomas were presented to the students by Brigadier General James E. Chaney, Air Corps, commanding the Air Corps Training Center, who was accompanied by Colonel Arnold N. Krogstad, Commandant of the Advanced Flying School, Kelly Field, Texas. Major G.J. McMurray, the Chaplain of Randolph Field, delivered the invocation and benediction. Colonel A.D. Tuttle, Medical Corps, the Commandant of the School, presided.

Two basic courses, each of four months' duration, are conducted annually, starting July 15th and December 1st of each calendar year. In addition to the resident course, as a year-round activity, the School conducts an extension (correspondence) course in Aviation Medicine, in which there are now 430 nation-wide enrollees. The permanent force on duty at the School now comprises the following-named officers, also nine enlisted men and seven civilian employees:

Colonel Arnold D. Tuttle, M.C., Commandant.

Lieut. Colonel Coleridge L. Beaven, M.C., Assistant Commandant and Director of Extension Courses.

Major Neely C. Washburn, M.C., Director, Department of Psychology.

Major Charles F. Snell, M.C., Director, Department of Aviation Medicine.

Captain John M. Hargreaves, M.C., Director, Department of Opthalmology.

Captain Walter S. Jensen, M.C., Director, Department of Neuropsychiatry.

Captain Charles L. Leedham, M.C., Assistant Director, Department of Aviation Medicine.

Captain Benj. R. Luscomb, M.A.C., Executive Officer and Secretary.

All of the graduates started the course on December 1st, with the exception of Lieut. Lovelace, of the Medical Reserve, who joined the class on February 15, 1937, completing the six weeks' practical course (after having completed the correspondence course of this School).

The next class is scheduled to begin on July 15th and is expected to have five Naval medical officers in addition to the regular class.

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ASSIGNMENTS FOR C.& G.S. SCHOOL GRADUATES

The following-named Air Corps officers are assigned to the stations indicated upon completion of their present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas:

To the Philippines: Lieut. Colonel William H. Crom.

To Mitchel Field, N.Y.: Major Emil C. Kiel (Captain).

To Hawaiian Department: Major Oliver P. Gothlin (Captain); Major Bernard J. Tooher (Captain); Captains Robert W. Douglass, Jr., and Homer W. Ferguson.

To Office Chief of the Air Corps, Washington, D.C.: Captain James T. Cumberpatch.

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PROMOTION OF NONCOMMISSIONED OFFICERS

The following-named Air Corps noncommissioned officers were promoted on the dates indicated:

To Master Sergeant, Air Corps:
First Sergeant James S. Grisham, Langley Field, Va., April 1, 1937.
Technical Sergeant Wythe J. Napier, Randolph Field, April 5, 1937.

To Technical Sergeant, Air Corps:
Staff Sergeant John Pryor, March Field, Calif., March 13, 1937.
Staff Sergeant James A. Maginness, Maxwell Field, Ala., April 1, 1937.
Staff Sergeant Ernest Levesque, Hawaiian Department, April 5, 1937.

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ASSIGNMENTS FOR WAR COLLEGE GRADUATES

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers will proceed to the stations indicated upon the completion of their present course of instruction at the Army War College, Washington, D.C.:

To Mitchel Field, N.Y.:
Lieut. Colonel Carl W. Connell (Major)

To Hawaiian Department:
Major Romeyn B. Hough, Jr.

To Berlin, Germany:
Major Arthur W. Vanaman, for duty as Assistant Military Attache and Assistant Military Attache for Air, American Embassy.

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During the months of January and February, 1937, a total of 163 transient airplanes stopped at the Rockwell Air Depot, Coronado, Calif.

ARMY AIR FORCE COMBAT UNITS TO CONCENTRATE IN CALIFORNIA

UNITS of the General Headquarters Air Force will concentrate in California during the period from May 1 to May 31 for the purpose of testing the strength and organization of the flying combat units of the Army. A total of 430 officers, 2,500 enlisted men and 244 Army airplanes will take part in the maneuver. The participating units will be based on March Field at Riverside, Calif., and Hamilton Field at San Rafael, in the same State. Various municipal and commercial flying fields will also be utilized.

The daily missions, as scheduled for the units located on the operating airdromes will be of a type which would be encountered in actual warfare. The average flying time required for each mission will be from three hours for the smaller Pursuit airplane to six hours for the larger Bombardment airplane. These missions will test the efficiency of units involved and will demonstrate the employment of the newer type of Army aircraft. An opportunity will also be given to the civilian population in the vicinity of the operating airdromes to inspect the aircraft now being used by the Army Air Corps.

The units taking part in this concentration and exercise will be under the command of Major General F.M. Andrews, who will be assisted by Colonel H.J. Knerr, Air Corps, as Chief of Staff. General Andrews and members of his staff will fly to the west coast from Langley Field, Va., to take charge of the actual operation of participating units. The Commanding Generals of the two wings participating, which are component parts of the GHQ Air Force, will be Brigadier General D.C. Emmons, 1st Wing, and Brigadier General G.C. Brant, 2nd Wing. The assignment of organizations of the GHQ Air Force to operating airdromes, as announced by the War Department, is as follows:

Headquarters GHQ Air Force, 14 officers - 30 enlisted men from Langley Field, Va., to March Field, Calif.

Headquarters 2nd Wing, 7 officers - 30 enlisted men from Langley Field to Hamilton Field, Calif.

Headquarters 1st Wing, 10 officers - 63 enlisted men, permanent station March Field.

Hq. & Hq. Squadron, 7th Bombardment Group, 43 officers - 244 enlisted men, 18 Bombardment airplanes from Hamilton Field, Calif., to Fresno, Calif.

One Bombardment Squadron, 30 officers-163 enlisted men, 13 Bombardment airplanes, from March Field to Stockton, Calif.

Two Bombardment Squadrons, 30 officers-162 enlisted men, 13 Bombardment airplanes from Hamilton Field to Merced, Calif.

3rd Attack Group, Hq. & Hq. Squadron and one Squadron with the 3rd Attack Group, 42 officers - 255 enlisted men, 33 Attack airplanes from Barksdale Field, La. to Bakersfield, Calif.

One Attack Squadron, 30 officers - 177 enlisted men, 28 Attack airplanes from Barksdale Field to Delano, Calif.

One Attack Squadron, 30 officers - 177 enlisted men, 28 A-17 airplanes from March Field to Visalia, Calif.

Hq. & Hq. Squadron, 1st Pursuit Group, and 3 Pursuit Squadrons, 102 officers, 505 enlisted men and 89 Pursuit airplanes from Selfridge Field, Mich., and Barksdale Field to Muroc Lake, Calif.

All personnel of the 1st Pursuit Group stationed at Selfridge Field will be transported by airplane to the operating airdrome at Muroc Lake. Thirteen of the larger Army Transport airplanes will be used for the ferrying of these enlisted men. These transport airplanes will make stops at the following commercial or municipal airports, en route: Muskogee, Okla.; Amarillo, Texas; Winslow Arizona; Albuquerque, New Mexico.

The week of May 24th to 31st will be devoted to the return of personnel and equipment to the organizations' permanent base. Organizations, upon their return to their home station, will submit reports on the operation of the units taking part in this concentration. These reports will be studied in connection with future exercises of this character.

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NEW STATIONS FOR C.& G.S. SCHOOL GRADUATES

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers are assigned to duty at the stations indicated upon their graduation from the Command and General Staff School, Fort Leavenworth, Kansas:

To Langley Field, Va.: Lieut. Colonels William E. Kepner (Major) and Harold M. McClelland (Major), Major Harold Lee George (Captain), Major Westside T. Larson (Captain), Major Alfred E. Waller (Captain), Captains Charles H. Caldwell, Benjamin W. Chidlaw, William D. Old and Robert B. Williams.

To March Field, Calif.: Major John K. Cannon (Captain), Major Harry A. Halverson (Captain), Captains Carlisle I. Ferris and Ernest S. Moon.

To Bolling Field, D.C.: Captain Alden K. Crawford.

To Brooks Field, Texas: Captain Don W. Mayhue.

(Continued on Page 4).

RESERVE ACTIVITIES ON THE WEST COAST
By the News Letter Correspondent

The month of March at the Headquarters of the Air Corps Detachment at the Municipal Airport, Oakland, Calif., was the high point in our brief career. To begin with, the control depot moved in and annexed three PT-3A airplanes for overhaul and when the cat was let out of the bag our PT's were "never no more to roam" for us.

Next came the grand rush of Air Reserve pilots who are getting "hotter" because the Unit Instructor, Captain Henry, has checked out over twenty-five in the BT-9A's and more ready for check who had received transition in the BT-2B1 and ready to go.

On March 16th, the Commanding General of the 9th Corps Area made his annual inspection. That, with the additional activity in connection with the rush of pilots, had the detachment getting a feverish look in the direction of a furlough blank. Between looking for the inspection group; grabbing the PT's by the wings; the BT-9's by the tails; the BT-2B by the nose and muscling the O-46A around, a cross-country was booked for the 20th. On that day, 5 PT-3's, 2 BT-9's, 1 BT-2B and the O-46 headed for Long Beach with a complement of seventeen Reserve pilots tucked away in them. The O-46 was riding "flight" and all planes landed at their destination on schedule time.

On Sunday, the 21st, all planes started on the return trip. All landed at Bakersfield with the same precision. Alas, they left Bakersfield again with precision - but, from there, the rascal, a heavy driving rain and low ceiling, swooped down on the flight. One lone PT-3 and, of course, the O-46 and one BT-9 scampered home. Then came the fireworks, and Modesto, Tracy, Vallejo and Livermore telephone girls started to get warmed up. When the curtain was finally dropped, four planes were put to bed in Modesto and two in Livermore. The pilots, all having business to get back to early Monday morning, did their chores and started their trek home by bus, on the thumb and by other means of transportation to check in. Nary a forced landing or a scraped wing.

On the 22nd, the round-up began, a number of Reserve pilots sacrificed their daily wage, reported in for ferry duty, and at 2:00 p.m., all planes were safely parked close to their stalls with the mechanics giving them the twice over.

Still more activity - all planes and the station had a date with the Technical Supervisor on the 23rd. By the grace of the unusual weather, he was a day late, and when he arrived even the planes looked as though they could smoke that famous cigarette and look nonchalant.

About this time the pilots were hotter than ever and the rush was still on. Then came the dawn - we ran out of our allotted flying time, including 75 additional hours, and the end of March saw us with good weather, good and many pilots and good and plenty gloom. Letters, phone calls and radios were then in order.

So ended March. April 1st kept true to tradition; it really did fool us. We thought we had all records for flying safely stowed away for Reserve activities.

Now we are still grooming, and waiting, for RESERVE FLYING TIME.

(Note: Over 2600 hours were flown during the nine months of this fiscal year).

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New Stations for C. & G.S. School Graduates
(Continued from Page 3).

To Wright Field, Dayton, Ohio: Captain Lyman P. Whitten.

To Mitchel Field, N.Y.: Captain Elwood R. Quesada.

To Maxwell Field, Ala.: Lieut. Colonel Edgar P. Sorenson (Major) for duty as a member of the Air Corps Board.

To Fort Riley, Kansas: 1st Lieut. Ford L. Fair.

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RETIREMENT OF TWO KELLY FIELD NONCOMS.

Master Sergeant Aaron J. Sanders, of the 12th Air Base Squadron, Kelly Field, Texas, was retired on March 31st, after 30 years' service. He first entered the service on December 2, 1908, and was assigned to Company "E," 15th Infantry, at Fort Douglas, Utah. He has served in the Hospital Corps, Cavalry, Ordnance Department, and the Air Corps. All of his eight honorable discharges bear the notation - "Character: Excellent." During the World War he was a Sergeant of Cavalry.

Sergeant Sanders will retire to his home at San Antonio, Texas.

Technical Sergeant James H. Eaton, Base Hqrs. and 3rd Air Base Squadron, was retired on March 31st with the rank of 2nd Lieutenant, and will establish his home near San Antonio.

Sergeant Eaton entered the service on January 13, 1909, and has served with the Signal Corps, Cavalry, Field Artillery and the Air Corps since that date. He has ten honorable discharges which bear the notation "Character: Excellent."

Sergeant Eaton served as a commissioned officer in the Field Artillery from August 17, 1918, to April 9, 1919.

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Major John I. Moore, Air Corps, is assigned to duty in Hawaii upon the completion of his present course of instruction at the Army Industrial College, Washington.

BARKSDALE FIELD AND THE LITTLE THEATRE

In the February issue of Readers Digest appears an interesting article on The Little Theatre - the outstanding artistic movement in the United States. Barksdale Field may feel justly proud of its contribution to this important and worthy cultural undertaking, for it has supplied the star performers for practically all productions of The Shreveport Little Theatre during the present season.

The work of Lieut. Noel Parrish as "Dizzy Dean" in Ceiling Zero and "Mio" in Maxwell Anderson's "Winterset" practically assures him of winning the choice as the best actor of the season for The Shreveport Group.

Lieut. "Grassy" Hinton's portrayal of the tough cop in the mob scene in "Winterset" won him an immediate offer of a job on Chief Norwell's Shreveport Police Force.

Lieut. and Mrs. Paul Bunker have done noteworthy work in several plays. Mrs. Bunker's performance as the star in "Personal Appearance" gives her first call as the best actress for the season. Lieut. and Mrs. Livingstone are now in rehearsal for the play next month.

Only those who have actually participated can know the terrific amount of work, energy and time required in rehearsals for these productions, and it is a distinct credit to themselves and the Air Corps that they are willing to make this sacrifice for the cultural development of the community.

Incidentally, the Shreveport Little Theatre stands third among two thousand in the quality of their performance, which gives some idea of the quality of the acting of those mentioned above.

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ACTIVITIES OF 49th BOMBARDMENT SQUADRON

During the past fortnight, the 49th Bombardment Squadron, GHQ Air Force, Langley Field, Va., has participated in two very interesting Group combat exercises featuring ground gunnery from all stations with special emphasis on: Training of gunners to concentrate their fire on small ground targets; bombing at very low altitudes to develop the ability of the bomber to obtain accuracy without the use of the sight; bombing at intermediate and high altitudes; and descent of the Group by flights through an assumed overcast.

Reorganization and training of combat crews has played an important part in Squadron operations. This work, which is in accordance with recently adopted policies of GHQ, has been accelerated to increase the combat efficiency of the organization during the forthcoming maneuvers at Rocky Mount, N.C.

PELICAN ATTACKS ATTACK PLANE

Mr. and Mrs. Pelican flying on high,
Spied a gold-blue streak in the silver sky.
That'll never do! said Mr. Pelican
to his shrew,
So with squawk and squeak away he
flew -
To meet what? He never knew.
With an awful crash they met in
midair -
Feathers and glass flew everywhere.
But Mrs. Pelican only had seen
Her hubby crack up in an A-17.

Perhaps it is not news when some sky birds of the Air Corps practice sharp shooting at pelicans whenever that opportunity arises, but it is certainly NEWS when the case is reversed and the pelican attacks the plane plus pilot. Such was the happening to Lieut. Nelson T. Brown, only recently commissioned from the status of Flying Cadet, and Private, 1st Class, Frank Barnett, his gunner, when they were practicing gunnery off Oceanside, Calif., at noon on March 23rd.

According to Lieut. Brown, the huge bird flew straight through the tri-bladed propeller of the A-17 Northrop Attack plane he was flying, and smashed through the protective windshield, showering the Lieutenant with glass and cutting him severely in face and on his head. The impact also smashed the goggles, and he was surely lucky not to get any splinters into his eyes. As Lieut. Brown put it: "By gad - and I've been extracting broken glass ever since from within my shirt, trousers, blouse and what not."

The attacking bird (or attacked bird), after doing his share of damage, continued towards the tail assembly of the ship and bent the elevators before finally fading out into the distance - lifeless.

Lieut. Brown was temporarily knocked unconscious as a result of the impact. Luckily, Private Brown managed to keep the airplane in the air until his pilot regained his senses. The plane was flown back to March Field.

After the A-17 landed, Lieut. Brown was given medical attention and, although still a bit shaky, seemed to be doing fine 24 hours after the accident.

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Major Muir S. Fairchild and Captain Charles E. Thomas are under orders for duty on the staff and faculty of the Air Corps Tactical School, Maxwell Field, upon graduating from the War College.

SAFETY IN PRIMARY FLYING TRAINING
By the Randolph Field Correspondent

A newspaper article emanating from the Office of the Secretary of War, commending the Air Corps for the improvement in the accident rate during the year 1936, was given considerable publicity. It might be interesting to the Air Corps and, perhaps, improve the enrollment of students to give comparative figures of the accident rates of the service at large and of the Primary Stage of the Air Corps Primary Flying School, Randolph Field, Texas. Heretofore, the instruction period has been considered dangerous, and in many cases well qualified applicants have been deterred from enrollment in the School because their parents or friends have dissuaded them due to the fear of accidents while learning to fly.

As a comparison, the Primary Stage, from October 1, 1931, to March, 1937, inclusive, has given 117,319 hours of flying instruction. During that time there has been one accident, a collision in the air of two planes, causing the death of three. Other than that, no accidents causing even serious injury during student instruction have occurred. This shows an hourly average of 39,106 hours per fatality on the Primary Stage flying, against 12,000 hours per fatality in the service at large or, reducing it to a decimal, one fatality at the rate of .025 per 1,000 hours, or further, there are 3¼ times as many accidents in the service at large as have occurred during primary instruction in 5½ years. It should be further noted that this accident rate on the Primary Stage covers a 5½ year average, while the figure of the accident rate in the Air Corps in general is for the best year, namely, 1936.

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A CEREMONY FOR HEROISM

Recently, on what was probably one of the greatest days in the life of Captain John S. Griffith, Air Corps, he was awarded the highest military recognition to active members of the United States Army Air Corps - the Distinguished Flying Cross.

Heroism is an often misused word, but no other term would fit to the gallant deed performed by Captain Griffith and Captain Frank J. Irvin when on a gray, rainy day their experimental Douglas airplane met sudden disaster in the air. The new ship was making a carbon monoxide test flight from Wright Field, Dayton, Ohio, to Indianapolis, Ind. Captains Griffith and Irvin were accompanied by five civilian observers on the trip.

At an altitude of 2,000 feet, the large bi-motored plane suddenly caught fire, and the pilots calmly told the civilians to "jump for it," which they did. Captains Griffith and Irvin then began to combat the spreading flames within the airplane and, cutting spark and gas valves, brought the plane down without any serious damage. Thus they not only saved human lives but government property as well. This incident occurred on July 22, 1936.

It was some six months later that Brigadier General Delos C. Emmons, commander of the First Wing, GHQ Air Force, decorated Captain Griffith for his part in the outstanding event, and since at that time Captain Griffith was stationed with the 30th Bombardment Squadron, the entire personnel of March Field turned out to give honor to a brave officer.

Although Major General Frank M. Andrews, commanding the GHQ Air Force, had originally been assigned to perform the decoration ceremony, General Emmons took over this part, since General Andrews was unavoidably delayed.

Approximately 1,000 civilians from Riverside, Calif., and nearby towns made it a point to visit March Field on that day.

At the present time Captain Griffith is on duty as military representative at the plant of the Northrop Aviation Corporation at Inglewood, Calif.

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KELLY FIELD RUNWAYS NEARING COMPLETION

Construction work on an all-weather runway at Kelly Field, San Antonio, Texas, will be completed by July 1st, according to an announcement by Captain E. V. Dunston, Constructing Quartermaster for San Antonio and vicinity. The miniature range, which is the first permanent building at Kelly Field, will be completed within the next two or three weeks. These two projects total an expenditure of $515,000.

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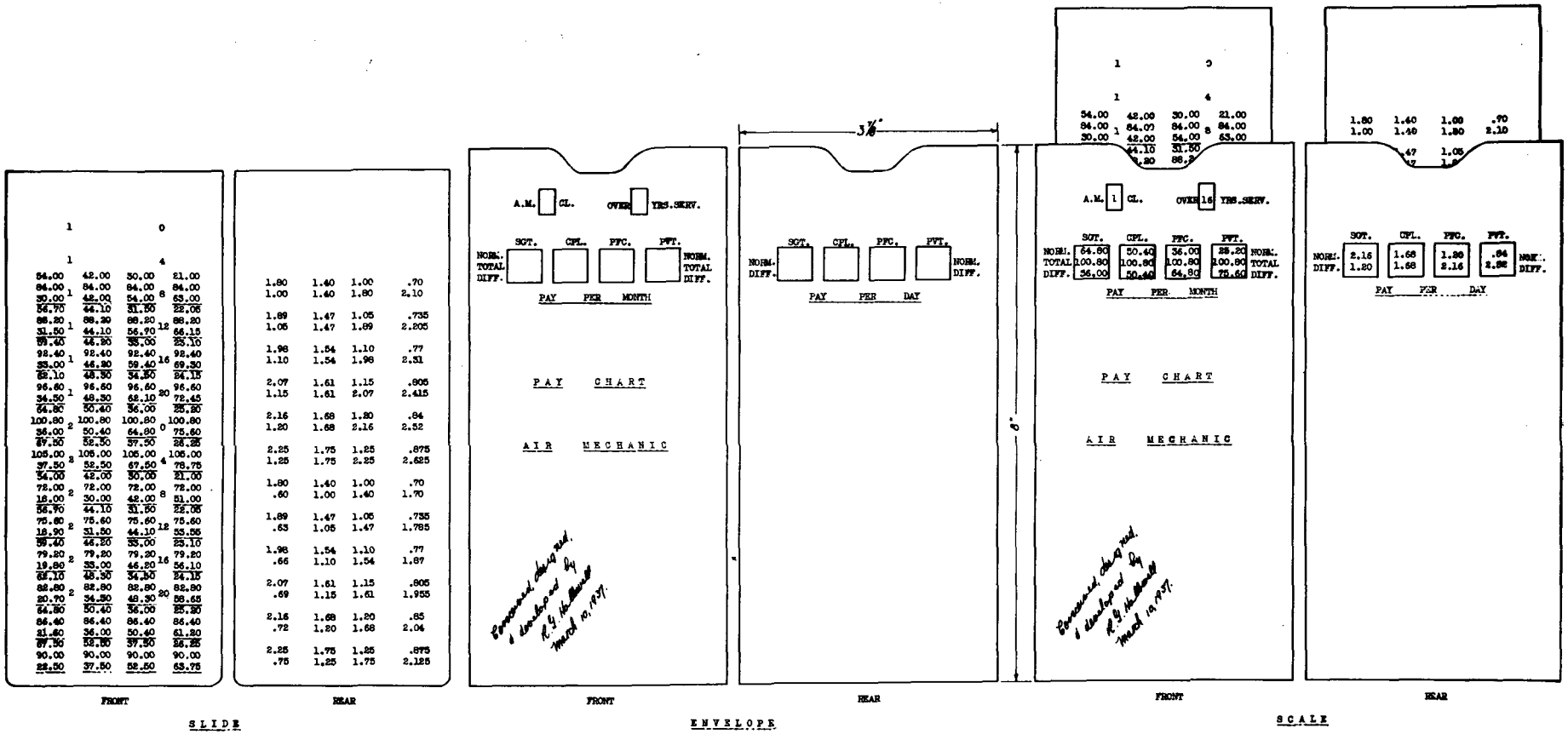
LECTURES ON "FLYING INSTRUCTION"

The officers of Kelly Field were very fortunate in hearing a series of three lectures by Major William C. Morris, Air Corps, who devised a new system of flying training. These lectures were very interesting and, whether or not Major Morris' system is adopted in its entirety, it is probable that all flying instructors will adopt portions of this system and apply it to their own teaching technique.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SGT. CPL. PFC. PVT.
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Examined, checked and developed and R. G. McDonald March 10, 1937.
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PAY PER DAY
REAR
SCALE
AIR MECHANIC PAY SCALE

AIR MECHANIC PAY SCALE

On the opposite page are photographic reproductions of an Air Mechanic pay scale, designed and developed by Staff Sergeant Rodney G. Hallowell, Base Headquarters and 1st Air Base Squadron, GHQ Air Force, Langley Field, Va., and which has been used by the Personnel Section of the Base for the past three months in checking reports submitted by the Groups and separate organizations and has been found to decrease the usual time required for checking to one-third.

The scale consists of an envelope and a tabulated chart which is free to slide within the envelope. The envelope is made of two sections of thin cardboard separated by a narrow spacer and glued at sides and bottom, with appropriate cut-outs on front and rear. The slide is made of a section of thin cardboard with tabulated figures printed on both front and rear.

The operation of the scale is practically self-explanatory. By adjusting the slide to show first the Air Mechanic class (1st or 2nd) in conjunction with the number of years' service, figures under appropriate grade show the "Normal" pay (base plus longevity), the "Difference" (pure Air Mechanic pay), and the "Total" pay for a full thirty (30) day month. The tabulations on the face of the chart have been purposely arranged in sequence - Normal, Total, Difference - to facilitate checking the Report of Air Mechanics' Pay, W.D. Form #124, rendered each month to the Chief of the Air Corps. The reverse side of scale shows the "Normal" pay (base plus longevity) per day, and the "Difference" (pure Air Mechanic Pay) per day. These figures, multiplied separately by the number of days for which pay is to be computed, and then added to arrive at the total, furnishes a means of quickly figuring pay when only part of a month is to be considered due to dis-rating, re-rating, promotion or reduction in grade, change in pay period, discharge, etc.

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ACTIVITIES OF 96TH BOMBARDMENT SQUADRON

At present the 96th Bombardment Squadron, Langley Field, Va., has one Y1B-17 Bomber, and expects the remaining three to be delivered from Seattle within the next few months. With one flight of B-17's and one flight of B-10B's, the Squadron looks forward to carrying out a diversified and highly interesting training program. Routine training within the Squadron during the past few weeks has consisted chiefly of training of the individual combat crew members in order to qualify each man for his particular assignment. Upon termination of this phase when the combat crews are individually trained, our work will progress to the training of the combat crew as a group to bring about that degree of teamwork between combat crew members which is so absolutely essential to successful operation.

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CONSIDERABLE FLYING BY 20TH SQUADRON

More flying training has been accomplished in the 20th Bombardment Squadron over the last fortnight than in any two weeks so far this year. Special emphasis has been placed on fitting each member of the combat crews to fill his particular job. Lieut. Bockman's radio department has furnished the Squadron with five new radio operators, and they fill a long felt need. All pilots either qualified or were tested in Instrument Flying, under the provisions of Air Corps Circulars No. 50-1 and 50-1B. As a unit of the Second Bombardment Group, Langley Field, Va., the 20th Squadron participated in several combination navigation, formation and bombing missions, two of which were over-water flights.

Six different flight problems of a unit combat nature, involving navigation, formation and actual or simulated bombing were devised and the missions executed. Tests were made of the new .50 caliber machine guns.

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ROCKWELL AIR DEPOT HAS MANY VISITORS

During the month of March, 88 transient airplanes stopped at the Rockwell Air Depot, Coronado, Calif. Among the visitors were Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, and Colonel S.W. FitzGerald, who arrived in A-17's on March 8th and left on the 10th. General Arnold and Colonel FitzGerald conferred with the Commanding Officer of the Rockwell Air Depot regarding Engineering and Supply matters, particularly with reference to the new types of airplanes now being purchased by the Air Corps.

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AIR RESERVE PILOT HANDY WITH THE BRUSH

The return of Lieut. Ashby Toulmin to active duty brings back to Barksdale Field, La., the best artist with brush and easel in the Air Corps. He has recently been studying under Boardman Robinson at the Colorado Springs Fine Arts Center, and under Thomas Hart Benton at the Kansas City Art Institute.

Lieut. Toulmin's painting of the 3rd Wing Insignia will soon be hung in the Officers' Club. All who have seen it acclaim it. His room is a gallery of beautiful landscapes and portraits by his own hand.

A POPULAR PORT OF CALL

BARKSDALE Field, Shreveport, La., has become the aerial cross roads of the South, not only for Army aviators, but those of the Navy and Marine Corps as well. This field affords all the necessary facilities to make it a desirable port of call for all military aerial traffic passing anywhere in the vicinity.

Captain Leon Johnson, Base Operations Officer, has his visiting ship crew geared to handle efficiently any number of airplanes, from a "lone eagle" to an entire Wing or more. Refueling, housing, inspection, maintenance work, spare parts, etc., are only a part of his stock in trade, for he also manages to hand out more than his share of fair weather and tail winds to all who come this way.

The Post Exchange, or the Officers' Mess, are always prepared to feed any hungry wayfarer, and those two genial hosts, Lieuts. Hinton and Sangster, operate a very home-like visiting officers' quarters.

If the visitor is looking for city life, Shreveport is only four miles away, with ample transportation facilities.

Because of its strategic location on a direct East-West southern transcontinental route between California and the South East Atlantic coast, Barksdale Field affords a desirable refueling stop for all year 'round transcontinental traffic. Because of its location, midway between the East and West Coasts, it makes a convenient overnight stopping place for those who wish to split the transcontinental journey into two days. For large planes, like the Douglas or Boeing four-motored Bombers, which make the transcontinental hop with only one stop, Barksdale Field, with its large, solid landing field, refueling facilities and weather service, midway between the East and West coasts, proves a logical place to stop.

Only recently, Major Barney Giles and Major Caleb V. Haynes, Air Corps, stopped here with the first two four-motored Boeing Bombers enroute from Seattle, Wash., to their station at Langley Field. A short time ago, Major Charles Chauncey made his one stop here in a Douglas Bomber, enroute from Langley Field to March Field, Calif. On March 9th, one half of the entire Marine Air Corps, consisting of some fifty-three airplanes, stopped here enroute from the West Coast to their base at Quantico, Va. They had previously stopped here on their way to the Naval maneuvers in January. On both occasions they were taken care of in record time, without a hitch, by Captain Johnson's visiting ship crew.

There is also a constant stream of Naval planes from San Diego, Pensacola, Norfolk and Anacostia passing through Barksdale Field, and there hardly passes a day without some traffic to that great Army aviation center, San Antonio, not to mention National Guard and Reserve planes from Houston, Dallas and Little Rock. In fact, Barksdale Field can lay a reasonable claim to the record for handling more military visiting ship traffic than any other airport in the world.

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SPEEDY PHOTOGRAPHIC WORK

An example of the speed with which an Air Corps Photo Section can attack and complete an extensive project was given on March 21st, 22nd and 23rd.

Duncan Field received a radio from the Chief of the Air Corps at noon Sunday, March 21st, requesting a series of photographs showing the exterior and interior of a modern Air Repair Depot, these photos to be sent by air mail. The order was transmitted to the Commanding Officer of the 22nd Photo Section, Kelly Field, Sunday afternoon.

The files of the Photo Section were searched that afternoon, and 39 views found that were suitable for reproduction. Six prints were made of each view by 10:00 o'clock that night. At eight o'clock Monday morning, work was begun photographing various phases of the Depot. Thirty-six new exposures were made. These were developed Monday night and printed Tuesday morning. By two o'clock Tuesday, less than 48 hours after the project was begun, 450 prints were delivered to the Commanding Officer of Duncan Field for transmittal to the Chief of the Air Corps.

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NAVIGATION TRAINING IN 21ST SQUADRON

Within the past few weeks, many new enlisted men were assigned to the 21st Reconnaissance Squadron at Langley Field, Va. These men are, with a few exceptions, inexperienced in any phase of squadron work. The Squadron has, therefore, been busily engaged during the past few weeks with the training of these new men with the view of assigning each man to that particular work for which he is best adapted.

At present the following officers are undergoing training in the Navigation School conducted by this Squadron: Lieuts. E.P. Mussett, R.E. Koon, C.H. Rees and Wm. A. Matheny.

Captain A.Y. Smith, Officer in Charge of this Navigation School, recently received an able assistant in Lieut. J.W. Egan, who came from Luke Field, T.H. Lieut. Egan is attached to the 49th Bombardment Squadron for tactical training. With both of the OA-4A's undergo-

(Continued on Page 9).

2ND BOMBARDMENT GROUP A BUSY OUTFIT

The Second Bombardment Group, Langley Field, Va., has of late been engaged in a high-gear series of activities of maximum interest to its personnel and of considerable importance to the entire Air Corps. The first Y1B-17 arrived on March 1st, followed rather closely by the second article on March 12th. Majors Giles and Haynes brought the two big Bombers through from Seattle without incident. To date the necessary flight-checking of subsequent combat crews has been given first priority and, as an indication of the schedule being followed, the flight logs of the two airplanes reveal that, up to April 3rd, there were flown in the two preceding weeks 141 hours and 50 minutes, to include 8½ hours at night; .30 and .50 caliber gunnery from all stations; bombing from 5,000 to 8,000 feet; aerial photography to spot bomb hits; performance flights on one, two, three and four engines; landings at March, Barksdale, Maxwell, Pope, Langley, New Bolling, Old Bolling, Phillips and Mitchel Fields, and familiarization flights and landings to complete the piloting qualifications for Lieut. Colonel Robert Olds, Captains E.R. McReynolds and C.W. Cousland, and 1st Lieut. W.W. Higgins.

Majors Giles and Haynes were previously checked off by Major Corkille at March Field, and Major Meloy has been released by Major Giles on the third Bomber for the Group, which is now at March Field enroute to Langley Field.

Enthusiasm within the 2nd Bombardment Group for the new four-engined Bomber is uniformly high. Pilots cannot find enough praise for its handling qualities and performance. Tremendous progress in the tactical capabilities of this Group appear definitely assured. Although the Y1B-17 Form #1 resembles a hotel register when all members of the crew and extra passengers are listed, and the pilot, co-pilot, chief mechanic check list recalls coonskin coats at an autumn football game through or around which we try to see the home team come out of its huddle, we have a real combat airplane on which precision team work before, during and after flights constitute the criteria of successful operations.

In addition to the special Y1B-17 ferrying project, the Group is attempting to maintain a temporary combat strength of one B-10B flight per squadron. This will be continued until at least two Y1B-17's are assigned each squadron, at which time the combat strength of the Group will be shifted completely from the B-10B's to the Y1B-17's.

During the latter part of March, two missions were scheduled and completed successfully in connection with routine off-shore joint training. Interceptions up to a hundred miles east of Langley Field were made with absolute accuracy by both the reconnaissance teams from the 21st Reconnaissance Squadron and by the 96th Bombardment Squadron. The 96th Squadron was reinforced in these missions by flights from the 49th and 20th Bombardment Squadrons.

Projected operations included a national broadcast from a Y1B-17 over Washington, D.C., on April 4th; an aerial review, led by another Y1B-17, in the New York area on April 6th, and preparation for two weeks of Second Wing Exercises, during which period the Group, less the Y1B-17 echelon, will operate from an auxiliary airdrome at Rocky Mount, N.C.

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Navigation Training in 21st Squadron

(Continued from Page 8).

ing overhaul at the Middletown Air Depot, the work of the Navigation School has been carried on with B-10B's. This has hampered operations somewhat because of the limited radius which the B-10B can individually operate over water.

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ADVANCED STUDENTS ON NAVIGATION FLIGHT

Twenty-two students of the Pursuit Section of the Advanced Flying School, Kelly Field, Texas, took off on April 1st on an individual navigation flight to Mission and Fort Ringgold, Texas.

The students were checked in at Mission by 1st Lieut. R.J. Browne, and at Fort Ringgold by 1st Lieut. B.M. Hovey, Jr. When about 20 miles north of Fort Ringgold, the P-12 airplane piloted by Flying Cadet Jesus A. Villamore began to vibrate. Cadet Villamore made a forced landing and discovered that No. 1 cylinder had become loosened. He showed both courage and skill in landing his plane. Another student noticed this airplane on the ground and returned to Fort Ringgold to make a report to the instructor. The airplane could not be flown back to Kelly Field. No other mishaps were reported.

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APPOINTMENTS

Effective April 1, 1937, Colonel Frederick L. Martin (Lieut. Colonel) was appointed Wing Commander, with the temporary rank of Brigadier General in the Air Corps, with rank from January 1, 1937, and assigned to duty as Wing Commander of the 3rd Wing, GHQ Air Force, Barksdale Field, Shreveport, La.

Lieut. Colonel Millard F. Harmon was promoted to the temporary rank of Colonel, with rank from April 1, 1937. Colonel Harmon is now stationed in the Hawaiian Department and is in command of Luke Field.

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Biographies

LIEUT. COLONEL RALPH P. COUSINS

Lieut. Colonel Ralph P. Cousins, Air Corps, now on duty as a student at the Army War College, was born at Mexia, Texas, December 1, 1891. After graduating from West Texas Normal College in 1911, he was appointed to the United States Military Academy, from which he graduated, June 14, 1915. Commissioned on that date as a second lieutenant, he was assigned to the 12th Cavalry, and served with his regiment in the Brownsville District, State of Texas, on border patrol from September 14, 1915, to February 7, 1916, participating in action against Mexican bandits, September 17-18, 1915. On February 7, 1916, he was transferred to the 6th Cavalry, and he served therewith on border patrol duty, with the Punitive Expedition into Mexico, and in the Big Bend, Texas, District to August 7, 1916.

Detailed to the Aviation Section, Signal Corps, Colonel Cousins reported, in August, 1916, for flying training at the Signal Corps Aviation School at San Diego, Calif., and upon his graduation therefrom in April, 1917, he served for a brief period as a pilot with the 1st Aero Squadron at Columbus, New Mexico.

Assigned May 15, 1917, to the University of Texas, Austin, Texas, he organized the School of Military Aeronautics at that institution and was commandant thereof until September 25, 1917, when he was transferred to the Office of the Chief Signal Officer, Washington, D.C., where he served for brief periods, first as Assistant Director of Schools and then as Executive Officer for the Chief of Personnel and as Aviation Representative on the General Staff at the Army War College. In February, 1918, he was ordered on temporary duty overseas with the A.E.F., and he served as liaison officer in connection with flying training schools in England and France, and was at the front for a short time.

Colonel Cousins returned to the United States during the latter part of May, 1918, and was assigned to duty in the Division of Military Aeronautics, Washington, D.C., as a member of the Control Board. In October, 1918, he assumed command of Group B, 1st Provisional Group, and of Roosevelt Field, Mineola, L.I., New York. On January 15, 1919, he assumed command of Payne Field, West Point, Miss. Towards the latter part of 1919, Colonel Cousins assumed command of the 1st Day Bombardment Group at Kelly Field, Texas, and he remained on this duty until March 9, 1920, when he assumed command of Post Field, Fort Sill, Okla., for a month, and then returned to his previous duties at Kelly Field.

Transferred to the Office of the Chief of Air Service, Washington, D.C., in September, 1920, he served as a member of the Advisory Board until August of the following year, when he was ordered for duty as a student at the Sheffield Scientific School, Yale University, where for a period of one year he pursued a course in communications, graduating with the degree of Master of Science. For several months thereafter he was on temporary duty in the laboratories of the General Electric Company at Schenectady, New York, and then for a short time at the Signal Corps Communications School at Camp Alfred Vail, N.J.

From January to September, 1923, Col. Cousins was on duty in the Training and War Plans Division, and he was then assigned as Assistant Commandant of the Air Service Technical School at Chanute Field, Rantoul, Ill. On December 28, 1923, he assumed command of Chanute Field, at the same time serving as Acting Commandant of the Air Service Technical School, to July, 1924, when he resumed his former duty as Assistant Commandant, in addition to duty as Executive Officer of the post. In October, 1924, he was appointed Post Adjutant and Personnel Adjutant.

Colonel Cousins returned to duty in the Training and War Plans Division, Office of the Chief of Air Service, on January 2, 1925. More than three years later, he was transferred to the Philippines, and he assumed command of Clark Field, Pampanga, P.I., July 8, 1928. Completing his two-year tour of foreign service, he was transferred to Langley Field, Va., for duty as a student at the Air Corps Tactical School. Following his graduation from the one-year course of instruction at this school, he was assigned as student at the Command and General Staff School, Fort Leavenworth, Kansas, where he completed a two-year course in June, 1933, following which he was assigned to duty in Washington in the Office of the Chief of the National Guard Bureau.

On August 20, 1936, Colonel Cousins was assigned to his present duty as a student at the Army War College.

During the World War, Colonel Cousins held the temporary rank of Major from August 9, 1918, to February 27, 1920. He received his regular promotion to 1st Lieutenant, July 1, 1916; to Captain, July 25, 1917; to Major, June 21, 1925; and to Lieutenant Colonel, December 22, 1936. Prior to his permanent promotion to this latter rank, he held the temporary rank of Lieut. Colonel from June 16, 1936. He holds the ratings of Airplane Pilot and Airplane Observer.

LIEUT. COLONEL LEO A. WALTON

Lieut. Colonel Leo A. Walton, Air Corps, now on duty as Executive Officer of the 1st Wing, GHQ Air Force, March Field, Calif., was born at Salem, Oregon, October 8, 1890. After graduating from grammar and high school of his native city, he received an appointment to the United States Military Academy, graduating therefrom in June, 1915, and being commissioned a second lieutenant and assigned to the 10th Cavalry.

Following service with his troop at Fort Huachuca, Arizona, September 15, 1915, to March 1, 1916; at Naco, Arizona, to March 12, 1916, and with the Punitive Expedition into Mexico to December 15, 1916, he was detailed to the Aviation Section, Signal Corps, and assigned as a student at the Signal Corps Aviation School at San Diego, Calif., where he was stationed until August 4, 1917. He received the rating of Junior Military Aviator, July 26, 1917.

Transferred to Kelly Field, Texas, Col. Walton commanded the 76th Aero Construction Squadron from August 16th to October 23rd, and thereafter exercised supervision over the 75th, 76th, 77th and 78th Aero Squadrons until November 11, 1917, when he was transferred to Call Field, Wichita Falls, Texas, as Assistant to the Officer in Charge of Flying. From January 1 to March 5, 1918, he was Commandant of Cadets at Call Field and thereafter Officer in Charge of Flying until March 19th. He was then transferred to Brooks Field, San Antonio, Texas, as Officer in Charge of Flying. On October 10, 1918, he assumed command of Brooks Field.

From November 22, 1918, to March 2, 1919, Colonel Walton was on duty with the District Supervisor of the Southern District at El Paso, Texas. He was Assistant to the Officer in Charge of Flying at Kelly Field, Texas, to March 31, 1919; Acting Officer in Charge of Flying to May 15, 1919; and Commanding Officer of the Flying Department to June 25, 1919. Returning to Fort Bliss, El Paso, he commanded a detachment of the 1st Bombardment Group to November 18, 1919; and the First Surveillance Group to November 3, 1920.

On November 15, 1920, Colonel Walton took up his duties as a student at the Field Officers School at Langley Field, Va. In May, 1921, he assumed the additional duty of Commanding Officer of the 1st Provisional Bombing Group. Upon graduating from the Field Officers School on August 19, 1921, he was transferred to the Office of the Chief of Air Service, Washington, D.C., and assigned to duty in the Training and Operations Group, which was later redesignated as the Training and War Plans Division.

On August 23, 1923, Colonel Walton began duty as a student at the Air Service Engineering School at McCook Field, Dayton, Ohio, and, following his graduation on August 15, 1924, he remained at McCook Field as Assistant to the Chief of the Engineering Division in addition to performing vatious other duties, until the latter part of August, 1925, when he was transferred to the Philippines. From December 16, 1925, to February 25, 1926, he commanded Kindley Field and the 2nd Observation Squadron. He was then assigned to Nichols Field, P.I., with the Headquarters of the 4th Composite Group. Granted an extended leave of absence, under exceptional circumstances, he returned to the United States in March, 1926, and until August 3, 1926, he was on temporary duty with the Organized Reserves of the 8th Corps Area with station at Denver, Colo. He returned to the Philippines on September 22, 1926, and assumed command of the 3rd Pursuit Squadron and Clark Field. In May, 1928, he was transferred to Nichols Field for duty as Executive Officer of the post and of the 4th Composite Group.

Colonel Walton's next duty assignment was at March Field, Riverside, Calif., where he has been stationed up to this writing. His initial assignment was with the Headquarters of the 13th School Group. In October, 1928, the additional duties of Director of Training and Assistant Commandant of the Air Corps Primary Flying School were assigned to him. At various times he was in temporary command of the post. On October 1, 1931, he was transferred to the 1st Bombardment Wing and appointed Post Executive Officer in addition to his other duties. On November 14, 1932, he was assigned to the Headquarters of the 7th Bombardment Group as Executive Officer. At various times he temporarily commanded this organization. For a time he was on duty with the Civilian Conservation Corps, then as Commanding Officer of the Station Complement. Since August 17, 1936, he has been on duty as Executive Officer of the 1st Wing, GHQ Air Force.

Colonel Walton held the temporary rank of Major of Field Artillery, National Army, July 5, 1918, to February 27, 1920. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, June 18, 1925; and to Lieutenant Colonel, December 18, 1936. He held the temporary rank of Lieutenant Colonel from June 16, 1936, until the date of his permanent appointment to that rank. He holds the flying ratings of Airplane Pilot and Airplane Observer.

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Lieut. Colonel Ralph H. Wooten (Major), now on duty as a student at the Army War College, Washington, D.C., has been detailed as a member of the War Department General Staff, and will take up his new duties upon his graduation.

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ELIMINATION OF BOMBARDMENT SECTION AT THE ADVANCED FLYING SCHOOL

Touching on the elimination of the Bombardment Section at the Air Corps Advanced Flying School, Kelly Field, Texas, THE TEE, published by the Flying Cadet Battalion at the Air Corps Training Center, states that this came as a logical step in order to adjust training methods to the changes in military tactical flying which have arisen as a result of the development of new Bombardment airplanes. Broadly speaking, this adjustment in the advanced training program was found advisable for two distinct reasons.

First, it had become definitely established in tactical units that in order to promote efficient and safe operation of the large, new dual motored Bombardment airplanes the pilot must have more flying experience than that provided in one year's training at the Air Corps Training Center. To meet this situation two courses lay open for consideration. The first alternative was that the Bombardment Section at Kelly Field would be retained and those successfully completing the course would be allocated to other branches of the Air Corps on tactical duty for further seasoning before they were sent back to the Bombardment branch as a full-fledged, competent pilots. The defects in this course of training are practically obvious. The student completing training here in the Bombardment Section and sent out, say to an Attack squadron, would be poorly prepared to take his place in such an organization.

The second alternative, and the one found most practicable, was to eliminate a Bombardment Section, as such, at Kelly Field and give all advanced students more flying time in the Bombardment airplanes in conjunction with the regular flight training of their particular section. This system has a two-fold advantage. It will permit all graduates to join tactical units especially trained in a particular branch; at the same time, all graduates will have more bi-motor time than formerly and they will have the background training to be readily absorbed into a Bombardment unit after flying hours and experience are built up in another branch of the Air Corps.

In addition to the advantages of such a system pointed out above, there is still another. Present indications are that multi-motor airplanes will be used more and more in future military aviation. Any training in bi-motor airplanes which the graduate possesses will be a distinct advantage when he is called upon to fly one of these new ships.

Under the new plan, all students at Kelly Field will get approximately 30 hours flying time in the B-6's. Before the inauguration of the new plan, students from sections other than Bombardment usually only received approximately five hours transition in the Keystones. The 30 hours of training will include day and night navigation and all other phases of Bombardment training.

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WAR DEPARTMENT ORDERS

Changes of Station

To Panama Canal Department: Captain Howard H. Couch, from Advanced Flying School, Kelly Field, Texas; 1st Lieut. Thomas L. Bryan, Jr., from assignment and duty as student at Air Corps Technical School, Chanute Field, Ill.; Major Peter E. Skanse (Captain) from Maxwell Field, Ala.

To the Philippines: Captain Charles Backes, upon completion of present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To Chanute Field, Ill.: 2nd Lieut. Burton W. Armstrong, Jr., from Langley Field, Va., for duty as student at the Air Corps Technical School; 1st Lieut. Thomas R. Starratt, from Hawaiian Department, for duty as student in the Photographic course, Air Corps Technical School; 2nd Lieut. Henry B. Fisher from Selfridge Field; Captain George H. Steel from Kelly Field.

To San Francisco, Calif.: 2nd Lieut. John A. Hilger, from March Field, to Letterman General Hospital for observation and treatment.

Transfer

1st Lieut. Robert M. Lee transferred to the Cavalry, March 20, 1937, with rank from August 1, 1935, and to duty with the 1st Cavalry at Fort Knox, Ky.

Orders Revoked

Assignment of Captain Clinton W. Davies, student at Air Corps Tactical School, Maxwell Field, Ala., as student in the 1937-1938 course at the Command and General Staff School, Fort Leavenworth, Kansas.

Assignment of 2nd Lieut. Russell L. Waldron, from Langley Field, to Chanute Field, Ill., for duty as student in the Airplane Maintenance Engineering Course, Air Corps Technical School.

Assignment of 2nd Lieut. Eugene Brecht, Jr., Selfridge Field, Mich., to Chanute Field for duty as student in the Armament course at the Air Corps Technical School.

Assignment of 1st Lieut. David R. Gibbs, Langley Field, to Chanute Field for duty as student in the Maintenance Engineering course at the Air Corps Technical School.

Assignment of 1st Lieut. Douglas T. Mitchel from Barksdale Field, La., to Panama Canal Department.

Orders Amended

Lieut. Colonel Donald P. Muse (Major) assigned to Barksdale Field, La., instead of Mitchel Field, N.Y., upon the completion of his present tour of foreign service.

Obituaries

While towing a target on April 7th during aerial gunnery practice at Fort Crockett, Galveston, Texas, the airplane piloted by 1st Lieut. Arthur E. Livingston, Air Reserve, dived into the water approximately 3½ miles off shore. At this writing neither the body of the pilot nor the wrecked airplane was recovered. The deceased officer was a member of the 55th Pursuit Squadron, stationed at Barksdale Field, La.

Lieut. Livingston was born at Russellville, Arkansas, February 2, 1909. After graduating from high school, he attended Hendrix College for three years, and the University of Southern California for one year. He served with the National Guard for one year.

Appointed a Flying Cadet, Lieut. Livingston graduated from the Primary Flying School at March Field, Calif., February 20, 1931, and from the Advanced Flying School, Kelly Field, Texas, June 26, 1931, on which date he was commissioned a 2nd Lieutenant in the Air Reserve and rated an "Airplane Pilot."

Assigned to extended active duty, Lieut. Livingston served with the 12th Observation Squadron at Dodd Field, Fort Sam Houston, Texas, from July 1 to July 22, 1931; with the 95th Pursuit Squadron at Rockwell Field, Calif., from July 26 to October 23, 1931, and at March Field with the 95th Pursuit Squadron to August 31, 1932, when he reverted to inactive status.

For three years thereafter, Lieut. Livingston was city editor of the Russellville, Ark., COURIER DEMOCRAT. On September 1, 1935, he was placed on active duty with the Civilian Conservation Corps, and on November 15 1935, he was placed on extended active duty with the 55th Pursuit Squadron at Barksdale Field, La.

Lieut. Livingston accumulated a total flying time of approximately 1200 hours. He was promoted to 1st Lieutenant, Air Reserve, on August 10, 1935.

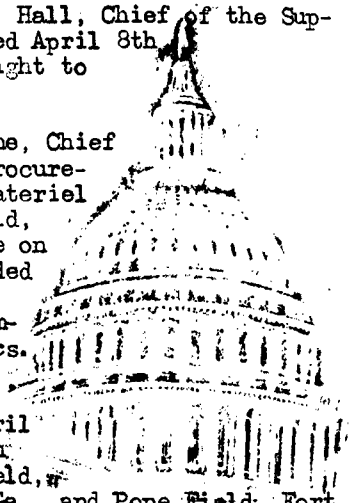
The bodies of Lieut. Robert C. Love, Air Reserve, and Private Emory J. Parsons, who crashed into a tree high up on Mt. McKinley of the San Bernardino mountain range during a storm on the night of March 27th were recovered two days later. The wrecked airplane was sighted by a pilot of one of 20 airplanes of the 17th Attack Group, March Field, sent out to search for the missing men.

Lieut. Love was born at Hickory, N.C., February 10, 1911. He graduated from Hickory grammar school in 1924; from Galileo High School in 1929, and from the University of Southern California, with the degree of Bachelor of Arts, in June, 1934.

Qualifying for appointment as a Flying Cadet, he entered the Primary Flying School, Randolph Field, Texas, with the October, 1934, Class. After satisfactorily completing the course at Randolph Field, he was transferred to the

(Continued on Page 14)

WASHINGTON OFFICE NOTES



Colonel Chalmers G. Hall, Chief of the Supply Division, returned April 8th from a navigation flight to Hartford, Conn.

Major Carl F. Greene, Chief of the Engineering Procurement Branch of the Materiel Division, Wright Field, dropped in the office on April 6th. He attended a meeting of the National Advisory Committee for Aeronautics.

Major Alfred W. Marriner returned April 7th from a navigation flight to Maxwell Field, Ala., Fort Benning, Ga., and Pope Field, Fort Bragg, N.C. On April 13th he delivered a lecture at the Signal School at Fort Monmouth, N.J.

Major Albert W. Stevens and Captain Charles A. Bassett, from Wright Field, were in the office on April 8th for a conference. Major Stevens recently assumed charge of the Army Aeronautical Museum.

Major Lowell H. Smith, Chief of the Inspection Division, left March 28th on an inspection trip.

Visitors to the Chief's office during the course of leaves of absence were Major Paul J. Mathis from Langley Field, and Major Claude E. Duncan from Mitchel Field.

Major George L. Usher, Chief of the Personnel Division, returned April 1st from a navigation flight to Maxwell Field, Ala.

Lieut. Colonel Vincent B. Dixon and Major Charles Y. Banfill recently returned from leaves of absence.

Lieut. Colonel Gerald E. Brower and Major Norman D. Brophy returned from Wright Field.

Visitors who dropped in the office during the course of navigation flights were Lieut. Colonel Harvey S. Burwell from Langley Field; Lieut. Colonel William B. Wright, Jr., from Fort Hayes, Ohio; Major Harry A. Halverson from the Command and General Staff School, Fort Leavenworth, Kansas.

Major Edward V. Harbeck, Jr., of the Inspection Division, left April 6th for Randolph Field.

Major Robert Kauch returned April 8th after ferrying a plane from the West Coast to Wright Field.

Captain Mervin E. Gross left April 11th for Wright Field for a conference.

Captain James B. Jordan left for Chicago on April 12th.

Obituaries
Continued from Page 13

Advanced Flying School, Kelly Field, Texas, from which he graduated October 12, 1935, specializing in Attack Aviation. He was rated an "Airplane Pilot," effective on that date.

Assigned to extended active duty, under his status as Flying Cadet, at Barksdale Field, Shreveport, La., with the 90th Attack Squadron, Lieut. Love was on duty as Assistant Armament Officer and Assistant Communications Officer. He was appointed a second lieutenant, Air Reserve, October 14, 1936, and transferred to March Field, Calif., in March, 1936, for duty with the 73rd Attack Squadron as Assistant Armament Officer.

Private Parsons, a native of Texas, enlisted in Long Beach, Calif., in the Army Air Corps, in November, 1936. He was a member of the 73rd Squadron of the 17th Attack Group.

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PERSONNEL ORDERS

Upon the completion of their present course of instruction at the Army War College, Fort Humphreys, D.C., Lieut. Colonel Ralph P. Cousins is under orders to proceed to Langley Field, Va., for duty on the staff of the Commanding General of the GHQ Air Force, while Lieut. Colonel Willis H. Hale (Major) is assigned to duty in the Panama Canal Department, sailing from New York City on or about September 11, 1937.

First Lieut. William D. Eckert, recently returned from foreign service, is relieved from assignment to station at Mitchel Field, New York, and assigned to station at Randolph Field, Texas, reporting to the Commanding General of the Air Corps Training Center for duty upon the expiration of his present leave of absence.

Lieut. Colonel Robert C. Candee (Major), is relieved from his present assignment and duty at the Naval War College, Newport, R.I., and will proceed to New York, N.Y., and sail on the transport scheduled to leave that port on or about May 19, 1937, for San Francisco, Calif. From that city, upon the expiration of such leave of absence as may be granted him, he will sail on the transport scheduled to leave that port on or about August 28, 1937, for the Hawaiian Department, where he will report to the Commanding General for assignment to duty with the Air Corps.

Second Lieut. Thomas Bellamy Mixon, Air Reserve, is ordered to active duty at Langley Field, Va., for a period of three years from April 21, 1937. He hails from Phoebus, Va.

Upon the completion of his present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas, Major Dale V. Gaffney (Captain) will proceed to Hamilton Field, Calif., for duty.

ELIMINATING COLD FEET

The Materiel Division, Wright Field, Ohio, is engaged in the project of standardizing the Type A-6 winter flying shoes. This shoe is constructed in the form of an overshoe with a light slipper insert.

The overshoe and insert are fabricated with 3/4-inch and 3/8-inch sheep shearling, respectively. The overshoe contains a 3-inch wide rubber foxing to which is attached a durable compounded rubber sole and heel. A heavy non-skid bar tread is also provided on the sole. Fastening means for the overshoe is provided by an interlocking fastener attached to the front opening, also a 1½-inch buckle and strap encircling the top edge of the upper. The slipper insert is provided with a felt sole and heel as a means of providing support for the feet when worn for walking purposes and to provide better operation of the airplane rudder and foot controls. An ankle strap is also provided on the inserts to prevent them from sticking in the overshoe when withdrawing the feet. The type A-6 winter shoes can be worn with or without the inserts, depending on the amount of warmth required by the wearer. Maximum warmth is obtained by removal of the wearer's regular shoe and using the insert with the overshoe.

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SCARCITY OF SKILLED MEN IN AVIATION

The well known veteran flyer, Charles S. (Casey) Jones, President of the Casey School of Aeronautics, Newark, N.J., writes an illuminating article in the April issue of the National Aeronautics Magazine, in which he states that there is an acute shortage of skilled men in the aviation industry, and that personnel managers have been scouring the country for trained mechanics, frequently making personal visits to sections remote from their factories and offering attractive inducements. As a result, most of the competent personnel has been absorbed and still the factories are unable to meet their delivery schedules.

Mr. Jones states that the last few years have witnessed a steady increase of business in the United States, both military and commercial. The export of aircraft has grown by leaps and bounds. Another factor responsible for the shortage of skilled men is the radical change in construction which has taken place within the last seven or eight years, when the industry has gone from stick and fabric to all-metal fabrication. Older men who have stayed in the aviation industry have had difficulty in adapting themselves to the changes, and many an expert cabinet maker or fabric worker has been forced to seek other lines of endeavor. The metals used in aircraft construction are comparatively new, and no large number of men has been trained in their use.

There has been an inclination to disparage manual labor, even though skilled, and this attitude has done much to bring about the existing condition. An analysis shows, however, that a skilled mechanic is seldom out of work.

Langley Field, Va., April 5th.

Hq. & Hq. Squadron, 2nd Bombardment Group: Major Harvey H. Holland was assigned to this organization from the 21st Reconnaissance Squadron and assumed charge of the Materiel Section. Captain John H. McCormick was relieved from command of this squadron and detailed as Group Personnel Officer, S-1. Captain Ward J. Davies assumed command of the squadron on March 12th. Captain Edwin R. McReynolds rejoined the organization for duty as Group Engineering Officer on March 20th, after several months of detached service at the Boeing Aircraft Factory, Wash., and March Field, Calif. Second Lieut. Russell L. Waldron was relieved from assignment on March 20th and assigned to the 96th Bombardment Squadron. Major B.M.Giles departed on temporary detached service to the Boeing Aircraft Factory, Seattle, Wash. Capt. C.E. O'Connor was transferred from this organization to the 96th Bombardment Squadron as YlB-17 airplane commander.

96th Bombardment Squadron: The Squadron wishes to extend a welcome to Captain C.E. O'Connor. We also wish to welcome two other new men, Lieuts. W.H. Higgins and R.L.Waldron. The former came to us from the 20th Bombardment Squadron and has been assigned the duties of Squadron Communications Officer and Navigator of the YlB-17. Lieut. Waldron came from the Headquarters Squadron and was delegated the duties of the Service Section, of which he is in charge. Two members of this Squadron recently received orders of transfer - Lieut. L.W. Greenbank to the Canal Zone and Lieut. J.W. Furlow to the Middletown Air Depot. We regret their loss but desire that they carry our best wishes for their continued success with them.

21st Reconnaissance Squadron: Second Lieut. C.W. Kitchens, Air Reserve, recently received orders transferring him to the Canal Zone. The Squadron regrets the loss of this officer and wishes him success in his future work.

Hqrs. and Hqrs. Squadron, 2nd Wing: The 2nd Wing Headquarters completed its plans regarding the Wing Field Exercise to be held in the Langley Field Air Base Areas, April 12th to 25th inclusive, and your correspondent believes that some night oil was burned by a few of the worthy members of the staff, especially by one young officer who has been doing such an excellent job of pinch-hitting for two or three other officers. Now with the GHQ war brewing out on the West Coast the first of May, the staff will have only a short recess, if any, before it begins planning who is going to win and how.

The concentration (of officers) at Aberdeen, March 23rd, relative to the April 12th maneuvers, was attended by Lieut. Colonel Russell L. Maxwell, Ordnance Officer, GHQ Air Force, and the following staff officers of the 2nd Wing, GHQ Air Force: Major Edison A. Lynn, Ordnance; Major Edgar E. Glenn, S-2 and S-4, and Major Irvin B. March, Surgeon. Mitchel Field was well represented by Colonel Walter H. Frank and staff.

Major March left March 26th on a five-day tour of Selfridge and Mitchel Fields for the purpose of inspecting Medical Corps activities and conference with Base Surgeons relative to Base Medical plans pertaining to the April 12th maneuver.

Hq. and Hq. Squadron, 8th Pursuit Group: Sergeant Lester W. Wright, whose duties during the past 4½ years with the 8th Pursuit Group were those of Mess Sergeant, Asst. Truckmaster and Supply Sergeant, and whose Journeyman ratings are Clerk, Auto Mechanic and Aircraft Welder, received orders to proceed to the Hawaiian Department. An ardent reader of books on travel, Sergeant Wright will no doubt enjoy his trip and his tour in Hawaii. The best wishes of his many friends in this Air Base go with Sergeant Wright.

If the "enemy" is looking for the 8th Pursuit Group at Langley Field during the period April 12th to 25th, they will be sorely disappointed. The Group will give them the slip and move to the National Guard Airport at Virginia Beach for the 2nd Wing Maneuvers. Members of the Group will leave their warm homes and "hot showers" and move into tents and "cold showers." Virginia may be the "Playground of the South," but April weather in Ole Virginny can make St. Moritz feel like the tropics. However, the supply section assures us they will have plenty of blankets on hand. That mosquitoes are not so prevalent in cold weather is our one consolation.

Siam has its "White Elephant," India its "Sacred Cow" and the Hq. Sqd., 8th Pursuit Group, its XA-14. The XA was temporarily assigned to the Squadron for tests of the 37 mm. cannon with which it is equipped. Several officers of the Group have been flying the "Sacred Cow" and firing the cannon to determine its use as tactical aircraft equipment.

33rd Pursuit Squadron: Four new Cadets reported to the Squadron, only one of whom is trained in Pursuit - Cadet Jacob J. Brogger. The others, Cadets Philip G. Cochran, Ed G. Hillery and D.W. Macdonald, received their training in Bombardment. The first few days kept the foursome busy reading Base Regulations, Flying Regulations, Pilots Information File and Technical data. Each Cadet was assigned to a P6-E airplane as Airplane Commander, and after local flying they have been making orientation flights within the Airdrome limits.

April 12th to 25th will find the 8th Pursuit Group at Virginia Beach, Va., working as a unit of the 2nd Wing maneuvers. The only good thing to take into consideration about the maneuvers at Virginia Beach at this time of the year will be the absence of mosquitoes. However, we expect to be too busy putting in four hours' flying and such to do anything else.

35th Pursuit Squadron: The pilot strength of the Squadron was increased by the arrival of three new graduates of the Air Corps Training Center. Although they trained in Bombardment at Kelly Field, Flying Cadets William K. McNown, Thornton K. Myers and Norris Perry show every indication of becoming top notch Pursuiters. They are at present in the midst of familiari-

zation with equipment, regulations and local conditions.

The Squadron also welcomes the return of Lieut. C.B. Harvin after a protracted sojourn as C.O. of the Army detachment at Allegheny County Airport at Pittsburgh. Another new addition to the organization is Lieut. J.E. Barr, 8th Pursuit Group Adjutant, who is attached to us for training.

36th Pursuit Squadron: Two important turnovers took place in this Squadron last week. Cadets Young, Tate and Hunker reported in from the Training Center, and Lieut. Doug. Williams deserted us to become a member of the GHQ Headquarters and Headquarters Squadron. Evidently the talent scouts were amongst us secretly, for knowing their kidnapping tendencies we make every effort to keep our talent under cover.

Due to these, and the many other recent changes in our personnel, the infrequent rainy days were greatly welcomed as an opportunity for new members to become familiar with the routine of their jobs and to catch up on paper work and to prepare for the April maneuvers. Besides this work, each officer is preparing an hour's lecture and critique on some subject of common interest. On the days of good weather we have been practicing unit firing on sleeve targets and familiarizing the new pilots with our equipment and formations.

For the purpose of training new personnel, a formation of six PB-2A's left for Maxwell Field on Friday noon, March 26th, and returned Sunday afternoon, March 28th. An enjoyable time was had by all, and everyone was pleased and satisfied with the performance of the equipment.

37th Attack Squadron: March 25th was an exceedingly sad day for the 37th Attack Squadron, for on that fatal day a tearful farewell was bid to ship number 76, which was engulfed by the trees and swamp land near Messick, Va., two miles from Langley Field. Flying Cadet Watson and Pvt. 1st Class, Lush escaped injury. The loss of the plane is felt most deeply by Lieut. Berquist, who had been assigned to No. 76 since it arrived from the factory last December, but who was on duty as Airdrome Officer at the time of the forced landing. Actually there were tears in the eyes of Lieut. Berquist, Crew Chief Soderstrom and Assistant Crew Chief Harvey when they spoke the 'Last Rites" at the scene of the accident.

Although this unfortunate accident, less than a week after beginning active duty, left Cadet Watson feeling rather dejected, he is now rapidly regaining his high spirits and will soon again have a beaming countenance, which is so characteristic of the smiling 37th. Mr. Watson graduated with the February, 1937, Class at Kelly Field and was assigned to the 37th, which he joined after a month's leave. With the knowledge he has gained studying aeronautical engineering and working for Pratt & Whitney, and with his good record at the Training Center, he will undoubtedly prove a valuable asset to the Air Corps. The members of the 37th extend a most hearty welcome to Flying Cadet Watson.

The 37th was very much pleased when they finally received the long-waited-for Chemical tanks. The maintenance crews are now busy installing the operating mechanisms, and the combat crews anticipate some very interesting work in cooperation with the Chemical Warfare School at Edgewood Arsenal.

By the time this is published, the 37th will be in the field operating from the airport at Rocky Mount, N.C., during the 2nd Wing Field Exercises which are to be conducted from April 12th to 25th. Also operating from the same airport will be the 2nd Bombardment Group.

Rockwell Air Depot, Coronado, Calif., April 1.

During January and February of this year, two inter-depot freight runs, one inter-depot passenger run and 18 intra-depot freight runs were completed, carrying a total of 63,139 pounds of freight and 20 passengers, a total of 24,565 miles. Equipment available for this use were two C-27C's and one C-33. Scheduled runs were completed 100%, but delays due to weather were somewhat above normal expectancy for this season of the year.

Among new members recently welcomed into the 4th Transport Squadron are Master Sergeant Peter Biesiot, Staff Sergeants Norris Brock, Emmett G. Gauper, Tommie E. Stapp and Sergeant Dae Hext.

Lieut. General Friedrick von Botticher, German Military Attache, was a guest of Colonel and Mrs. Wuest at dinner at their quarters on March 24th.

Colonel and Mrs. Wuest have as their house guest Baron Kunrat von Hammerstein, young son of General von Hammerstein, recent Commander of the German Army.

Warrant Officer Leland D. Bradshaw reported for duty with the Rockwell Air Depot and has taken over the Operations Department of this Depot.

On March 20th, Colonel Jacob W. Wuest and Major Reuben C. Moffat made a training flight to Kingman and Grand Canyon, Arizona, and returned on the 22nd.

On March 17th Lieut. Colonel Hubert V. Hopkins, Chief of the Industrial War Plans Section of the Materiel Division, arrived at this Depot via a Fairfield C-33. He was flown to Los Angeles in a Rockwell Depot airplane on the same day and inspected aircraft production at the factories in that vicinity. He returned to the Rockwell Depot on the 22nd, and on the following day departed for Wright Field in the Patterson Field Transport plane.

Lieut. Colonel S.J. Idzorek and Major J.T. Morris left on March 17th for the Engineering and Supply Conference at the Materiel Division, and at this time, April 1st, have not returned to their home station. Rumor has it that they are now sojourning in sunny San Antonio, Texas, waiting for the weather to clear up so that they can proceed to their home station.

Prior to assuming command of the Middletown Air Depot, Colonel and Mrs. Wuest plan to make an extensive tour, starting sometime in May, of the parks in the western United States and visit with Mrs. Wuest's mother, Mrs. G.H. Strong in Eau Gallie, Florida, before proceeding to their new station. All members of this command regret exceedingly to have Colonel and Mrs. Wuest leave, but hope they will enjoy their new station at Middletown. Colonel Wuest will be succeeded as Commanding Officer of the

Rockwell Air Depot by Lieut. Colonel Harold A. Stratton, now on duty as Chief of the procurement Section of the Air Corps Materiel Division, Wright Field.

Orders were received recently transferring Major Reuben C. Moffat to Maxwell Field, Ala., where he will be a student in the Air Corps Tactical School for the 1937-1938 course. Major Moffat is now Executive Officer at the Rockwell Air Depot. We are sorry to have Major and Mrs. Moffat leave Rockwell, but hope he will find his school year both pleasant and profitable.

Advanced Flying School, Kelly Field, April 5th.

One of the most enjoyable affairs of recent months was the barn dance given by the officers and ladies of Kelly Field in the Aviation Club, which was decorated in a truly rural manner with bales of hay, lanterns, and sets of harness hanging on the walls. Several head of livestock added a realistic effect. The 150 guests attending the party were attired in denim overalls, gingham frocks, etc. Prior to the dance, a country dinner was served, the tables being laid with red and white checked cloths and centered with vegetables and bluebonnets.

Captain George A. Whatley, Commanding Officer of the Headquarters Squadron, received notice of his transfer to Duncan Field. He has been stationed at Kelly Field since August 1, 1934.

Major Adrian Williamson and Lieut. Garboiz, 154th Observation Squadron, Arkansas National Guard, Little Rock, Ark., remained overnight at Kelly Field on April 3rd, after having ferried an O-38 to the San Antonio Air Depot for overhaul. This was the first time Major Williamson visited Kelly Field since he was trained here during the war.

Major Dale V. Gaffney visited Kelly Field on March 31st on a training flight in an A-8A airplane. Major Gaffney is now a student at the Command and General Staff School and was a former chief of the Pursuit Section at the Air Corps Advanced Flying School.

Major Lewis A. Dayton, a former Adjutant of the Advanced Flying School, but now stationed at Maxwell Field, remained here overnight on March 24th.

Major Albert C. Foulk, in command of a flight of seven A-17 airplanes, remained overnight on March 20th. They were returning to March Field from a training flight to Florida.

San Antonio Air Depot, Texas, April 5th.

The Depot greatly regrets the loss of two of its officer personnel recently relieved from assignment and duty at this station, Major Charles T. McAleer, Signal Corps, and Captain David J. Ellinger, Air Corps, Assistant Depot Engineering Officer and formerly Operations Officer of this Depot, who has been on duty here since April, 1932. Major McAleer, in charge of the Signal Corps Radio Section of this Depot since November 22, 1934, was a patient at the Station Hospital, Fort Sam Houston, since September 1, 1936. He was relieved therefrom and from assignment and duty at this Depot on March 31st to proceed to his home and await retirement. Major and Mrs. McAleer, their son and daughter will, it is understood, go to Los Angeles, Calif. Captain Ellinger was transferred to Chanute Field, Ill., for duty. With Mrs. Ellinger and their little daughter the Captain motored to Chanute Field, departing April 2nd. The sincere wishes of the Depot personnel go with these old friends for success and happiness in their new fields.

Recent visitors at the Depot on navigation flights were Lieut. Colonel H.V. Hopkins, of the Materiel Division, Wright Field, March 24th, en route, returning from an Interdepot Transport Service trip; Lieut. Colonel S.J. Idzorek, Depot Supply Officer, and Major J.T. Morris, Chief Engineering Officer of the Rockwell Air Depot, Coronado, Calif., March 27th to April 1st, en route returning from a Supply and Engineering conference at the Materiel Division; Major Lowell H. Smith, April 1st, en route via Randolph Field from the Office of the Chief of the Air Corps to Fort Bliss, Texas; Captain R.W. Chrisp and Lieut. W.D. Hopson, 154th Observation Squadron, Arkansas National Guard, Little Rock, March 25th-26th, leaving an O-38 plane for overhaul and returning by air.

A new addition to the Depot's official family was welcomed in the arrival of Captain George A. Whatley, and family, on March 26th. Captain Whatley was transferred here from Kelly Field and was assigned to duty with the 3rd Transport Squadron, also as Assistant Depot Supply and Assistant Operations Officer of the Depot.

Major John M. Clark, Depot Supply Officer, returned March 27th, and Major Elmer D. Perrin, Commanding Officer of the 3rd Transport Squadron, returned March 28th, by air, from a conference of Supply and Engineering officers in the Office of the Chief of the Materiel Division, Wright Field.

Lieut. Max H. Warren was relieved from assignment and duty with the 3rd Transport Squadron, this Depot, and assigned to duty as Assistant Engineering Officer and allied duties at the Depot.

Recent additions to the 3rd Transport Squadron are Privates Robert L. Sexton and Elmer J. Gunn, March 19th, and Privates Carl K. Russell and Armon C. Guthrie, April 1st, all transferred from the 62nd School Squadron, Kelly Field. Private Vance Vastel was promoted to Private, 1st Class, March 18th.

The annual inspection of this Depot was made March 26th to April 1st by Colonel Roy C. Kirtland, of the Inspector General's Office, Washington, D.C.

Hqrs. Air Corps Detachment, Municipal Airport, Long Beach, Calif., March 8th.

Into every life some rain must fall! On the eve of St. Valentine's Day, darkness descended over Long Beach, and a gentle drizzle developed into a downpour. By Sunday morning the police were scurrying about in rowboats, transferring citizens to the high places. We looked at our flying field and wondered how come this station had not been equipped with at least one Amphibian. On the following Sunday, history repeated itself, and.... we hereby make request on the "Chief's Office" for an Amphibian airplane of the latest design, in order that we may be appropriately equipped for training on a

field that at times becomes a part of the great Pacific Ocean.

After the storm comes the sunshine! Old Sol has again turned his affectionate face upon us, and the BT-9's are back in the air - but with a delay of 144 flying hours (3 ships - 4 days). Nevertheless, our objective of 10 hours solo time for each pilot in the BT-9 before July 1st will be accomplished if we have to fly by moonlight, provided the good old flying time allotted holds out. This will avoid the necessity of giving transition or check flights during the Summer Camp training period and let us get right down to real business. For the information of those who might be interested, we call our new organization the "First Reserve Training Group," and it consists of the 479th Pursuit Squadron and the 1st Training Squadron (formerly the 478th Pursuit Squadron). Lieut. Colonel Joseph S. Marriott is Group Commander, Major William F. Frye commanding the 479th and Major Claude Morgan commanding the 1st Training Squadron. During the next three months it is planned to concentrate on photographic missions, radio communications, formation flying, blind flying and aerial gunnery (photo).

Captain Harry B. Watson, who knows all about photography, is installing a dark room in the southeast wing of the Club House. It seems we are going in for photographic missions in a big way. Well, we do have the scenery, the ships, the cameras, the dark room.....and the pilots, the latter to be reported on at the next writing.

Colonel J.E. Fickel, Air Officer, 9th Corps Area, dropped in out of the sky at Long Beach recently. It seems the Colonel was observing maneuvers in Southern California and dropped in enroute.

Colonel H.E. Yates, Executive Officer, 1st Reserve District, paid us a visit on February 21st. The Colonel made a short talk to the officers present, giving some very valuable information and suggestions which will be of great assistance in the training schedule now being followed at this station.

Captain George A. Anderson, Air Reserve, came home for a short visit recently. "Art" was one of the first to go to the front with the CCC's and is now commanding Company No. 4778 at Escalante, Utah. Ye Scribe had the good fortune to be on the line when "Art" dropped in and had a swell visit with the Captain before he was completely talked to death. "Art" has been on CCC duty now for around three years, and his going made a void in the 479th that has never been successfully filled, for he was a leading spirit both in athletics and social activities. However, the great open spaces have brought out all the characteristics of a "first class fightin man." Confidentially, I think I've found out just what it takes to command a CCC Camp. It takes a keen eye, an alert brain, and a terrific right.

Second Lieut. Wm. Melvin Brown, Air Corps, formerly attached to this station, is at present visiting in Long Beach while on leave from Randolph Field, where he is a member of the Regular Army and an instructor.

Ye Scribe came down this morning to exercise one of the BT-9's and was tickled to death to see all the ships on the line shining like new money - but it wasn't my lucky day. It seems the Corps Area Commander was due the next day for his annual inspection, and the entire outfit was engaged in manicuring that part of the "Grand Canyon" left on our country estate by the late "unusual weather." However, the trip had its compensations, for I learned some dandy new expressions from the Unit Instructor. If it wasn't for the censor I'd tell you what the Captain said about the shorthanded personnel situation.

Randolph Field, Texas:

The personnel of the field were given an opportunity to see one of the new Air Corps giant Bombers, a Y1B-17, on the afternoon of April 1st. The plane remained overnight at Randolph Field during its one stop from March Field, Calif., to Langley Field, Va., its home station.

The Y1B-17 was commanded by Major Barney M. Giles, with Major Vincent J. Meloy as pilot and Lieut. F.W. Glantzberg as co-pilot. It also carried a crew of three enlisted men. The flight from March to Randolph Field was made in approximately six hours.

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Technical

DATA AND ENGINEERING NEWS
Air Corps Materiel Division

An Engineering Section Memorandum Report gives the results of experimental tests conducted on two electric free air thermometers procured from the Weston Electrical Instrument Corporation, Newark, N.J. These thermometers consist of a ratio meter type indicator movement mounted in a 2¾-inch round dial case with scale calibrated -45 to +45° C., and an electric resistance element. These two units are connected jointly to the 12-volt system of the airplane. The wire of the resistance element is wound on a long core and is open to the air except for a thin layer of varnish. This element is placed in an open-ended tube for protection in handling. The electric free air thermometer is superior as to accuracy and lag characteristics to the standard Type C-5 free air thermometer as, due to its construction, there is no heavy metal wall over the temperature sensitive element. It was recommended that a quantity of ten of these instruments be procured for service test.

Glass Reflector Buttons.

An Engineering Section Memorandum Report covers proposed development of glass reflector buttons to determine if a button similar to that used for highway signs can be developed for outlining runways, using light from landing lights or floodlights for providing the signal.

(Continued on Page 19).

KEEPING FIT

Kelly Field Baseball is now in full swing under the coaching and management of Lieut. R.J. Browne, who has a very experienced man in Army baseball to aid him in Master Sergeant Van Houten, former 1st Sergeant of the 46th Squadron at Randolph Field. Sergeant Van Houten is well known in Army baseball circles, having played the game for the greater part of his Army career.

About fifty men reported for practice the first day. Although it is rather early to tell much about the new material out this year, there are some of them who have played Army baseball before and these men, together with those from last year's squad, should give Lt. Browne and Sergeant Van Houten plenty of material with which to start the season.

Drobin, Beaudreau, Anderwald and Nick are last year's pitchers who started with the first day's practice. Globerg, Summers, Griffin, Cea and Jones are the only infielders who have reported from last year's squad. To date Billy Klapp is the only outfielder who has reported. He was the leading hitter on the squad last year, and the fans look for him to repeat this year. In a couple of weeks we should be able to tell who of the newcomers are showing up the best in practice.

The first game was played Sunday, March 28th, against Hondo and D'Hanis' combined teams. The Kelly Field team lost 5 to 4. The next two games were played with Hondo High School, and Kelly Field won both, the first by a score of 11 to 3, and the second, 12 to 3.

Langley Field The 49th Squadron, with a definite view of winning the Langley Field Inter-Squadron League Baseball Tournament, had its initial turnout for practice with 19 prospective pastimers answering the call of Lieut. Montgomery, Squadron coach, who states that with eight veterans back in uniform and with some promising looking youngsters, the prospects of a pennant-winning club look bright.

The 96th Squadron baseball team is rapidly being whipped into shape, and we soon expect to extend a challenge to the teams of the 49th and 20th Squadrons. Lieut. Johnson, Athletic Officer and coach, reports that the Squadron - practically has the Group baseball championship in the proverbial bag.

Athletic activities of the 21st Reconnaissance Squadron have consisted chiefly of softball during the past few weeks. New softball equipment was recently purchased, and this has stimulated interest in this game. Quite a few men are turning out daily.

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FISH BITES AIRPLANE

The Central American Express of Pan American Airways, bound out of Vera Cruz, was viciously attacked at 2,000 feet by a bay tuna. Diving out of the sky, the fish crashed into the wind-

(Next Column)

Technical Data and Engineering News
(Continued from Page).

The following conclusions were derived from a study of the problem and discussion with engineers of the American Gas Accumulator Company, Elizabeth, N.J., who manufacture reflector buttons for highway signs:

For airplane landing lights the problem is simple, provided the lights can be placed adjacent to the pilot. In this case, the same design as is used for highway signs, except six times as large, would be required. The diameter would be approximately $4\frac{1}{2}$ inches. As the airplane landing lights are more effective when located in the wings, the problem, for this location, is more complicated. Briefly, a button seven times as large would be required (diameter approximately $5\frac{1}{4}$ inches). Each button would have to be individually adjusted for the path of approach. To produce a cone of light of approximately 8 inches would require a button approximately $10\frac{1}{2}$ inches in diameter.

It was recommended that further development along this line be discontinued for the following reasons: (1) The size required is excessive; (2) The adjustments required are too difficult for practical use; (3) For both floodlights and landing lights, two sets of buttons, adjusted differently, would be required. It was also recommended that development of a rubber flap (similar to street stop signs) be considered in lieu of the reflector buttons.

Mechanics' Cap, Type A-2:

An Engineering Memorandum furnishes information for standardizing Type A-2 mechanics' caps.

Service test results obtained by San Antonio Air Depot indicate that this type cap is superior to the present standard Type A-1 mechanics' cap. The Type A-2 is provided with an adjustment means on the front and a removable visor, which eliminates the present difficulty encountered by laundering shrinkage of the type A-1 cap. The need for different head sizes is also eliminated with the Type A-2, sufficient adjustment being provided for head sizes from 6-7/8 inches to $7\frac{3}{8}$ inches. The Type A-2 mechanics' cap is fabricated with mercerized cotton fabric, the same material as used for Type A-1 mechanics' coveralls.

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shield brace on the pilot's side. Since the glass was only shattered, Flight Captain John Casio scraped what fins and scales he could get off and proceeded to Guatemala City. Landing at the port, he gave the following explanation to the startled airport maintenance inspector and his mechanics who crowded around:

He was sailing along peacefully enough, just having levelled off at 2,200 feet after his climb from the airport at Vera Cruz, when he saw a flock of frigate birds across his line of flight well ahead and above him. Suddenly a thud and a darkened windshield. Startled by the close approach of the big mechanical bird, some frigate evidently opened his mouth in horror, and down dropped the tuna!

- N.A.A. MAGAZINE.

Boy! Page Bob Ripley!