AVIATION

The Oldest American Aeronautical Magazine

FEBRUARY 28, 1927 **Issued Weekly** **PRICE 15 CENTS**

A Curtiss MF boat of the Rogers Airlines at Palm Beach, Fla.

VOLUME XXII

NUMBER 9

SPECIAL FEATURES

THE K-8 AUTOMATIC RECORDING CAMERA
THE SPARTAN C-3 COMMERCIAL PLANE
THE DERULUFT AIRLINE TO MOSCOW

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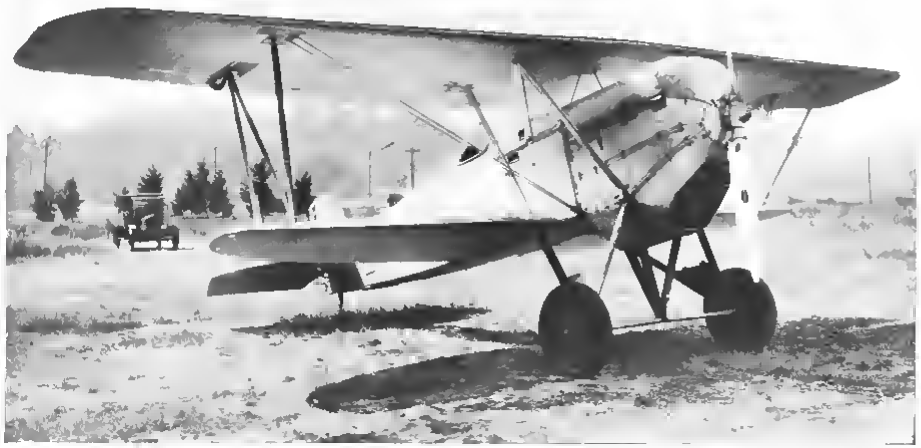

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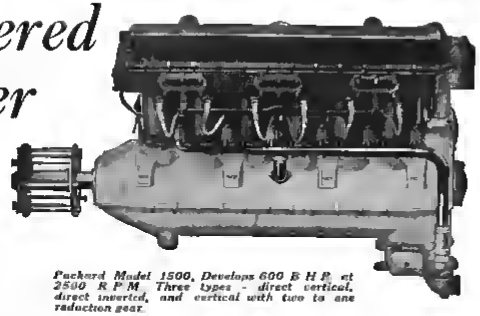

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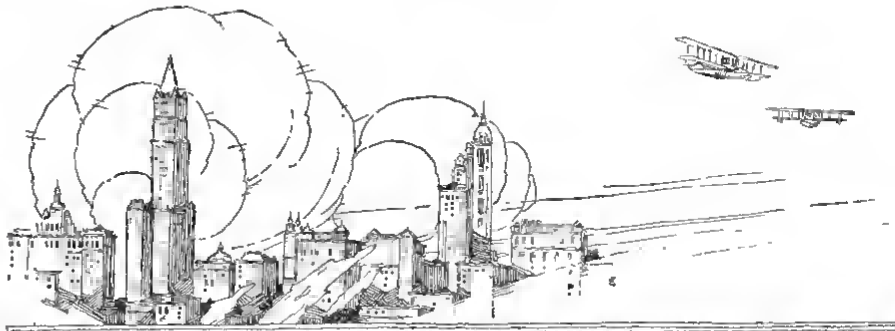

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With the Editor

In the elimination of the seasonal aspects of flying, the development of skiis for aircraft has played an important part. Regardless of the fact that comparatively little has been said on this subject, the Air Corps has played an important part in this development work. The problems concerned are, in the main, matters of stress under landing conditions and these primarily take two forms. In one case a heavily loaded plane is considered, and in another a comparatively small machine, but one which lands at very high speeds.

In the latter case, the Air Corps has been very largely responsible for the progress which has been made and what has been done in this direction was excellently demonstrated in the recent Goodwill Flight of the First Pursuit Group into Canada flying Curtiss Hawk Pursuit planes. This flight, which is discussed in some detail in AVIATION this week, constituted a very complete test of skiis under service conditions, and the results can only be considered as highly satisfactory and add further to the making of the airplane suitable for military service in all weathers.

The United States has always taken a leading part in the development of survey by air to the extent that this form of aerial service now represents one of the most valuable commercial uses to which aircraft can be put. An interesting aspect of this subject is exemplified in the discussion of the new military recording camera described in this issue.

AVIATION

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Airships in Tranaportation

WITH THE news that the Spanish are planning an airship service across the South Atlantic Ocean and the Germans a seaplane service between Bremen and New York, via the Azores, the question is again raised as to the respective useful spheres of heavier-than-air and lighter-than-air craft. The contention has frequently been voiced that the heavier-than-air machine is more suitable for transportation over distances under 500 miles than is the airship, which finds its sphere of real value in air transportation in the operation of long distance trunk air lines where intermediate stops are not readily feasible.

Transportation facilities available in specific parts depend entirely upon the demand which exists, not only as to class but as to quantity. Thus, while the high speed of the airplane is necessary for successful competition against modern railroad transportation, it is generally conceded that the slower moving but still very fast airship offers sufficient speed advantages to warrant its use in competition against the steamship.

In considering the possibilities of more speedy ocean transportation, however, the question may well be asked, 'Why is it that a business man in a great rush can make very much better time between New York and London than he can between San Francisco and Hawaii?' While, of course, far less business is carried on between the two latter points than over the former route, it is perfectly conceivable that on occasion a man will be in just as urgent a hurry to make the Pacific journey in, say, five days, as he might be to make the Atlantic crossing. Yet to Hawaii he cannot do this because the ships operating on the Pacific are not fast enough. The explanation of this situation lies in the extent of the demand in the two cases. Across the Atlantic the proportion of what may be termed express travel is so great that it enables the steamship companies to operate high speed boats like the Mauretania, Leviathan etc. On the Pacific, however, these conditions do not prevail and there is insufficient demand for fast transportation to warrant the running of really high speed ships.

Here, then, is perhaps the field of the commercial airship. In order to make it economically feasible to operate a "Leviathan", it is necessary that there be a certain minimum of first class passengers per trip running into a hundred or two, in addition to several hundred second class passengers. However, in the case of an airship of, for example, 5,000,000 cu. ft. capacity, carrying, of course, only first class passengers, the full load is somewhere around 100 or 150 passengers and presumably it is reasonable to assume that if such a vehicle is feasible at all in commercial transportation it can successfully pay its way on something less than a full capacity load, possibly 85 passengers.

The real future of the large rigid airplane, therefore, appears to be wrapped up in the fact that its economic operating condition as regards useful load is so much nearer to the demand for express service than is that of the steamship. So that it seems reasonable to predict that, if and when the large rigid airship is developed to a state of perfection nearer to that of practical requirements, it will find an immediate future in transoceanic transportation and will provide express service over those routes which have been unable to support such service with present facilities.

Emergency Fields—Never Again

EMERGENCY LANDING fields—what a curse on the future of commercial aviation! Can air transportation ever become popular in the public eye with the continued use of such terms? An airway, the Department of Commerce decrees, is "an air route between air traffic centers which is over terrain which is most suited to an emergency landing, with landing facilities at intervals . . . ." While it is agreed that we should always face the facts, few will deny that the use of these "landing facilities at intervals" in emergencies is daily becoming less and will continue to grow less with the steady perfection of the airplane and the aircraft engine. Furthermore, it seems most reasonable to expect that, in future, villages which are now located near these so-called "emergency fields" will grow into cities and aircraft flying along the airways will make certain scheduled stops en route at these very airdromes which, to the detriment of commercial aviation, we now see fit to describe as emergency facilities.

The use of the term "emergency landing field" should be abolished. Not only is its validity growing less every day, but the psychological effect upon the general public of its continued use will kill all confidence in the growing security and safety of air transportation. From now, AVIATION bans the use of the term "emergency landing field" from its columns. In substitution, the term "Intermediate landing field" is infinitely superior and, accordingly, will be adopted. It satisfactorily differentiates between the major airport and the intermediate landing facility which may still in the early stages of air transport development be used for emergencies but which will eventually grow into a regular minor air station when the possibilities of an emergency landing are as remote from airline operation as an emergency breakdown is on our railroads. Nor is this state of development in the distant future.

The Deruluft Airline to Moscow

(THIRD PART)

Diary of the Night Flying Trip from Berlin to Capital of Soviet Russia

By LESTER D. GARDNER

This is the third of a series of articles by Mr. Gardner describing the principal airlines of Europe, Asia and Africa. Mr. Gardner flew 21000 miles last summer over the foreign air routes and through the courteous cooperation of the various airlines will present for the first time not only the observations of an experienced air traveller, but facts that can be considered authoritative—ED.

Seeing Moscow from the air is one of the rare treats that only comes to the air traveller. Looking up from the ground at the Kremlin, the cathedrals or the large public buildings gives a very incomplete impression of the beauty of the many colored domes and beautiful edifices that dot all parts of the city, the grounds that surround the official government buildings or the sweep of the winding Moskva River.

When we landed at the airdrome on the outskirts of Moscow, Dr. Davidoff, the Russian Director of the Deruluft air transport company had come to welcome us to the Soviet capital. It was only natural that the anticipation of landing at Moscow had aroused a certain amount of curiosity as to what would be the procedure at the airdrome. In Berlin, I had heard from a recent visitor to Russia, who wished to make it appear to be a land of mysterious, as well as forbidding experiences, that observing officials would keep a keen eye on my every move, that I would be told where I could live, how much I would have to pay and where I could go.

Courtesies on Landing

Almost apologizing for my credulity, I write what actually occurred. Dr Davidoff greeted me with a very courteous inquiry as to the day's air trip and expressed the hope that I had found it of interest and not tiring. He gave my passport to one official, had my well stamped travelling bag and camera taken by another and invited me to look over the airdrome. A dozen wooden hangars sheltered aircraft of many types. At the end where I landed were the commercial airplanes, the most conspicuous of which was a new Dornier Komet III, the latest German commercial passenger plane. At the other side of the field were the military hangars. A half dozen planes were in the air and the hum of the engines made me feel less strange perhaps than anything else could have done.

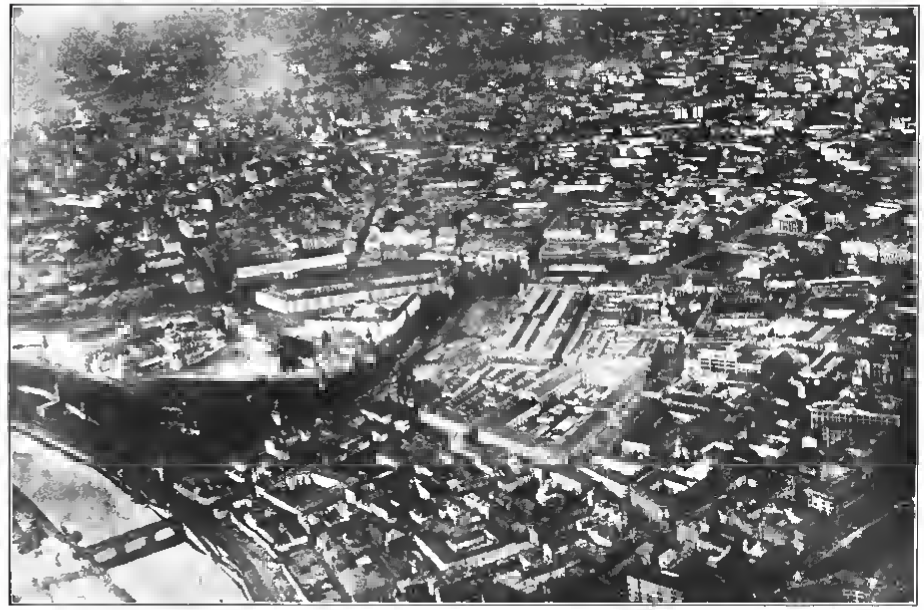
Many flying officers, as well as privates, were standing and seated in groups. They were not easily distinguishable apart and it gave me the first of the new impressions that I was to receive. I will not try to give any interpretation of the new theories that are being tried in the Red air corps, but if an agreeable and smiling friendliness is one of the effects, I must, in fairness, record it.

Privacy at Customs' Inspection

When the customs' officer was ready for me, I was asked to go into a booth where my baggage was examined. It was the first customs' boundary in the world that I had ever found where all one's personal belongings were not spread out for the public to gaze upon with apparent delight. My mind went back to the methods used on the New York piers where ladies have to spread their most dainty and intimate clothes out for the public, as well as the custom's officer, to inspect. But here in Moscow, it was different. Everything I carried was thoroughly, but carefully and privately examined, the bag locked for me and placed outside the booth. I was then expecting to receive my instructions from some fierce looking surveillance officer.

Instead, I was asked if I wished to go to my hotel in a taxi, as the bus was somewhat old, the drive long and the road rather rough for anything but the more comfortable private autos. It was ordered by telephone and I was asked if I had any particular hotel that I wished to go to. I had been told that the Savoy was as comfortable as any in Moscow and timidly asked if I might stop there. I could see that Dr. Davidoff had suspicions that I felt that I had to ask permission to do anything and everything. He set my mind at ease at once by suggesting that as I must be tired and wish to rest, that he would let me go to the hotel alone, as he lived in the suburbs, and would call for me in the morning after I had a much needed sleep.

The Kremlin with the former Palace of the Tsars



An Air View of Moscow showing Kremlin surrounded by high walls enclosing palaces, cathedrals, libraries and arsenals. It is now the seat of the Soviet Government. Lenin Square with the tomb of Russia's national hero is in the center

Alone in Moscow, without knowing a word of the language and without the protection of that observer that I had rather expected to be more of a friendly protector than a nuisance. The taxi proved to be a fine French seven-passenger automobile of the latest type with a driver and a mechanic. As we left the field, several of the air corps men waved a cheery good-bys and after leaving the entrance we passed the Palace of Napoleon—who evidently occupied it on the outskirts of the city to enjoy the view. Very soon, we neared the city, and, except for the Russian blouses on the men and the absence of the asphalt pavements, I experienced no strangeness in the new surroundings.

It is undoubtedly true that visitors from America or Western Europe who visit the cities of Russia the Near East or the Middle East make comparisons with Paris, London or Berlin. The only fair way to judge cities is to compare them with the other places that are the same distances from the great metropolises of Europe that serve as standards. I had only recently been in Baghdad, Jerusalem, Cairo, Constantinople and Mosul and, by comparison, Moscow, though farther away, was much more modern and better built in every way.

Moscow Expensive for Tourists

When we reached the hotel, I found no difficulty in securing a room, which, though small in size and without bath, was priced at 20 roubles or $10 a day. Moscow is not inexpensive for any but workers. Visitors, capitalists and mere editors pay alike and high, comparatively speaking. After a very good dinner, served in a restaurant on the top of the hotel, I felt so refreshed that I enquired if there were any amusement places that I could visit. As I made the enquiry, an American volunteered to loan me his interpreter for the evening and we went to an open air garden theatre where two excellent vaudeville shows were provided. During the promenade periods an excellent opportunity was afforded to get an impression of a typical cross section of a Moscow audience. All looked to be happy and very pleased with the world at large. I was charged three times more than the price the worker with me paid for everything I purchased.

But as this account is to be concerned with an air journey and not observations on the social conditions in Russia, interesting and curious as they are, we will have to pass quickly over the many interesting experiences of the following day.

Passport Visaed in Two Hours

Through the great courtesy of Theodore Rothstein the distinguished member of the Collegium at the Foreign Office, privilege of receiving in two hours, a passport visa to leave Russia was secured, a procedure usually requiring from one to two weeks. Mr. Rothstein expressed surprise that anyone, particularly an American, should go through all the many details of securing a Russian visa and then only stay in Russia one day. Such a quick trip had been unheard of before and caused natural wonderment. But when he learned that this air tourist was not studying political or social conditions but trying to learn as much as possible of the air lines in the shortest possible time, he became most willing to give every assistance possible. As some members of the Aviakhim had planned a dinner to their American guest that evening, the Aero Club of Germany, a dinner in Berlin the following evening and the Royal Aero Club of Great Britain another dinner on the next evening, the demonstrations of the possibilities of an air trip of 1800 miles from Moscow to London in two days so appealed to the imagination of this director of foreign relations as affecting the press that he waived all formalities and directed that the visa to leave be given at once.

During the course of the conference, Mr. Rothstein, whose English had been perfected when he was with Lenin in London before the Revolution, told of the hopes and aspirations of Russia in the development of civil aviation. He extended a most cordial invitation to return and fly over some of the more important of the Russian air lines. He told of the plans that were then being perfected, and which have since been carried to such a successful conclusion, of the air line from Moscow to Pekin and expressed the hope that I could return next year when it was in regular operation and fly across Siberia.

When the conversation turned to the relations between the United States and the Soviet Republic, a plea of the necessity

Fokker plane leaving Moscow for Germany. Note Soviet insignia of hammer and scythe on fuselage

of devoting one's entire thought to one subject at a time, and an earnest desire to avoid any appearance of representing in any way any American international political point of view, was accepted as an obviously frank statement.

In connection with the securing of the visa an expression of appreciation is due to Walter Duranty, the correspondent of *The New York Times*, who, for so many years, has given Americans, through his despatches, such a vivid account of the progress and problems of Russia. He not only aided with valuable suggestions, in securing the visa, but took me for a thirty mile ride through the main streets and suburbs of Moscow. It was during this very interesting sightseeing trip with an expert on Russian affairs that I saw the famous bathing beach on the Moskva River in the center of Moscow, where men and women enjoy their afternoon swim without the inconvenience of having to procure bathing suits. I was informed that the custom was not new but had been in vogue for many years.

Aviakhim Dinner

At eight o'clock in the evening, at the Deruluit Villa, which is maintained by the air line for its pilots who are away from their homes, a dinner was given to the American visitor by some of the representative aeronautical people of Moscow. It was presided over by the charming wife of the Russian director of the Deruluft, Mme. Davidoff. As she, like all travelled and enlitned Russian ladies, spoke English fluently, it is needless to say that the occasion was not one of only aeronautical interest. After the exceptionally well arranged menu, there was the usual exchange of courtesies through a few speeches. M. Wishneff, the Director of Russian Civil Aviation expressed high hopes for the future development of air lines throughout the European and Asiatic Russian Republics. He indicated a very thorough knowledge of aeronautics in the United States which he graciously said was due to his constant reading of AVIATION for many years. Dr. Davidoff introduced many of the guests present and after I had expressed the greatest appreciation for the honor as well as the hospitality, the experience of sleeping at the villa with the pilots was offered and accepted with a full knowledge that getting to the flying field alone at five a.m. would not be the most pleasant experience, particularly after such a well chosen selection of prewar memories had been revived at the dinner table.

"The Flight from Moscow"

Promptly at four a.m., all the pilots and mechanics, with their grateful guest, enjoyed a most appetizing breakfast and soon we were on our way to the airport at which we had landed only a few hours previously. Many planes were already on the line ready for either military or civil flying.

In the automobile bus that took us to the airport the passengers included a Cossack in a most picturesque black costume, a Navy officer in white uniform, and a most attractive Russian girl from the Ukrane district in Southern Russia. I had high hopes that I would have interesting flying companions to Berlin. We all went through the passport, weighing, customs and ticket formalities together, but to my surprise, the three smiling companions walked over to a splendid new Dornier Komet III, entered the cabin and in a few minutes were in the air on their way to Tiflis.

Our pilot, J. Woedillo, wasted no time in getting in the air after we had again expressed appreciation for the courtesies that had been extended to us at the Soviet Capital. One other passenger was in the cabin and instead of making notes, as I had done on most of the other flights, the day was spent sleeping, resting and reading. The stop at Smolensk gave another opportunity to enjoy the excellent cuisine prepared by the Russian girl that surprised us on the trip to Moscow with such a palatable lunch. The next stop was at Konigsberg where we changed from the single-engined Fokker to a three-engined Junkers which took us to Berlin, with one stop at Danzig. The usual time of arrival at Berlin is 7 p.m. but at 6:30 the great Tempelhof airport was reached and after being greeted by Mrs. Gardner who had remained at Berlin, and making a change of clothes, I reached the Aero Club of Berlin where the dinner in honor of the American "air trotter" was held amid an exchange of amenities such as only could take place in the formal atmosphere of this distinguished club of which more will be written in the article on German air lines.

Appreciation

In concluding this description of the air trip to Moscow, it is necessary to express regret that mention could not have been made particularly of many of the courtesies received at the hands of many Russians whose names either were not known to me or have been omitted for the lack of space to tell of their part in the trip. To the Deruluft Air Transport Company that arranged the trip so efficiently, this opportunity is again taken to express the greatest appreciation.

Jordon from the A

Ludington Moves to Philadelphia Airport

The Ludington Exhibition Company, Inc., whose offices are in the Atlantic Building, Philadelphia, will, on April 1, begin flying operations at Philadelphia Municipal Airport. For some years they have been operating from the Pine Valley Airport, Pine Valley, N. J. The latter field is owned by Mrs. V. E. Ireland of Pine Valley, N. J. and is now open for lease to other airplane operators. The field has adequate hangar facilities, is near the cities of Camden and Philadelphia and is favorably known to fliers throughout the East.

Deserts Taxi for Plane

A former London taxi driver, who sold his taxi because he considered the streets too dangerous, is now undergoing instruction in flying at the London Aero Club, with the idea of operating an air taxi.

He expects to buy a light airplane and to hire out the machine, with himself as pilot, for flights at the rate of a shilling a mile.

In making this announcement, he said that he believed in the near future air taximen will stop at airdromes for fares or cruise at a low altitude looking for signals from special towers along the main thoroughfares, which would indicate that a fare was waiting.

Curtiss Hawks of the First Pursuit Group, Air Corps, on arrival at Buffalo Airport

First Pursuit Group Flies to Canada

Curtiss Hawks on Skis Make Good Will Flight of Winter Maneuvers.

THE RECENT flight of the twelve pursuit airplanes and one transport plane from Selfridge Field, Mt. Clemens, Mich., to Ottawa and Montreal, Canada, Buffalo, N. Y., and return to Selfridge Field, afforded the First Pursuit Group many interesting experiences in connection with flying in sub-arctic weather. The purpose of the flight was to provide a practical test of the mobility of the present type of pursuit planes under the most severe weather conditions, using skis for the landing gear of the planes instead of wheels. Another reason for the flight was to comply with the wishes of representatives of the Canadian Government, as well as prominent citizens of the Dominion, that a flight from Selfridge Field visit some portion of Canada, while on maneuvers, for the purpose of stimulating greater interest in aviation.

Personnel

The flight started from Selfridge Field on the morning of Jan. 24. The pilots of the twelve Curtiss P-1B pursuit planes (Curtiss D-12 engines) being Major Thomas G. Lanphier (commanding), Lieuts. St. Clair Streett, Arthur C. Iggrett, L. C. Mallory, John J. Williams, Leonard H. Rodieck, Lawrence C. Elliott, Lee Gehlbach, Charles H. Deerwester, George G. Finch, Francis C. Crowley and Joseph G. Hopkins. The transport plane, carrying six mechanics and the necessary spare parts, was piloted by Staff Serg. Byron K. Newcomb.

At the start of the flight, good weather was assured over the route to Ottawa, with a 20 m.p.h. tail wind from the Southwest. Poor visibility was somewhat of a hindrance for the first twenty-five miles over the country Northeast of Lake St. Clair, but this condition rapidly cleared when the lakes were left behind and, although the sky was overcast, the visibility was excellent. Flying a compass course for the first 150 miles at an altitude of about 1,000 ft. over Ontario carried the fliers over level country, adequate for landing with skids. South of Lake Simcoe, a rougher type of country was encountered, being slightly rolling and more wooded. Progressing further Eastward, the terrain changed rapidly, becoming heavily wooded and rough—impossible for landing except on the many frozen snow-covered lakes.

Coincident with the rough country came snow, forcing the fliers down to about 400 ft. above the ground. After covering approximately 150 miles of this country, the Ottawa River was reached. The flight turned Southward and ran into snow again. At Ottawa the fliers saw the black circle on the snow of the river, just South of the inter-provincial bridge, in front of the City. This had been placed there as a guide.

Although the time taken for the actual flight from Selfridge Field to Ottawa, a distance of 430 miles, was only 2 hr., 55 min., it required about fifteen minutes to land the twelve Curtiss Hawks, equipped with skis, on the snow of the Ottawa River. The snow covering on the ice was about twenty inches in depth, but all planes landed safely, with the exception of a few broken ruddars, caused by the sharp tail skids with which the planes were equipped cutting through the snow crust and allowing the unprotected rudders to come into contact with the hard packed snow. This showed the necessity for providing a special tail skid with sufficient surface to prevent the tails from sinking in the snow when taking-off and landing. The tail skids of all the pursuits and the rudders of five of them were damaged in landing, owing to the thick-

ness of the snow. The Canadian Air Force mechanics worked all night brazing and welding fittings for the tail skids and repairing the broken rudders.

After making arrangements for the draining of water and oil by the efficient mechanics of the Canadian Air Force, the fliers were given a luncheon by the Rotary Club of Ottawa. Slight engine trouble delayed the departure of the flight from Ottawa. This was due to the extremely cold weather, the trouble, however, was overcome, with the aid of a portable steam heating plant, which is used in Ottawa, during Winter months, to thaw out fire plugs. The flight started in formation a little over an hour behind schedule. On leaving Ottawa at 1.10 p.m., Jan. 25, the planes encountered a light snow squall, but soon ran into beautiful skies and weather again.

From Vendover to Cartierville, which is the landing field near Montreal, the planes encountered a series of snow storms, but landed at the latter city at 3.10 p.m. Jan. 26. The fliers were met by representatives of the Royal Canadian Air Force, the Pro Mayor of Montreal, and representatives of the U. S. Consular Service, who welcomed them for the City of Montreal.

After a certain amount of trouble owing to the very extreme weather conditions, the planes continued to Buffalo, N. Y. Leaving at 1.00 p.m. Jan. 28, all but three of the Hawks continued to Buffalo, via Fisher's Landing, where the night was spent, Buffalo being reached at 4.10 p.m. Jan. 29. The flight from Fisher's Landing occupied 1 hr., 45 min. The landing area selected was on the ice, within the breakwater, at the mouth of the Buffalo River. The fliers remained in Buffalo over night, after preparing their planes for the flight to Selfridge Field the next day. In the meantime the other three planes were obliged to stay at Montreal owing to the weather. The nine planes left Buffalo at 11.15 a.m., Jan. 30. The 200 mile journey required 2 hr., 55 min. of flying against a heavy West wind. A landing was made at Anchor Bay, of St. Clair Lake, at 2.10 p.m., Jan. 30. The three planes which had remained at Montreal encountered several difficulties all attributable to the extremely cold weather into which the flight had run on the return trip, one landing at Selfridge Field at 6.00 p.m., Jan. 30 and the other two on Feb. 1.

The maneuvers proved highly successful and a great deal was learned concerning squadron operations of pursuit planes. The fliers met adverse weather throughout the entire flight.

de Pinedo Flight Starts

Twenty-four hours after the start of the flight from Italy to South America, Comdr. Francesco de Pinedo and his crew had covered approximately 2,200 miles. Starting from Cagliari, Sardinia, on Feb. 13, in his Savoia seaplane "Santa Maria," he flew to Rabat, Morocco, a distance of 1,200 miles, and from this point to Villa Cisneros, situated in Spanish territory in West Africa. The plane covered the second leg at an average speed of more than 100 m.p.h. At 8.15 a.m. on Feb. 15, the plane arrived at Bolama, Portuguese Guinea, having made a night flight of 1,000 miles, at an average speed of 104 m.p.h.

Courtesy The New York Times

A map of de Pinedos flight

The next stage of the flight will be across the Atlantic, a distance of 1,875 miles.

Accompanying Commander de Pinedo are Capt. Carlo Delprete and Witzale Zacchatti, a mechanic. Sergeant Deghinocenti, who started on the flight from Sardinia, will not accompany the fliers across the Atlantic, his weight to be replaced by additional supplies.

Commander de Pinedo had asked the Italian Government to provide no definite schema of protection for the fliers from ships along the route, wishing to make the flight a real contest against natural conditions with minimum preparation. This request has been carried out, although all vessels known to be in the vicinity of the route have been asked by radio to give assistance if necessary.

The fliers will span four continents and make a trip comprising 23,000 miles. Tentative plans call also for the following stops: New Orleans, La., Galveston, Tex., Hot Springs, Ark., San Diego, Cal., San Francisco, Cal., Seattle, Wash., Malta, Mont., Chicago, Ill., and New York City. This would make an additional 6,750 miles.

The flight has been divided into three stages, the itinerary of which is as follows:

First stage: Holmas, Melodia, Morocco, near Rabat, Villa Cisneros, Rio de Oro, Bolama, Portuguese Guinea, Port Natal, Bahia and Rio de Janeiro, all in Brazil, and then to Buenos Aires.

Second stage: Buenos Aires, Asuncion, Paraguay, Corumba, Brazil, Guajara Mirim, Manaos and Para, all in Brazil, Georgetown, British Guiana, Curacao, Dutch West Indies, Kingstown, Jamaica, Havana, Cuba, and thence to New Orleans, St. Louis, Chicago and New York.

Third stage: the return voyage will be from New York to Placentia, N. F., thence to Horta in the Azores, Lisbon and home.

The first stage will be strictly followed, but after arriving at Buenos Aires, Commander de Pinedo may make a side trip to Valdivia, Chile, thence to Valparaiso, and then back to Buenos Aires, a distance of about 2,610 miles.

Pilots of the First Pursuit Group photographed just before leaving Selfridge Field, Mich. Left to right, Lieuts. L. C. Mallory, L. C. Elliott, L. H. Redreck, Major Lanphier, Lieuts. J. J. Williams, G. G. Finch, Saint Clair Streett, F. C. Crowley, J. G. Hopkins.

L. D. Gardner Speaks in Washington

On Tuesday, February 15, Major Lester D. Gardner, Publisher of AVIATION, gave a talk illustrated with colored lantern slides on "Twenty-one Thousand Miles over the Airways of Europe." The lecture was given at the invitation of the District of Columbia Chapter of the National Aeronautic Association in the lecture hall of the National Museum and Porter Adams, President of the N.A.A. presided. Several hundred members of the N.A.A. and guests attended.

In addition to the members of the District of Columbia Chapter of the N.A.A., among those who accepted invitations to Major Gardner's talk were: Gen. Herbert M. Lord, Director of the Budget, Hon. F. Trubee Davison, Asst. Secretary of War for Aeronautics, Hon. Edward P. Warner, Asst. Sec. of the Navy for Aeronautics; Congressman Thomas S. Butler, chairman, Naval Affairs Committee of the House, Franklin L. Fisher, Chief Illustrations Division, National Geographic Society; Capt. Emory S. Land, Asst. Chief, Bureau of Aeronautics, Navy Dept.; Comdr. Silvio Scaroni, Royal Italian Air Force, Air Attaché, Italian Embassy; Congressman W. Frank James, Military Affairs Committee of the House; Hon. W. Irving Glover, 2nd Asst. Postmaster General; Congressman Allen Treadway, Ways and Means Committee of the House; Edward T. Clark, Sec. to President Coolidge; Admiral R. H. Leigh, Chief, Bureau of Navigation, Navy Dept.; Lieut. Chikao Yamamoto, Asst. Air Attaché for Aeronautics, Imperial Japanese Navy; Senator Daniel F. Steck, of Iowa, Congressman A. Piatt Andrew, Naval Affairs Committee; Dr. George W. Lewis, John F. Victory, Starr Truscott, National Advisory Committee for Aeronautics; Major Carl A. Spatz, Army Air Corps; Comdr. John T. Stapler, Navy; Capt. Otto G. Trunk, Bolling Field; Major Frederick L. Martin, Commanding Officer, Bolling Field; Major Gerald C. Brant, Air Corps representative, Asst. Sec. of War; Lieut. Comdr. Bruce Leighton, Aide to Asst. Sec. of the Navy; Mr. Henry A. Berliner, President of the D.C. Chapter of the N.A.A.; Capt. H. C. Richardson, Chief of Design Section, Bureau of Aeronautics; Major Gen. Dennis E. Nolan, Former Deputy Chief of Staff, U.S. Army; Major S. W. Fitzgerald, Army Air Corps; Major Walter G. Kilner, Executive, Office Chief of Air Corps; Lieut. Col. Ira E. Fravel, Army War College; Thomas F. Hamilton, Governor of the N.A.A. for the State of Wisconsin; Major Henry W. Harms, Capt. Ralph A. Koch, Bureau of Navigation; Col. J. Shaffer, G. R. Beck, Capt. Halbert Payne, Dr. John H. Dellinger, Chief Radio Laboratory, Bureau of Standards; Arthur Halsted, Bureau of Standards; James D. Summers, Airways Extension Division, Dept. of Commerce; Major E. L. Jones, Chief Information Section, Aeronautics Branch, Dept. of Commerce; Col. C. deF. Chandler, U.S. Air Corps, Major W. H. Garrison, retired; Capt. I. H. Edwards, Asst. Executive, Air Corps; Capt. T. J. Hanlay, Office Asst. Secretary of War.

P. & A. Photo.

Lester D. Gardner (right) discussing his proposed Round-the-World trip in 24 days with Porter Adams (left), president of the N.A.A., and Carl Schory, secretary of the Contest Committee, N.A.A.

Baron L. d'Orcy Dies

On Feb. 12, Baron Ladislas d'Orcy, former Editor of AVIATION, died in Paris after a long and painful illness. The funeral was held at the Church of St. Jean the Baptist in Neuilly, near Paris. His many American friends will learn of his passing with the sincerest sympathy.

Baron d'Orcy was born at Fiume in the Free State of Fiume, March 27, 1888. He was the son of Emile and Charlotte de Seckendorff d'Orcy. After attending the High School at Fiume, he took a course in aeronautical engineering at the Sorbonne. Since 1911, he has been connected with various aeronautical papers in Paris and the United States. In 1911, he became contributing Editor of Aircraft; in 1912, he was with Aero and Hydro in Chicago; in 1914, he was with Aerial Age and Flying; from 1918 until 1924 he was Editor of AVIATION. During the War he was a volunteer in the Foreign Legion of France and was honorably discharged for physical disability.

Ladislas d'Orcy

Until the War, Baron d'Orcy was an Austrian subject. Later he took out his citizen's papers in the United States and dropped his title of Baron.

After a slight accident to his knee, while flying to one of the Pulitzer Trophy race meets, the injury became worse and he decided to go to Europe where he would be near his mother. He spent some months at the American Hospital at Neuilly near Paris and, in the Summer of 1926, went to Leysin, Switzerland, a sanitarium for tubercular patients. There, his leg was amputated and later, when seen in Paris, he appeared to be well on the road to recovery. He became executive secretary of the International League of Aviators, of which Clifford B. Harmon is president. His condition became worse and his death came suddenly.

Baron d'Orcy was the foundar and organizer of the Quiet Birdmen, an organization that has spread all over the United States. He acted as an official at most of the principal race meets when he was in this country. This short notice will be supplemented later with an editorial appreciation.

Airplane Landing Field Lighting

Specialized Equipment Now Developed For Airways.

By OSCAR WERNER
Illuminating Engineering Department Westinghouse Electric and Manufacturing Co

THE INTRODUCTION of night flying on a commercial basis has created several new problems, particularly those that are concerned with illumination. The pilot flies from one to several thousand feet above the ground in utter darkness and he has to rely for his course on a well lighted airway, and for his landing on a well lighted landing field. The lighting of airways is a subject of its own and here we are more particularly concerned with the lighting of landing fields.

Lighting Equipment

Landing fields are equipped with several types of lighting depending on the purposes for which they are intended. Taken in the order in which the pilot approaches the landing field, they are:

The Revolving Beacon which indicates to the flier the location of the landing field when he is still a considerable distance away.

The Boundary lights which must clearly show to the flier the outline of the field when he is approaching it.

The Marker lights which give him the most favorable points of approach.

The lights illuminating the Wind Cone, which indicates to him the prevailing direction of the wind against which he has to land.

The Obstruction lights which warn him of any dangerous obstacles which he has to clear.

The Landing Field flood lights which illuminate that portion of the landing field proper on which the pilot makes his landing.

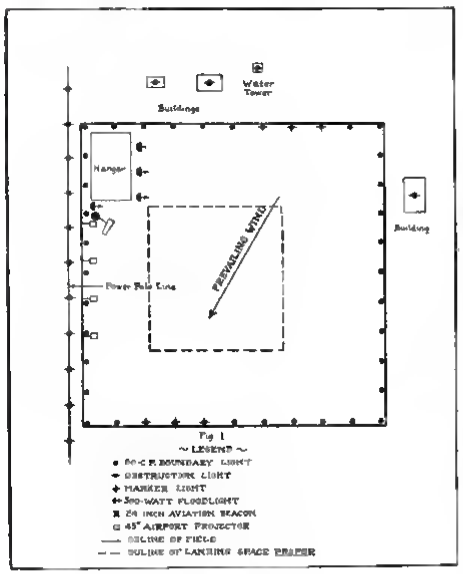


Fig. 1

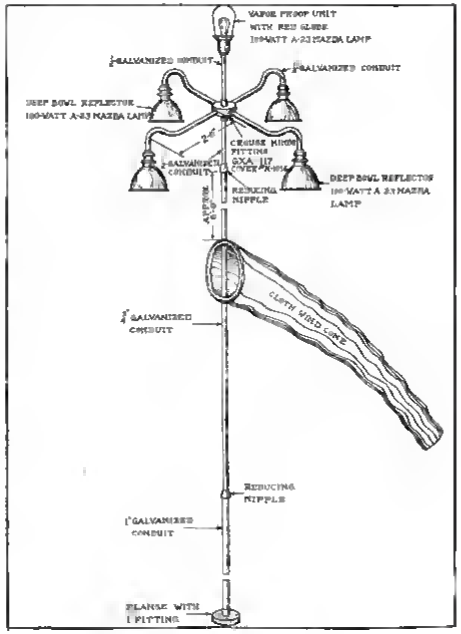


Fig. 2

The local lighting used for illuminating his final goal, the hangars and the approach thereto.

It is common practice to use white lights for illumination purposes, green lights for most favorable approach and red lights for obstacles and danger. The landing field lights with which the airplane itself is equipped, are purposely ignored here, as due to the nature of their construction, their light weight and the heavy shocks they are sometimes subjected to in landing, they should be used only as auxiliary or emergency equipment.

Fig. 1 is a plan view of a typical landing field showing the position of the various lighting units.

The Revolving Beacon

The revolving beacon is essentially a 1000-watt projector sending out a beam of about 5 deg. spread. The projector is revolved by means of a small electric motor about six times per minute in a horizontal plane, causing the beam to sweep the horizon. The beam is tilted slightly upward so that it strikes the approaching pilot's eye. The beacon is usually mounted on one of the hangars or in close proximity thereto at a height of approximately 50 ft. above ground level.

For boundary lights, vapor-proof fixtures are usually employed. They have upwardly pointing lamps protected by heavy glass globes and are water-tight and dust-proof. A heavy wire cage over the glass globe adds further protection.

These units are mounted at a height of about 3 ft. above the ground level and are usually spaced at 200 ft. intervals all around the field.

The marker lights differ from the boundary lights only in that the globe which covers the lamp is of green glass, thus throwing off a green light. They are used in pairs or in sets of three in place of the boundary lights to indicate the most favorable approach.

The wind cone lights are provided to outline clearly the wind cone, and advise the flier of the direction of the wind. They should give a fairly high intensity of illumination. For this purpose the units shown diagrammatically in Fig. 2, have proved quite satisfactory.

The obstruction lights differ from the boundary lights only in that the globe is of ruby colored glass. They should be mounted on all high structures such as water towers, trees, etc., and high buildings within the field or in close proximity thereto in order to lessen the danger of collision on the part of the pilot approaching the field.

Flood Lights

The landing field flood lights are a more recent development. They are of the greatest importance, as the safety of pilot and plane is markedly dependent thereon. They must be mounted outside of the landing field proper and their light must have sufficient penetration to illuminate an area of from 700 ft. to 1000 ft. in width and 1000 ft. to 1500 ft. in length located toward the center of the field. They also must be mounted low so as not to interfere with an airplane in leveling off. They must be non-glaring so that, if the flier has to fly into them because of prevailing wind conditions, he is not blinded by the beam. Their light should be fairly uniform in intensity and not too bright. A pilot coming out of the dark cannot quickly enough adjust his eyes to a bright light, and, in fact, where exceedingly bright lights are used, fliers prefer to land in the darker portion of the illuminated area.

There is another important consideration. An airplane landing field may have been planned for light traffic with only one airplane landing at a time and with considerable interval between landings. In a very short space of time, the conditions may change and the traffic may become quite heavy. This greater traffic will need a greater area of illumination. It is important, therefore, that the method of lighting be such that the lighted area can be increased readily and at minimum expense. All these considerations would lead to the use of several smaller units in preference to a large concentrated unit. With several smaller units the glare, if any, is split up and the illumination is more uniform, due to the fact that with proper spacing the beams in the distance overlap, as is plainly shown in Fig. 3. Furthermore, the lights can be adjusted to follow the strip of ground in front of them and, thus, fields which are not entirely level can be readily illuminated by individual adjustment of the units. And if some time after installation it is found that the illumination should be increased either in intensity or in area, it is easy to add to the number of units and space them at shorter intervals. Another important factor is the greater security of operation obtained by the use of several units. If the lamp in one of these units should fail at a critical moment, the other units will still give sufficient light to allow the pilot to make a safe landing.

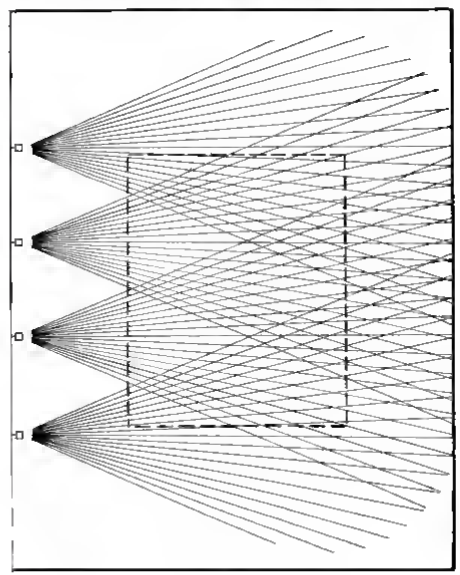


Fig. 3

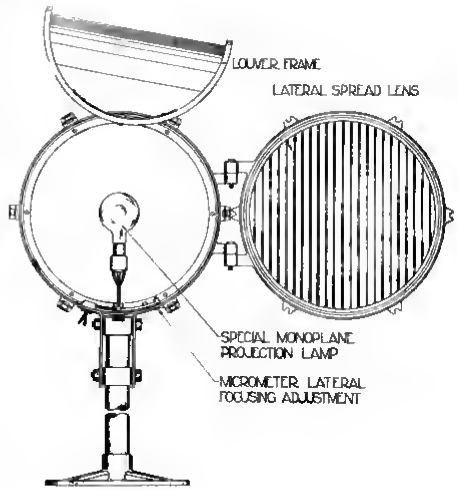


Fig. 4

Fig. 4 shows a typical unit of this type, characterized by a 24 inch reflector with a long focal distance so as to produce a very concentrated beam. This beam is fanned out by a spread lens which produces a horizontal divergence of about 45 deg. A system of louvers is provided to intercept all upwardly directed rays. Thus, with the unit placed slightly below the height of the average pilot's eyes and tilted forward so that the upper rays are slightly below horizontal, practically no rays will hit the eyes of the flier landing on the field, and the glare which has proved so objectionable heretofore is practically eliminated. The flier can safely land against the lights if the direction of the wind forces him to do so. The unit is entirely dust-proof and rain-proof.

Three to six of these lights are usually placed along the center of one of the boundary lines most nearly parallel to the direction of the prevailing wind. They are usually spaced 300 ft. to 350 ft. apart, their exact spacing and number depending on local conditions.

The local lighting of the hangars is best accomplished by the industrial reflectors, such as the RLM Dome type mounted

at sufficient height on top of the hangars to illuminate their roofs. Angle reflectors overhanging the edges of the roofs may be used to illuminate the sides of the buildings. Floodlight projectors of from 500 to 1000 watt capacity are mounted at the front edge of the hangars to illuminate the space immediately in front of them and to facilitate guiding the airplane into the hangar.

Industrial lighting fixtures or standard floodlight projectors are also used for the illumination of Administration Buildings, Supply Depots and the like.

In isolated locations where power from a central station may not be available, small generating sets similar to those used for farm lighting are employed to supply the necessary electric current.

These described methods may be said to cover the latest practice in the lighting of airplane landing fields. They are the outcome of several years of costly experimenting and they all have been adopted as standard practice by the Army Air Corps. With slight modifications they are applicable to any landing field irrespective of size, outline or contour.

The Student's Point of View

The following letter has been received from Denver, Colo. — EDITOR.

Dere Aviation:

Guess you'll remember Jack Flipper, the plum cultus ortber that rote you the official dope on the Mile High Air Rodeo at Denver.

Down in Pueblo where all hands hauled in on their winged cayuses for last money of the meet, J. McInaney of the Alexander outfit said he could fit my crooked legs into a pilot's seat or bust a prop. Took advantage of my whoopin' enthusiasm, in other words.

Well, to hoh a long tale, I sold my cayuse, Hortense, and along with her, the silver mounted saddle they had blessed me with at Cheyenne Days and warmed the cushions into Denver, headquarters of his outfit. I laid what wuz left of Hortense on McInaney's desk and received in return a note to the chief pilot to start me going.

As I spanked my tale out to their flying range I began to yearn for the smell of Hortense and my knees took on a wobble that aint natcheral. I have always rid aaything they have pushed out of the corral by the thot of hooking my spurs into a star sure got a raise out of my back hair.

But I kept agoin' and eventually handed my last will and testimony to the young feller they called the chief pilot.

He started telling me what was what on the Eaglerock and where it was located and wound up by asking me if I new what made an airplane fly, along with a lot of other questions. If I could of answered them I'd have applied for a instructor job instead of standing there on one leg like a mail order cowpuncher.

Well, some of my answers he got a wide kick out of, so figured I'd made a right good start anyway by getting the teacher in proper humor.

"We'll go up a few minutes today" sez he, "You will just ride as passanger to get acclimated."

I didn't know what that last crack meant but do now. I got acclimated all right, but at that it warn't nearly as bad as I expected, in fac I never moved until we got the wheels back on the ground. I couldn't.

Found out we wuz up fifteen minutes and it sure didn't seem more than a couple of hours. He said that will be all for the first day. I couldn't figure that coz when I learned to ride a hoss, I went out at daylight and stayed with the mare until the sun dipped below the hills. Took most of the nite to straighten my joints out in the bunk but I learnt to ride. Guess he knows his rocker arms tho, as I heard one of the mechanics say today:

Writ on my 2nd day of training:

Whew! Them things are harder to steer than an outlaw brone. It looked so darn easy from the ground. Instructor sez, showing me the stick, "If you want to go up, pull back on this, if you want to go down, push ahead, if you want the right wing down, push the stick to the right, etc., etc."

We got up a bit and I got my eyes focused on a few things in particular and my helmet off the back of my neck when he shook the stick and I grabbed it. He had told me to keep the nose on the horizon, which is something else we didn't have on the ranch. I'm learning more than flying—learning a lot of new words to high hat the hands with back home.

Well, I couldn't keep that nose straight at all so we clum down and he left and said he didn't expect me to, that everybody had the same trouble at first, which wuz sure white of him. Gosh, I wish I could handle the lines like that hombre can.

Will let you know now and then how I'm diying out behind the ears so's you'll find it easier to keep your brone from crow-hopping when they put a stick on your hand—wich they'll do some day and I'll bet a new Stetson on that.

Your skyriding friend,

Jack Flipper

The Glenn L. Martin T3M-1 Navy three-purpose plane

The K-8 Automatic Recording Aerial Camera

Aerial Camera Which Makes Complete Instantaneous Automatic Record Developed By Fairchild and Air Corps Engineers—The Result of Years Study—Automatic Camera Has Wide Military Value.

The Fairchild M-1 photographic plane (Wright Whirlwind engine)

AN AERIAL camera which military authorities of the United States have proclaimed as the most valuable, fool proof and reliable fully automatic camera in the World has been placed in production by the Fairchild Aerial Camera Corp., of New York, a subsidiary of the Fairchild Aviation Corp.

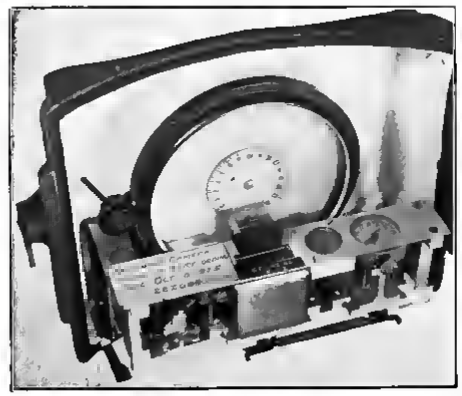
This camera, which is officially known as the Fairchild Military Fully Automatic Recording Aerial Camera Type K-8, is the result of five years' study by officials of the camera company and the Air Corps to produce a fully automatic apparatus for the making of aerial maps at all altitudes.

The camera does what no other camera can do at this time. In a margin of only ¼ in. by 1½ in. on the outside edge of the 7 in. by 9 in. negative it automatically registers the hour, minute and second the photograph was taken, the level condition of the camera, the altitude at which the photograph was taken, the number of exposures, the focal length of the lens, and the day, month, year, in addition to particulars of the area photographed. A remarkable feature about this automatic registration is that all this data can be plainly read by the naked eye.

Sherman M. Fairchild, president of the aerial camera company which bears his name, is responsible for many of the features incorporated in this newest development which enables the United States to maintain its high standard in aerial photographic work. Observers who have tested the Type K-8 camera state that it is almost human in its operation because of the many things it does automatically.

It is in time of war that this camera will undoubtedly prove extraordinarily successful. It can be placed back of the single cockpit of a pursuit plane directly behind the pilot and adjusted in the fuselage so that photographs may be taken without any obstruction being in the way. Due to the fact that it is placed in a pursuit plane and hidden from the enemies' view, it will be practically impossible for the pilot of a hostile attacking plane to know whether his opponent is able to take pictures as well as fight. For such work the operation is simple. The pilot, by instantaneously setting the dial of the intervalometer (which is located on the instrument board), sets the entire apparatus in motion and it will automatically map an area of 180 square miles at an altitude of 15,000 ft., with a focal length lens of 12 in., or a strip 90 miles long, 2 miles wide, allowing 50 per cent overlap.

In the event that the camera is placed in the rear cockpit of an observation plane, the observer can change the magazine in three seconds, installing an extra one which will cover double the area without gaps. The amount of area covered is governed by the number of spare magazines taken on the flight. The developed roll of film clearly registers an undisputed record of the flight, eliminates waiting for hand written data and personnel errors, saves valuable time and provides a positive and permanent record for military intelligence files.



Recording apparatus of the K-8 camera mounted on the special cone

Speed a Feature

Tests have shown that military maps can be produced in less than one-third of the time as compared with any other apparatus. The engineers making the maps have all the information on every print which is positive and accurate, and they do not have to wait to refer to any written date turned in by either the pilot or observer. Under the old method, such data was necessary for the making of maps to scale.

In a series of exhaustive tests conducted by the U. S. Air Corps at altitudes and temperatures varying from 90 deg. above to 20 deg. below zero it was found that the camera rated 100 per cent.

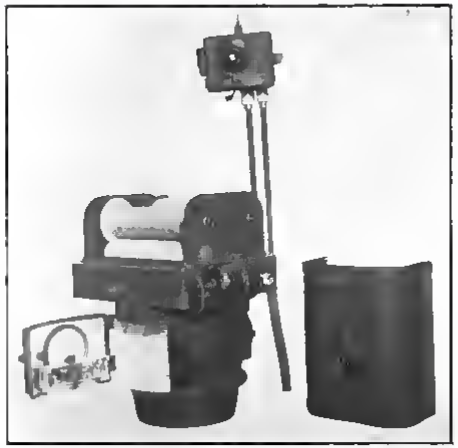
The development of this camera and its really remarkable performance are typical of the close study which has been given to air photography in this country. These products of the Fairchild company have been adopted as official by the U. S. Army Air Corps and the U. S. Naval Air Service, the Canadian Royal Air Force, the Brazilian Air Service and by other foreign governments.

Aside from military developments Fairchild aerial cameras are responsible for the bringing of commercial aerial photography to its present active state. In the latter part of 1924 and the first few months of 1925 the Fairchild Aerial Camera Corp. successfully completed the World's greatest city aerial photographic mapping project, that of photographing Greater New York. About 3000 miles were flown and the entire greater city of five boroughs: Manhattan, Bronx, Queens, Brooklyn and Richmond, a territory of approximately 625 square miles, was mapped. The camera used exclusively on this work was the Fairchild Automatic Aerial Camera with the "between the lens" shutter. Some of the work for the map mosaic was done at an altitude of 16,000 ft. The successful completion of this contract brought so much business to the Fairchild company that branches were opened, not only in the United States, but also in Canada. The officers in the South Western section of the United States secured contracts in Mexico, and thus aerial cameras were used very successfully below the Rio Grande.

Earlier Experience

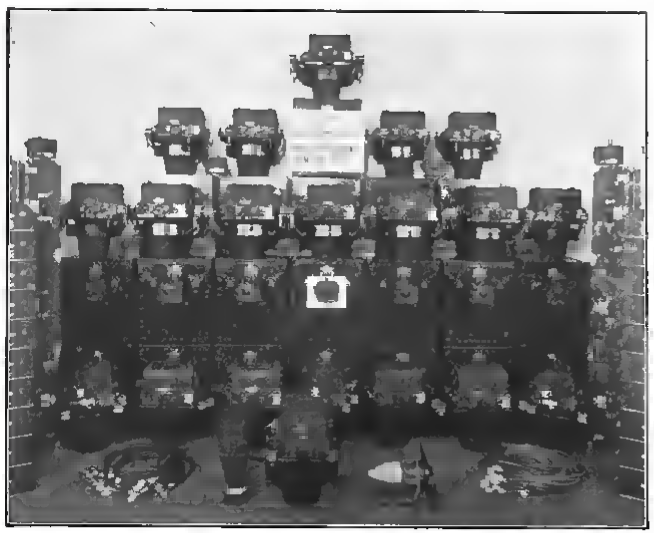
In developing the new K-8 fully automatic camera, it was found that the experience gained by users of earlier types was extremely valuable. Capt. A. W. Stevens, U. S. Army Air Corps photographer, used the Fairchild camera for his work in the tropics in connection with the Dr. Alexander Hamilton Rice Expedition to discover the source of the Amazon River. He reported that the camera was not affected by the terrific tropical heat and functioned perfectly at all times. A similar report was made by Capt. G. H. Wilkins under very different conditions. Captain Wilkins was the first man to photograph from the air that vast region in the Arctic between Nome and Pt. Barrow. The camera was used in temperatures as low as 50 deg. below zero and functioned with the same degree of reliability as when working under normal conditions.

When Captain Stevens, in company with Lieutenant Macready, ascended above 32,000 ft. several years ago and established an unofficial two man World's altitude record, he found time at the peak of the climb to take what is believed to be the World's highest photograph. It showed the entire city of Dayton, Ohio, an area of 19 square miles, on one exposure. A Fairchild aerial camera was used on this epoch making flight, and also for the high altitude night photographs under the direction of Lieut. Geo. W. Goddard U. S. Air Corps.



The recording cone on the K-8 Camera. The photo shows the camera with the magazine cover removed. The intervalometer and recording apparatus will be seen on the recording cone.

The K-8 is an outstanding achievement of engineering design and accurate workmanship. The life of these cameras has not as yet been determined. Due to the development of this and other types, modern business in America is today using aerial photography on a larger scale than anywhere else in the World. Aerial mosaic photographic maps are used in city planning, zonings, traffic problems, water shed and hydraulic forestry, light and power right of way, timber estimates, tax assessments, etc. Advertising authorities have found that aerial photographs attract unusual attention. Real estate operators use them for visualizing locations and development of property.



A battery of Fairchild military cameras

The general details of the earlier types of Fairchild aerial cameras are well known and need no further description here. The specifications of the K-8 cameras however, will be found of interest.

It is of the single lens type, fully automatic in its functioning, and can be equipped to accommodate lenses of different focal lengths ranging from 21 cm. to 50 cm. The speeds are adjustable from 1/50th of a sec., 1/100th of a sec. and 1/150th of a sec. The efficiency at the lowest speed is approximately 80 per cent.

The camera body contains the mechanism for setting and tripping the shutter, and for driving the film driving mechanism. The two supporting trunnion arms, on which the camera swings, pass through the center of gravity when the camera is fully loaded. The camera body carries an automatically operated counter, which is conveniently placed for observing the number of exposures made during any photographic mission. The level is of the circular type, conveniently placed

The cone is equipped with a recording device, which photographs at the base of each picture all necessary data the instant the shutter is tripped, namely: the exact focal length of the lens, serial number of the camera, number of exposures taken, altitude, level of the camera, time exposure was made and any written data the photographer desires to put on a card, 7/8 in. wide by 2 in. long. All the above information is recorded on the negative in a space only 1/4 in. high by 1 1/2 in. wide, located at the base center of each picture. This recording device is composed of a specially designed altimeter, a standard five-figure counter, a spirit level registering by minute degree divisions over a field of ten degrees in any direction from the axis. A small, reliable watch, having hands for showing the hour, minute and second, is also embodied. A white card 7/8 in. by 2 in., on which any data necessary may be written, and an etched plate giving the camera serial number and the exact focal length of the lens, is embodied. These instruments are placed behind an escutcheon plate. The counter is operated by a very efficient and compact solenoid which also makes contact at the instant of tripping for lighting the 4 candle-power, 6 volt bulbs which illuminate the instruments for photographing. The instrument chamber is located on the side of the cone and photographed through a chamber to the magazine proper with a 32 mm. F4.5 Micro Tessar lens. The recording device is located on a hinged door in the cone. This door is locked when climb and instantaneously opened by pressing a button. All the instruments are readily accessible for setting or replacement. The cone is equipped with a compartment for carrying a spare filter and filter holder.

British Stamps Required on American Air Mail

The postal administration of Great Britain has announced that on letters mailed in Great Britain, only British postage stamps are recognized in prepayment of fees required for onward transmission by the United States Air Mail Service.

Take-Off and Landing Characteristics

A comparison of the take-off and landing characteristics of a number of service airplanes forms the subject of Report No. 249, compiled by Thomas Carroll for the National Advisory Committee for Aeronautics.

This investigation, which is a continuation of Technical Report No. 154, "A Study of Taking Off and Landing an Airplane", follows very closely the earlier methods and covers a number of service airplanes, whereas the previous report covered but one, the JN-4.

In addition to the air speed, acceleration, and control positions as given in Report No. 154, information is here given regarding the distance run and the ground speed for the various airplanes during the two maneuvers.

A copy of the full report may be obtained upon request from the National Advisory Committee for Aeronautics.

Germany-England Seaplane Service

There is a possibility that a German seaplane service will be put into operation during the present year between Kiel and the Thames Estuary. Twin-engined Dornier Wal seaplanes will be used.

Industrial Directory for Soviet Russia

An industrial compendium of the United States, consisting of 1076 pages with 2800 illustrations, has been prepared by the Amtorg Trading Corporation, of New York City, for distribution in Soviet Russia.

Edward P. Warner, Assistant Secretary of the Navy for Aeronautics, has contributed an article on aviation, and among the companies listed are Pratt & Whitney Company, of Hartford, the parent body of the Pratt & Whitney Aircraft Co., and the Wright Aeronautical Corporation, of Paterson, N. J.

An aerial photograph taken with the new K-8 Automatic Recording Camera. The reproduction is about two thirds full size. Note the record made automatically on the bottom edge of the picture an enlargement of which record is shown in the insert. On the left is the date, in the middle, top, the altitude in feet, below it the number of the exposure and below again, the focal length and lens number. Next towards the right is the level gauge and finally the time record in hours, minutes and seconds.

The Sellers Lightplane

Early Glider Experiments Have Led to the Adoption of New Principles to Simplify Control And Add to Safety.

By M. B. SELLERS

BEFORE DESCRIBING this plane I want to say a few words about lightplanes in general and about my previous experiments. Opinions differ as to what constitutes a "lightplane", and as to what the public would most readily buy. Personally, I prefer a one-man small, low-powered plane, with a landing speed around 30 m.p.h., a high speed of 70 m.p.h. and weight around 200 lb., easy to fly and comfortable, good vision, nearly stall proof and hard to spin. The plane should not be capable of being stunted and should almost fly itself. Such a plane would be cheap to buy, easy to house, and, in my opinion, would be safe for the novice to fly. Many people with whom I have talked, who would not consider a large high-powered plane, are attracted by a plane of this kind. Of course this kind of plane is primarily for sport and would not give the maximum service in pure transportation.

The experiments which led to my building the present plane commenced in 1903, when I built a Lilienthal glider, but found it hard to balance and made only very short glides with it. I then tried, with models, to find a more stable design; and, to lessen the movement of the centre of pressure, I tried narrow planes arranged in various ways.

In August, 1903, I built a 3 ft. wind tunnel and tested various sections which had been suggested by Phillips and others. The results of these tests were given in a paper read before the Aero Congress of the St. Louis Exposition. I also tested various arrangements of planes. These experiments showed that stepped surfaces with the highest in front were more efficient than when placed tandem or directly superposed. The tests of the models showed also that stepped quadruplanes or triplanes stalled less easily and recovered normal glide more quickly than monoplanes or superposed biplanes. Later on, I built, among others, a full sized quadruplane glider, and easily made long glides with it.

Quadruplane Glider

In 1908, I built a larger quadruplane glider, and, in the Fall, fitted it with a three-wheel chassis, installed a Du Theil Chalmers French engine, and made my first trials. In the Summer of 1919, I made further trials and succeeded in making short flights near the ground taking off from a smooth inclined runway.

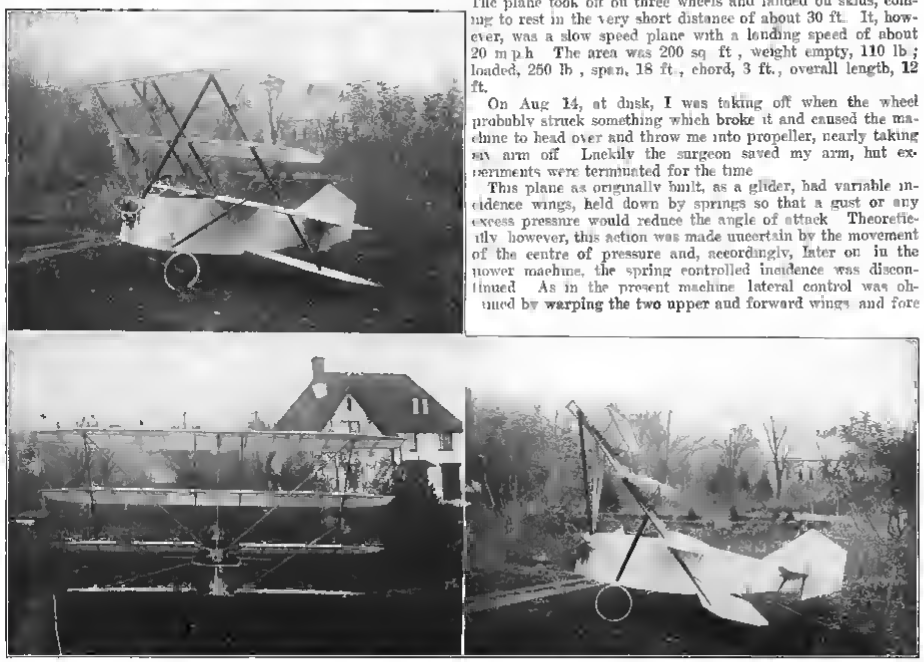
The engine was a 3 in. bore by 3 in. stroke horizontally opposed twin-cylinder unit, run at 1300 to 1400 r.p.m. and gave 5 hp. at the brake. I then had an engine built by Carl Bates of Chicago. This was a 3 3/5 in. bore 3 3/5 in. stroke horizontally opposed unit and gave 8 hp.

After some experimenting and delays, I made a number of longer flights with this plane in which I was able to climb at a very fair rate.

Later on, I flew the plane at the Aero Society field on Staten Island and was able to take off with a very short run. The plane took off on three wheels and landed on skids, coming to rest in the very short distance of about 30 ft. It, however, was a slow speed plane with a landing speed of about 20 m.p.h. The area was 200 sq. ft., weight empty, 110 lb.; loaded, 250 lb., span, 18 ft., chord, 3 ft., overall length, 12 ft.

On Aug. 14, at dusk, I was taking off when the wheel probably struck something which broke it and caused the machine to head over and throw me into propeller, nearly taking an arm off. Luckily the surgeon saved my arm, but experiments were terminated for the time.

This plane as originally built, as a glider, had variable incidence wings, held down by springs so that a gust or any excess pressure would reduce the angle of attack. Theoretically, however, this action was made uncertain by the movement of the centre of pressure and, accordingly, later on in the power machine, the spring controlled incidence was discontinued. As in the present machine, lateral control was obtained by warping the two upper and forward wings and fore and aft control was secured by changing the incidence of the entire wing.



Three views of the Sellers Quadruplane.

Wishing to continue experiments with this type of machine and to bring the design up to date, I built the present machine which was finished in the Winter of 1925-26, but not tried until the Summer.

It is a stepped quadruplane with a span of 16 ft., chord, 2½ ft., overall length, 12 ft., area, about 140 lb.; and weight empty, about 160 lb. The wings have "I" beam spruce spars and spruce ribs, linen covered. For the purpose of control, the two upper and forward wings are made tiltable and are hinged at the front spar to the inclined struts, and supported at the rear spar by wing props, which slide in guides on the struts and serve to limit the tilt of the wing. The wings are pressed upward by springs. In the machine, however, the centre of pressure is, at all angles, far enough back from the front spar to raise the wing to a negative angle.

Controls

The control stick mechanism is connected with the wing props by cables, so that pulling stick back pulls down the whole rear spar, increasing angle of attack of wing, while pushing the stick forward slackens the cables and diminishes angle. Pushing the stick to the right increases the angle of the left wing and diminishes the angle of the right wing, and vice versa. The pilot moves the stick in the same way as he would with the conventional standard stick control. There is no elevator in the rear as these wings take the place of both elevator and ailerons.

It has been objected that it would be more simple to use a rear elevator, but in that case it would still be necessary to warp the wings or use ailerons for lateral control, and it is thought this type of control would be more effective at low speeds (near a stall). The bracing, except for two wires, is by struts.

The fuselage has spruce longerons and plywood gussets and straps. The front section is covered with aluminum and rest with linen. The chassis comprises a continuous steel tube, bent to form three Vee-shaped members. The lower apices of these are connected by a transverse tube. The axle is fastened by shock absorber cord in the usual manner. The wheels are 20 in. motorcycle type. The seat is elastically supported so that it yields under severe stress in landing. This is of advantage where the pilot's weight is a large part of the total weight.

The first engine tried was my Du Theil Chalmers 3 in. by 3 in., which I had used in 1908. This we could not get to run properly, and I then installed my Bates engine and the machine took off at the first trial, even with the tail skid dragging. On the last trials the plane flew for quite a while, climbing and making turns at low altitude. The engine was not doing its best and the plane seemed to be tail heavy.

The pilot Mr. McMullin of the Curtiss Company, reported that the plane seemed very stable and easy to fly. Further trials will be made in the Spring.

The chief characteristics of the plane are:

Span	16 ft.
Chord	2½ ft.
Length overall	12 ft.
Area	140 ft.
Weight empty	160 lb.
Weight loaded	310 lb.
Landing speed	28 m.p.h.
Max. calculated speed	60 m.p.h.

The Bates engine is a twin-cylinder horizontally opposed unit of 3⅝ in. bore by 3⅝ in. stroke which develops 8 b. hp. at 1400 r.p.m. and weighs 30 lb. It uses battery ignition and drives a propeller 56 in. in diameter and 36 in. pitch.

The wing section employed is an N.P.L. Fage and Collins No. 1 which is a medium thickness section with a flat under-surface and a maximum L/D of 22.0.

EARLY EXPERIMENT. M. B. Sellers during his early experiments on multiplane gliders. On the left, Mr. Sellers is preparing to take off with a quadruplane glider while at the right Mr. Sellers is seen in full flight with a five-plane glider.

Pacific Islands Flight Concluded

The cause of aviation in the Pacific Islands received encouragement recently, when the Pacific Islands flight of the Royal Australian Air Force was concluded safely, after a trip covering 10,000 miles made in seaplanes.

The original plans of the flight, which started and ended at Melbourne, included a trip to Samoa but, owing to the approach of the monsoon season, the flight was cut short at Tulagi, Solomon Islands. Considerable survey work which, it is said, will be of great value in the future, was performed during the course of the long flight. According to the commander of the planes, nothing unusual was experienced during the trip, which is believed to have demonstrated the practicability of flying in the islands in the vicinity of Australia.

In addition to the interest aroused by the termination of the Pacific Islands flight, considerable comment in aviation circles in Australia has followed the offer of the Larkin Sopwith Aircraft Company to the Australian Federal Government to accelerate land transit of mail between Sydney and Port Augusta, South Australia. Transportation of mail by planes over that distance would, it is claimed, reduce the time of carriage by twenty-four hours, a fact which would be of considerable advantage to traders.

The same company has also formulated and submitted plans for linking Canberra, the new capital of Australia, with Sydney, Melbourne and Adelaide. Both of the proposals are being considered by the Federal Cabinet, but it is stated that final decision will be deferred until the return of the Prime Minister.

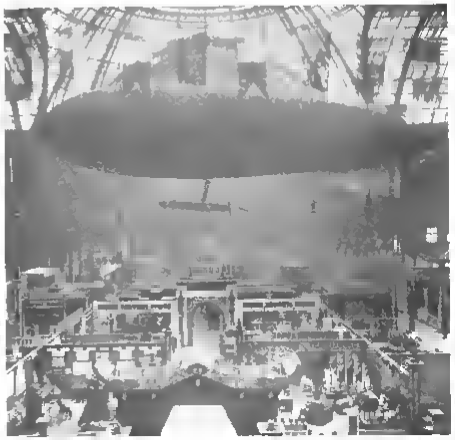
PICTURES THE NEWS

Underwood Photo

EVOLUTIONS IN SPACE A Dutch military air squadron flying Fokker two-seater observation planes over the outskirts of Rotterdam, Holland.

rwood Photo

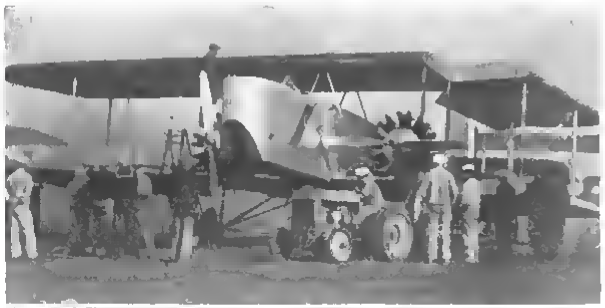
FOR SERVICE IN CHINA Corps DH squadron undergoing inspection go prior to going overseas for possible service



BY WAY OF EXHIBITING RUBBER. A Hutchinson two passenger marine balloon on show recently at the Grande Palaise, Paris, during the international rubber exhibition

AN AIR TRANSPORT ON SKIS experimental all metal transport plane designed by the Moscow Aerostitute Russia, for experimental service. The lower stub wing and their particular interest.

ALSO GOING TO CHINA. The British aircraft carrier H M S Argus with complete flying equipment, which has been sent to Chinese waters for the protection of British interests in Shanghai

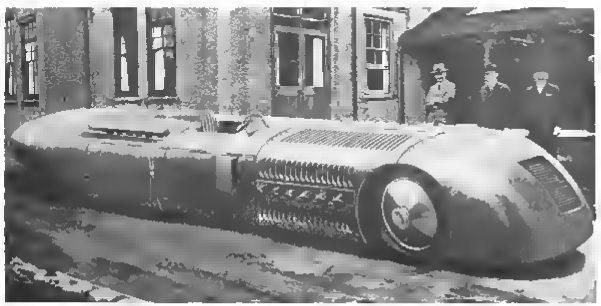


Underwood Photo

AN AIR COOLED TWIN The Navy Douglas T2-D-1 bomber and torpedo plane with twin Wright 500 hp F 2 air-cooled engines and Standard Steel propellers being prepared for flight.

THE AIRPLANE'S COMPETITOR Major H O D Segrave's racing automobile which has recently arrived in this country from England. It is 32 ft. long and 6 ft. wide and weighs 7,056 lb. It is equipped with two Sunbeam aircraft engines of 500 hp each and has a speed of 200 m p h The consumption is as high as 4 gal. per min

Auto. Daily News



FLIGHT TESTED Fred E Rentschler (rig. of the Pratt & Whitney Aircraft Co and Lieut Rutledge Irvine Field L. I. after the tests of the first Vought Corsair Navy servation fighter (Pratt & Whitney Wasp engine) which looms thi

THE SEAPORT OF ROTTERDAM A Fokker military observation plane of the Dutch air service flying over Rotterdam Holland

FOREIGN AERONAUTICAL NEWS NOTES

By Special Arrangement with the Automotive and Transportation Divisions, Bureau of Foreign and Domestic Commerce

Stockholm-Kalmar-Stettin Air Route to Reopen

The Stockholm-Kalmar-Stettin (Germany) air route is scheduled to be reopened on April 1, 1927, after having been discontinued since October last. In conjunction with the German Luft Hansa company, the Swedish firm of Aktiebolaget Aerotransport inaugurated this air service on May 2, 1926. Although the officials of the two transportation companies were pessimistic when the route was opened regarding the financial returns of the venture, it is said the volume of traffic warranted its resumption.

According to official reports, no accidents of any kind occurred on this route, but the regularity of service was not as good as on other lines operated in Sweden, which is attributed to the inclement weather conditions experienced on the east coast of Sweden during the past summer.

It is reported that the number of passengers and the volume of mail carried have been satisfactory while the amount of parcel post transported was considerably below expectations. This is said to have been due to the fact that the business community in general throughout the territory surrounding Kalmar has not been fully acquainted with the advantages of aerial transportation. It is planned to advertise thoroughly the excellent possibilities of such service before the line reopens.

Statistics covering the operation of the route during 1926 show that seventy-two Swedish machines and 283 German machines arrived and departed from Kalmar. Incoming passengers numbered 676 and outgoing passengers, 723.

Considerable improvements are to be made to the flying field at Kalmar, before the service is reopened. These improvements include the building of a radio station by the Radio Bureau of Stockholm and also the erection of a passenger station fully equipped with modern conveniences.

Larger Subsidies to French Aviation

Appropriations in the 1927 budget, already adopted by the French Chamber of Deputies, provide for subsidies to French aviation companies amounting to 78,650,000 francs, as compared with 60,500,000 francs in 1926.

During the debates on the subject an amendment was submitted, but later withdrawn, asking for the reduction of this figure by 1,500,000 francs, on the ground that the development of a line from Marseilles, Naples, and the eastern Mediterranean, for the benefit of which this amount had been inscribed, was, for the present, premature. The final opinion of the Chamber, however, was that if France did not at once take the position of organizing the aerial service between Marseilles and the eastern Mediterranean, other countries would do so. The Indian mail, instead of passing by Marseilles, would take the route via Lausanne, Milan, and Brindizi.

The debates also indicated that the economy realized by suppression of the Under Secretariat for Aviation in France has been followed by serious disorganization of French aviation at the moment when both internal and external conditions demand strong direction and control.

Furthermore, if foreign equipment, coming into use on French lines, should place French companies in a position of inferiority in exploiting certain lines, not only would these companies and the State lose their prestige and their money but the whole French aeronautic industry would suffer, it was asserted. While French equipment is not inferior to foreign, with respect to security and speed, in three points it is admittedly at a disadvantage it was said in the debate, namely, in the arrangement of airplanes for passengers, in the design of airplanes primarily on military rather than on commercial lines, and in the lack of seaplanes for commercial uses. The great international lines will have particular need of the latter in the competition that will exist during the coming year.

With respect to the aeronautic industry, a policy of prudent support during the conditions through which it is passing is favored. Owing to the closing of certain foreign markets, as well as the restriction of credits, many firms are already in trouble and some undoubtedly will go out of existence, according to reports. It was pointed out, therefore, that official service should aid by their support and orders those firms which represent a technical and industrial effort of importance.

Recommendations were made that the policy of commercial aviation should be completely revised in accordance with the following program:

1. A well-developed plan covering at least ten years, with budgets realizable in sections, according to the progressive possibilities of the technique of aviation.
2. Establishing a better official control and making a choice between the existing lines.
3. Union into a single enterprise against foreign competition, with support from the State.
4. Entering readily into international cooperation, if that should be considered of utility. The advantages of this action would be: Immediate presence on competing lines; technical, commercial, and administrative experience of traffic on these lines; the possession of contracts, subsidies, or options with the countries crossed or to be crossed; in short, relations of every sort, diplomatic, administrative, and private, which are useful as contracts.

Air Customs Passes Introduced

Air customs passes have been introduced by the Royal Aero Club, of London, Eng., for the benefit of British airmen abroad and private owners of aircraft touring the Continent. These passes serve the same purpose as motor car "triptyques".

They are in the form of paper covered books, with detachable sheets and counterfoils, and are applicable to balloons, airplanes, seaplanes, amphibians and helicopters. They are officially recognized by Great Britain, Belgium, France, Italy, Holland, Roumania, and Switzerland, and carry the guarantee of the Aero Clubs of twenty-five nations. The cost from the Royal Aero Club is only £1.11.6, and the passes serve for the customs on foreign airdromes and relieve owners of all troublesome formalities, including the necessity of making cash deposits as required hitherto.

Concession for Spain-Argentina Airline Granted

The Consejo de Estado, of the Spanish Government, has approved a concession to a company, to be known as the Compania Colon Acrea, for an air service between Seville, Spain, and Buenos Aires, Argentina, the Government to pay the sum of 500,000 pesetas for each trip, with maximum payments of 6,000,000 pesetas a year, or a total of 30,000,000.

The service is to be maintained with airships having a capacity for forty passengers and ten tons of cargo. The company is also given the concession to establish an air service with the Canary Islands. There is a provision in the concession to the effect that during the first five years of operation eighty per cent of the personnel may be of foreign origin, but that afterwards ninety per cent of it must be either Spanish or Argentine. The airships, as already reported, will be built in Germany. It has not been decided when the service will start.

The Spartan C-3 Commercial Plane

A Modern Three-Place Biplane Designed to Dept. of Commerce Class I Load Factors

AN AIRPLANE in which safety, both aerodynamically and structurel, is the paramount feature, has been built and flight tested by the Mid-Continent Aircraft Co., at Tulsa, Okla. The rugged enduring character of the plane suggested the name "Spartan", and its adaptability for commercial use led to the designation C-3, or commercial three seater, as descriptive of the type.

The Spartan C-3 with Super Rhone engine, 120 hp.

From an aerodynamical standpoint, the plane was designed so that it would not stall, and in the flight tests it demonstrated unusual non-stalling characteristics. Some thirty well known pilots who have flown the machine were unable to make it spin with engine either on or off.

The plane showed no tendency to slip off on one wing, from any position, when all flying speed had been lost. Instead, as it nears a stall, the nose settles and the plane moves forward in a safe glide.

Different Engines Fitted

The Spartan C-3 is of the conventional biplane type, with seats for two passengers in front, and the pilot's seat behind. The experimental machine was equipped with a Super Rhone 120 hp. radial engine and in flight developed a speed of 110 m.p.h. Other models are being built with a Wright E-2 engine, and later planes will be built to take a Wright J-5 radial, or the model A and I water-cooled Wright engines. The estimated speed of the Spartan with the Wright E 2 is 125 m.p.h. Landing speed on the Wright engined models is from 39 to 40 m.p.h. With the Super-Rhone, the landing speed was 35 m.p.h. A Hartzell propeller is used.

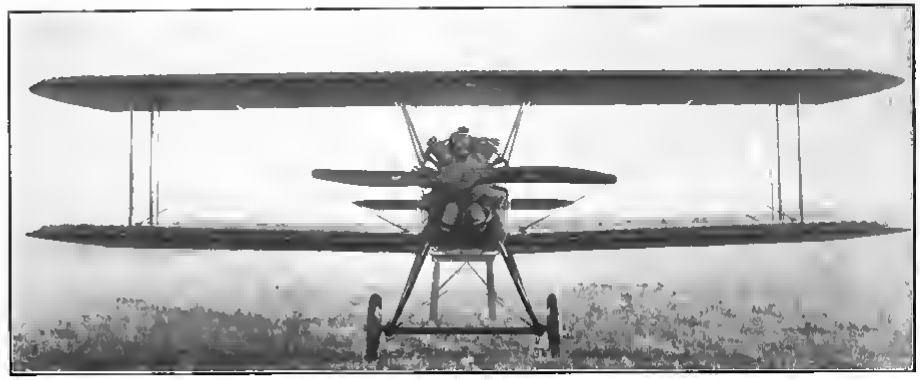
The remarkable non-stalling feature of the Spartan is attained by a proper positioning of the center of gravity with reference to the mean aerodynamic chord. This static stability is constant for all loading conditions, since all the disposable load has been grouped at the center of gravity. Thus, the machine does not get nose-heavy or tail-heavy as in types of planes where the passengers are balanced off against the gasoline load.

Being trimmed at normal cruising speed, the airplane, therefore, in a dive or in a climb, has a positive tendency to return to its normal trimmed speed if the pilot takes his hands from the controls. This quality has been demonstrated time and again in the recent 2,000 mile tour of the machine by flying at both low and medium altitudes, both loaded and light, with the pilot's hands raised clear of the cockpit.

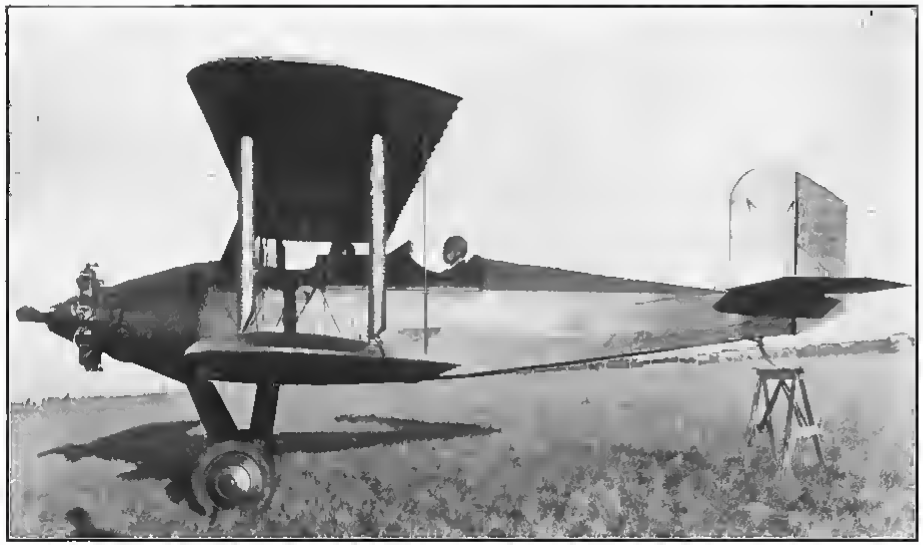
Such pilots as E. P. Lott, Dorsey Askew and Pilot Grogan of the National Air Transport, Ross Arnold and A. R. Lawrence, winners of second and third places in the On-To-Philadelphia race, T. O. Hardin, manager of Good and Foster Aerial Service, of Dallas, D. A. McIntyre, owner of McIntyre Airport at Tulsa, and I. A. Woodring, of the First Pursuit Group at Mt. Clemens, Mich., have enthusiastically praised the performance of the Spartan after flying it themselves. The machine was flown on its demonstration tour by Paul H. Meng, former Army pilot, who supervised construction of the experimental model, and is now in charge of production and is also chief test pilot.

Conforms to Official Specifications

Structurally the plane meets all requirements for Class I airplanes as prescribed by the Aeronautics Branch, Department of Commerce. Complete stress analysis has been made on all parts using the load factors designated for Class I.



A front view of the Spartan C-3 (Super-Rhone, 120 hp.) with the tail raised into flying position.



Another view of the Spartan C 3 (Super Rhone 120 hp.)

airplanes, and the Spartan should, therefore, be eligible for registry for interstate transport.

Medium carbon steel tubing, Army specification, is utilized for the fuselage construction. The structure is a modified Warren truss, rigidly braced with steel tubing, no wires being employed. All tubing is flushed inside with a compound to prevent corrosion. Spar varnish is used outside.

The engine mounting is detachable, neatly cowled in good streamline shape with aluminum, which is also used as covering around the roomy cockpits. Doped fabric covering is used on the rest of the fuselage.

A split axle type of landing gear, with tension shock members and a six foot tread, is so placed that all landing loads are carried directly into members suitably placed in the fuselage. There are no eccentric loadings anywhere in the machine. The experimental plane shown in the photographs shows a temporary undercarriage of normal type.

Wing Structure

Box type spars with plywood sides carrying Warren truss ribs built up of spruce and birch plywood permit of a great saving in weight in the Spartan, and at the same time insure greater strength than possible with cheaper construction. All wing compression ribs are of the box type, designed not only to take compression loads but also to prevent any tendency of the beams to roll over. All wing fittings, lugs and other fittings are made of Army specification fitting steel. Wings and control surfaces are fabric covered.

Control surfaces are of similar construction to the wings, beams being box type with plywood sides, and ribs of the same Warren truss construction.

The high aspect ratio of the control surfaces has proved unusually effective in flight, there being no feeling of heaviness in the control during any maneuver. Elevators and rudder are actuated by control cables from a walking beam and pedals, respectively. The ailerons are actuated by a combination cable and "T" crank arrangement which eliminates all pulleys and balance wires. Either set of ailerons will operate independently of the other in case of breakage.

Both interplane and landing gear struts are of streamline steel tubing. Flying and landing wires are streamline tie rods.

Gravity feed to the carburetor is attained in the fuel system in use of a small tank in the center section, to which gasoline is pumped from the main tank located under the fuselage. The overflow from the gravity tank is constantly visible to the pilot. When the overflow ceases, the gravity tank acts as an emergency tank and provides about 45 min. flying in case of pump failure. The main tank's location permits easy filling and repairing. It holds gasoline for five hours' flying.

Comfort for pilot and passengers is insured by the luxurious upholstered cockpits, well protected by ample sized windshields. A luggage compartment of sufficient size to hold two suitcases is provided under the passengers' seat. Additional space for light articles is provided in the cowling.

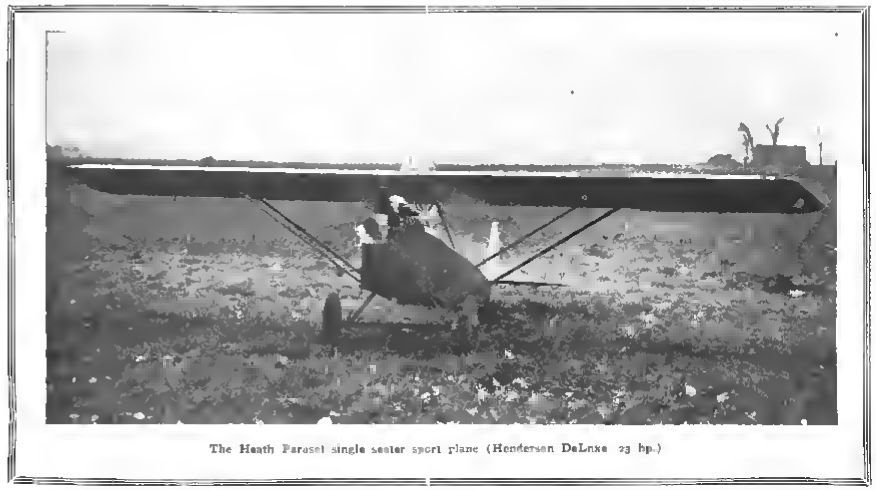
In general finish the Spartan will compare with any modern military plane, great care having been exercised to insure a clean looking job, yet nothing has been sacrificed which would tend to lessen its strength or safety. In considering every detail, its designers had in mind a plane that would appeal to the thousands of new pilots who want safety above everything.

General Details

Detailed specifications and the manufacturer's figures for performance follow:

Span, both wings	32 ft
Overall length (with radial engine)	23 ft. 6 in.
Height	8 ft. 9 in.
Dihedral, upper wing each, lower wing	2 deg.
Stagger	None
Incidence	0 deg.
Weight empty (radial engine)	1,225 lb.
Useful load	800 lb.
Total weight loaded	2,025 lb.
Wing loading	7.07 lb. per sq. ft.
Power loading (radial engine)	16.8 lb. per hp.
Wing loading (Wright E 2)	7.65 lb. per sq. ft.
Power loading (Wright E 2)	12.57 lb. per hp.
Maximum speed (radial 120 hp.)	110 m.p.h.
Landing speed (radial 120 hp.)	45 m.p.h.
Maximum speed (Wright E 2)	127 m.p.h.
Landing speed (Wright E 2)	39 m.p.h.
Cruising range	500 miles
Climbing speed (Wright E 2)	1,000 ft. per min.

The Spartan C-3, it will be realized, combines the many features which go to make up a first class modern commercial plane. It is extremely robust in structure and its appearance will meet favorably the eyes of all pilots.



The Heath Parasol single seater sport plane (Henderson DeLuxe 23 hp.)

The Heath Parasol

Chicago Airplane Company Produces Popular Priced Single-Seater Sport Plane

THE GREAT interest displayed in light sport planes during the past few years has resulted in many excellent **little machines.** However, most of them were designed and built for racing or exhibition purposes and only ten of them possess the qualifications of a true sport plane. Many of them are costly, frail, and in some cases tricky to fly.

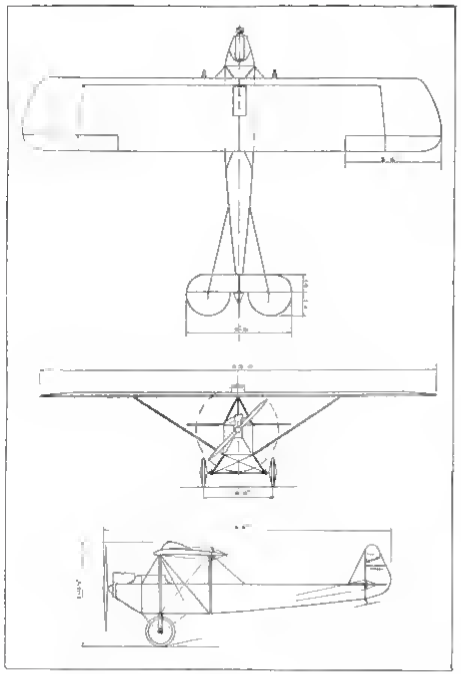
The demand for a real sport plane calls first of all for a price in reach of every one, a machine that is sturdily built in spite of its lightness, and one that can be flown safely by anyone having only a few hours of experience. The Heath Parasol, designed and built by the Heath Airplane Company of Chicago, fills this demand.

The Parasol, so called because of its parasol type of monoplane wing construction, embodies some radical features that make it possible to construct the plane quickly and at low cost, thus making it possible to put it on a production basis and retail it at a remarkably low figure. Yet, nothing has been spared to combine the greatest simplicity, safety, lightness and strength.

The fuselage is of modern steel tube construction, but has no welding joints, the tubing being held together by simple metal fittings. The engine mounting is also of steel tube construction and extremely simple.

The machine is powered with a four-cylinder Henderson DeLuxe motorcycle engine, which was chosen for its low cost and good all around performance. This engine develops 23 hp. runs without vibration and is light in weight, which is the prime factor in light airplane construction. It swings a

A side view of the Heath Parasol sport plane.



General layout drawings of the Heath Parasol

4½ ft propeller, driven direct from crankshaft by means of a special conversion developed by the Heath Airplane Company.

The monoplane wing consists of two panels, pinned together without a center section. The wing is supported at the fuselage by two tubular Vee struts in front and aft of the cockpit and is also braced by two steel tube struts on each side of the fuselage, running from the lower longerons to about one half the length of the wing. The pilot is seated on the floor of the fuselage, but comfortably and with ample leg room. The visibility is excellent.

The tail surfaces are of wood and fabric construction. The gasoline tank is mounted as a center section tank where the two panels are joined. The landing gear is of steel tubing and uses 20 x 2 wheels. The tail skid is made of spring steel and is quite effective.

The airplane has a wonderful performance and flies for long stretches with hands off the controls. It has a top speed of 70 m.p.h. and lands at 32 m.p.h. It carries a considerable load for a plane of such small size but gets off quickly and lands in a very small space.

General Details

The chief characteristics and the manufacturer's figures of performance are as follows:

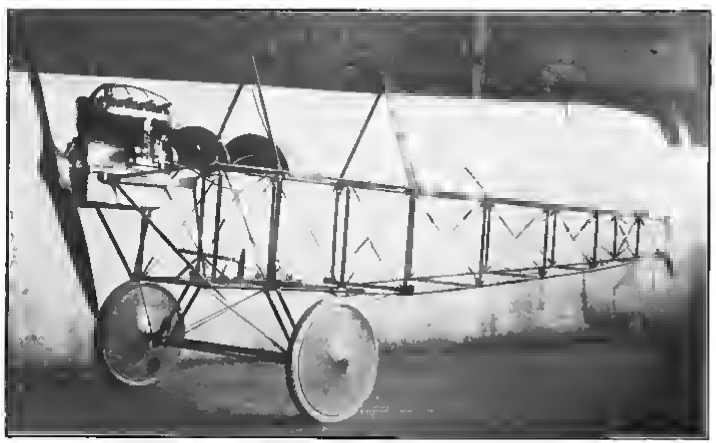
Span	23 ft
Chord	41 ft 4 in.
Wing area	94 sq. ft
Length overall	18 ft. 3 in
Height overall	5 ft 10 in
Weight empty	290 lb
Useful load	225 lb
Gas capacity	3.3 gal
High speed	70 m.p.h
Land speed	32 m.p.h.
Cruising radius	140 miles

The Khartoum-East Africa Service

The first seaplane to be used in the new flying service between Khartoum and East Africa was launched at Short Brothers of Rochester, Eng., recently. The machine is known as the Pelican and is a four-seater, DH-50, fitted with 420 hp. radial Bristol Jupiter, a Fairey-Reed metal propeller, and special duralumin floats by Short Brothers. The trial flights have taken place and the machine has given satisfaction. The service will be weekly in each direction, the route following the White Nile from Khartoum to Malakal and terminating at Kisumu, on Lake Victoria, a total distance of 1,400 miles.

Radio for Cairo-Karachi Service

The DH 66's which will be used on the Cairo-Karachi service of the Imperial Airways, will be fitted with the latest type of Marconi 150 watt all-purpose, telephone and telegraph aircraft equipment, type A D 6, which will enable the machines to keep in constant touch with the radio stations throughout the journey. For the first time, a generator is used, which provides power both for the internal lighting of the airplane and for the radio installation. Special modifications have been introduced to suit the conditions existing on the new route.



The skeleton fuselage of the Heath Parasol showing the general constructional features. Note the non-weld steel tube fuselage structure. The picture also gives a clear view of the engine mount and the undercarriage construction.

Side Slips

By ROBERT B. OSBORN

The Intrepid Aviator hasn't been in to see us lately, but Mr. G.S.I. reports having seen him right after he had taken his license examination, under the new Government air regulations. There seemed to be some question in the mind of the Intrepid Aviator as to whether or not he had passed the examination, as he was anxiously inquiring everywhere regarding isobars, meteorological disturbances, low barometric pressure areas, magnetic declination and sundry other topics brought up by the questions. He said he had no idea that there were any of these things in the air, lurking around the corner to pop out on a fellow, and had come to the conclusion that flying might be dangerous after all.

* * * *

As we understand these national regulations, an airplane does not have to be registered and licensed if it is used entirely within the borders of one state. This makes the registration almost compulsory for Delaware and Rhode Island, unless the inhabitants of those areas will be content to fly in very tight spirals all of the time.

* * * *

The new custodians of our civilian aeronautics might investigate a patent medicine being advertised by a drug company, their advertisements claiming that it will "keep the air passages free from the infection."

* * * *

We hasten to reassure Mr. N. O. of Chanute, Kansas, who wrote in to us demanding a congressional investigation into the statement appearing in the Jan. 24th AVIATION, that one of the problems in tropical flying is that of "—individual fliers becoming distorted and separated." The article had reference to plywood difficulties in tropical climates and the word "phes" was intended instead of "fliers." We are glad to say that the only time we have seen any "individual fliers distorted and separated" was along about the third night during a race week program.

* * * *

The Inter-Planetary Society for the Aeronautical Education of Artists and Custodians of Fund for Retiring All Jennies at Ten Years of Age, of which we are president and founder, held a meeting around our desk last week. A motion was passed unanimously, to ask that a by-law be incorporated in our new air legislation requiring that no artist shall be permitted to illustrate an airplane story or advertisement, unless he shall have seen an airplane at some time in his life. Something must be done to protect the younger generation.

* * * *

Any one interested in an ambitious young chap, who is anxious to get into the airplane business, and who seems to have diverse and all-around qualifications, will be furnished with the name of the author of the following letter. The letter was turned over to us by a friend, who has charge of employment at a large airplane factory. "Dear Sir:— I am a young fellow and am working at this here hotel now as a first class dish washer and I have seen the areoplans flying around and want to be either a 1st class aviator or a good mekanik. I understand you have a big faktorie there and you make planes there so dear sir if you could find a job for me there I sure would take it in a hurry cause we are all through here now. I can also roe a boat and swim (in case the plane comes down too fast) and stay under water. Another thing I can do darn good is run an Evenruth motor boat and caddy for the aviators when I aint working. I will work for 12.00 dollars a week and me board. The aviators here recommended you are a pretty good fellow so keep on being a good fellow and hire me."

AIRPORTS AND AIRWAYS

Boston, Mass.
By Daniel Rochford

The State of Massachusetts will not attempt the enlargement of the Boston Airport this year. Two aviation bills are before the legislature. One provides for an interim legislative committee of one senator, two representatives, and four appointees of the Governor to determine a proper state aviation policy and to recommend necessary legislation to the next session of the legislature. This is the Massachusetts American Legion Aviation Committee Bill. It has already been approved by the powerful Joint Rules Committee of the legislature and is due for passage. The other bill provides for the increasing of the Boston Airport area by the State. It has been held for study by the new interim committee.

Flying at Boston the week ending Feb. 14 was as follows: Commercial, by the Boston Airport Corporation, twelve hours; Army, regular and reserve pilots, fourteen hours; National Guard, sixteen hours; Naval reserves, eight hours. The week ending Feb. 21 saw about a third that total, due to rain and fog.

Lieut. Crawford H. Hollidge of Boston was elected president of the New England Air Corps Reserve Officers Association for 1927 at a meeting at the Cadet Armory, Boston, recently. Lieutenant Hollidge, while on active duty at the Boston Airport two Summers ago, established what is believed to be a World's record for flying time, flying a total of seventy-five hours solo time in one week.

A new aviation corporation has been formed in Boston, named Air Service of New England, Inc. It is to sell aviation services, in particular serving as the Fairchild Aerial Survey agents for New England. It is to serve as selling agent for the Boston Airport Corporation, developing aerial sight-seeing tours, flying classes, etc. John D. Haughey, of Newton Highlands, is the president. Offices have been opened at 38 Chauncy Street, Boston.

The 445th Pursuit Squadron, which has claim to being the only reserve squadron which flies regularly throughout the year, as a squadron, has been organized at the Boston Airport as follows:

Headquarters—Capt. Bartlett Beaman, commanding officer; Capt. Hilton W. Long, operations officer; First Lieut. Charles Clark, adjutant; First Lieut. Geo. H. Lusk, supply officer; Sec. Lieut. Arthur Coombs, transportation officer.

Flight "A"—First Lieut. Crawford H. Hollidge, First Lieut. Charles Clark, First Lieut. Geo. H. Lusk, First Lieut. Clarence J. A'Hearn, First Lieut. Joseph C. Dawson, Sec. Lieut. Richard E. Cobb, Sec. Lieut. Benjamin F. Billings, Sec. Lieut. Robert A. Dennison.

Flight "B"—Capt. Hilton W. Long, First Lieut. Francis C. Crowley, First Lieut. William F. Loomis, Sec. Lieut. Donald Ray Edgar, Sec. Lieut. Pierce N. Hodgkins, Sec. Lieut. Charles W. Howe, Sec. Lieut. Volney D. Hurd, Sec. Lieut. Harold H. Phipps.

Flight "C"—Capt. H. R. Bazley, First Lieut. Richard A. Magee, Sec. Lieut. Mansfield Tolman, Sec. Lieut. James B. Towne. Four vacancies.

Benjamin F Bittings, chief pilot for the Airport Corporation recently flew two night advertising stunt jobs over Boston for a local theatre Due to there being no landing lighting facilities at the Airport he had to use the old fashioned method of sticking three pails of gasoline out on the runways and setting fire to them.

The writer had the pleasure recently of flying from Boston to Hartford and Hadley Field in the Curtiss Lark, the Colonial Air Transport mail plane The last hour of the southbound trip and the first hour of the northbound trip were night flying The beacon lights of the Department of Commerce, installed by Captain Raymond Brooks, were very effective Southbound there was a heavy ground haze and mist which made them less than on the morning trip up, when they stuck out like a sore thumb and you could see two lights ahead of you crossing those congested New Jersey cities and towns

Assistant Secretary of the Navy Edward P. Warner was the chief speaker at a naval reserve banquet at the Bellevue Hotel, Boston, Feb. 21.

Schenectady, N. Y.

The Colonial Air Transport Company, Inc., has purchased 165 acres of land at the Thomas Corners intersection of the Saratoga Highway, for $60,000, and will establish a large airport on the property It is expected that the completion of the airport, over the next five years, will mean the expenditure of more than $500,000

The land is part of the John Houck and the Low Vedder farms Early in April work will start on the development of the field, and it is thought that it will be ready for service July 1, when the Colonial Air Transport Company, Inc., will take Government air mail contracts The relinquishing of the route over the Alleghany Mountains places Schenectady in the heart of the new route, which will connect New York and Chicago directly through the Mohawk and Hudson River Valleys Schenectady will also be on the line between New York and Montreal and on the route of the Boston-Chicago fliers

This announcement, one of the most important in the history of Schenectady, was made at the aviation dinner, held in the Hotel Van Curler, Feb 9, and was greeted with enthusiasm by the one hundred and seventy-five guests, who realized that this development will make their city an aviation center of the East.

The dinner, which was held under the auspices of the Schenectady chapter of the National Aeronautic Association, the Chamber of Commerce, the local chapter of the American Institute of Engineers, and the Officers Reserve Corps, was addressed by William P MacCracken, Assistant Secretary of Commerce for Aviation and Col Theodore Roosevelt

Assistant Secretary MacCracken, after complimenting the city on the acquisition of an airport, pointed out that it was a step that meant much to the entire Mohawk valley Touching on the importance of the engineering phase of future aviation development, the speaker predicted the control of planes by radio and the perfection of illumination systems, making night flying everywhere possible He told his audience that a trip that afternoon through the laboratories of the General Electric Company had revealed startling facts to him, and in conclusion he said that within the next ten years Schenectady will be within twenty-four hours of any city in the United States

A letter from Major General O'Ryan, authorizing the announcement of the purchase of the site, was read by Major Button C E Eveleth, of the General Electric Company, presided at the dinner

Concord, N. H.

By R. S Fogg

One of the finest airports in New England has just been completed at Concord, N H The field, comprising one hundred acres, is located one mile east of Concord, the capital of New Hampshire The land is owned by the state which appropriated money for the clearing and smoothing of the runways These are L shaped and 2,300 ft by 300 ft. north and south, and 1775 ft. by 300 ft. east and west. The north-south runway adjoins the old flying field, giving a total clear runway of 4000 feet into the prevailing wind A corrugated iron hangar 50 ft. by 50 ft., including shop space of 50 ft. by 15 ft., has been completed, which also contains office and pilots' sleeping quarters.

The shops are well equipped for engine rebuilding, wing covering, and general repair work under the direction of skilled airplane mechanics. The hangar is owned and the field operated by the Concord Airport Corporation, composed of leading business men, headed by Robert Jackson, prominent lawyer, and one of the backers of the ill-fated Sikorsky plane.

The hangar has been leased and will be operated by R S Fogg, who has been engaged in commercial flying for the past eight years, operating airplanes as well as a mail carrying seaplane, on Lake Winnipesaukee, N H The equipment consists of one Curtiss Seagull type seaplane Hispano-Suiza equipped, one Lawson MT-2, 3-place biplane, with a Hispano engine, one Standard J 1, 3 place biplane, Hispano engine. Lieutenant Fogg, who was an Army instructor of advanced flying at Love Field, Dallas, Texas, has carried nearly 10,000 passengers without injury to passengers or mechanics.

Columbus, Ohio

By Capt L. G. Mulzer

Recent flying weather in Columbus has been wonderful and fifteen planes have landed at the field. Capt Leslie G Mulzer, manager of the Columbus Flying Service, has placed a new Waco on exhibition in the Hudson Essex showroom The plane is suspended from the ceiling by three cables, the wheels being eleven feet off the floor Thousands of people have seen this display daily.

Pilot F K Perry is building a helicopter, which he says will fly like a balloon, and we are awaiting its appearance on the field. We have not been sold on helicopters yet.

J Paul Riddle, of the Embry Riddle Co., Lunken Airport, Cincinnati, Ohio, dropped in on us with a load of Crosley radios and plenty of ice on the plane. T. Higbee Embry has just mailed us an announcement of his break into the matrimonial game

Philadelphia, Pa.

By R S Salus

The new Federal air regulations actually went into practice Feb 1, when Major Clarence M. Young, Chief of the Air Regulations Division and his corps of inspectors arrived in Philadelphia to inspect and test the equipment, pilots and mechanics of Philadelphia flying companies preparatory to issuing the proper licenses Major Young was accompanied by the following assistants:

Ralph G Lockwood	Supervising Inspector
John B Houck	Aeronautical Engineer
Robert H East	Inspector
Parker D Cramer	Inspector
W R Jones	Inspector
C. I Stanley	Inspector
W N Brogan	Inspector
Frank H Jordane	Experimental Pilot

All the men are experts in their profession and have long records of active and useful experience in the development of aviation from a practical standpoint.

"Nize Baby" the winner of the Aero Club of Pennsylvania Trophy, which is owned by the Ludington Philadelphia Flying Services, was the first plane to be inspected at the Philadelphia Municipal Flying Field.

The inspection party then went to the Pine Valley Field, some by plane and some by automobile, where the rest of the Ludington machines were inspected and flight-tested and other local pilots and planes were also examined

The following day, the pilots and mechanics were given a written examination in airplane construction, rigging, engine mechanics, and meteorolgy, all of which must be passed to comply with the Department of Commerce regulations for a license The inspection party then proceeded to Hallowell, Pa., to go through the same procedure with the equipment and personnel of Pitcairn Aviation, Inc. In the near future Major Young will assign his men to various territories so that the entire country will be covered

In all about twenty planes were inspected in the neighborhood of Philadelphia. Major Young and his assistants created a very favorable impression by their constructive attitude towards the inspection work on hand and the pilots and owners felt that the Department of Commerce would really help the industry by gaining the confidence of the public through governmental inspection of planes.

Spokane, Wash.

By E. Harve Partridge

With three Swallows already sold, one retained for his own purpose and several prospects for more planes, Nick B. Mamer, of Spokane, believes he has made an excellent start toward the establishment of the first commercial plane agency in the Inland Empire.

Five students are taking training in pilot Mamer's Swallow and all of them, who had previous training time in war type planes, are enthusiastic. Two of them have purchased planes.

Pilot Mamer will keep one OX job for student training and will install a 150-Hisso in a second one for fast cross-country trips in the near future.

Major Jack Fancher of the 116th Aerial Observation Unit, Washington National Guard, cracked up the squadron's new Douglas O-2C in Seattle. The steel propeller was put out of commission and a few holes punched in the upper wing. After repairs were made the plane was flown back to its Spokane base by the major. The pilot was reported to have nosed over in attempting a landing. He had previously taken Gene Tunney, heavyweight champion, from Seattle to Olympia, where the boxer appeared before the legislature to lobby for a ten-round boxing measure.

Guard fliers have not missed earning flying pay on any Sunday during the Winter. There have been few week days when the Jennies were not to be seen skimming through the skies.

Major Fancher, on a recent trip to Seattle, put the Douglas through the 270 miles in the record time of 2 hr., 15 min. He had to pilot the plane above the 12,000 foot mark to cross the Cascade mountains, which were covered deeply with snow. All motor roads through the mountains are impassible and a forced landing would have been at least an unpleasant incident.

UNITED STATES AIR FORCES

Distinguished Flying Cross Authorized

An Act of Congress approved July 2, 1926, authorizes a decoration to be known as the Distinguished Flying Cross.

Subject to certain special conditions prescribed in the law, the following are eligible for the award of this decoration.

(1) All members of the Army, Navy and Marine Corps of the United States, while participating in an aerial flight, as part of the duties incident to such membership.

(2) All members of the National Guard not in Federal service, the Organized Reserves, the Officers' Reserve Corps, the Enlisted Reserve Corps, the Naval Reserves and the Marine Corps Reserves, not on active duty, while participating in an aerial flight as part of the duties incident to such membership.

(3) Members of the Coast Guard of the United States and members of the military naval or air forces of foreign governments while serving with the military or naval forces of the United States and while participating in an aerial flight.

Civilians are not eligible for the award of the distinguished flying cross.

The Secretary of War and the Secretary of the Navy, acting for the President, will make these awards to individuals of the War Department and Navy Department respectively. The regulations governing the awards are retroactive, but for any act or achievement performed prior to July 2, 1926, and since April 6, 1917, the decoration will not be awarded unless the recommendation therefore shall have been made on or before July 2, 1928 and the decoration will not be awarded for such prior acts later than July 2, 1929. For acts or achievements performed subsequent to July 2, 1926, the cross will not be awarded after more than three years from the date of such act nor unless the recommendation shall have been made at the time of such act or achievement or within two years thereafter. The regulations also provide that not more than one of the several decorations authorized by Federal law for acts of heroism or extraordinary achievement will be awarded for the same act.

Recommendations for the award must be based upon the statement of a person who has personal knowledge concerning the act of heroism or extraordinary achievement, or who was an eye witness thereto, preferably the immediate commander of the person performing the act.

War Department orders of Jan. 31, 1927 named a board of officers in Washington who will make recommendations for the award of the Distinguished Flying Cross to Army personnel.

The design for the Distinguished Flying Cross has not yet been selected.

Air Corps May Not Participate

Major Gen. Mason M. Patrick, Chief of the Air Corps, recommended on Feb. 3 that the Air Corps should not take part in the joint maneuvers with the Navy at Narragansett, R. I. His recommendation was considered by a conference consisting of F. Trubee Davison, Assistant Secretary of War for Aviation, Major Gen. Charles P. Summerall, Brig. Gen. James E. Fechet and Maj. W. G. Kilner, but no decision was taken.

General Patrick believes participation in the maneuvers would handicap the five-year development program of the Air Corps.

Photography School at Fort Monmouth, N. J.

The War Department has approved a new course to be included in the list of subjects at the Army Signal School, Fort Monmouth, N. J. The new subject will be that of still and motion photography and is the first of its kind to be offered in an Army School. The object of this course is to impart the principles governing photography and to train the students in the making of historical and news pictures so that the Army will be better able to preserve pictorial records both of its present and future activities. Two courses, each of nineteen weeks, will be given. Lectures will be delivered from time to time by civilian experts on this subject, while experienced cameramen will explain the tricks of the trade to the soldier students.

Aircraft Squadrons, Scouting Fleet

The Aircraft Squadrons, Scouting Fleet, consisting of twenty-five planes plus the flagship plane, together with the U.S.S. Wright, Teal and Sandpiper, departed for Southern waters on Jan. 17, with the exception of two SC planes. The entire squadrons consisted of thirteen SC planes (VS Squadron One) plus flagship plane, and twelve T3M-1's (VT Squadron One).

En route from Hampton Roads to Charleston, S. C., one SC plane landed by the U.S.S. Teal, at Cape Fear, N. C. On Jan. 18, the three SC planes unable to accompany the Fleet arrived at Charleston. After spending the intervening time between the 18th and 20th, all planes proceeded to Fernandina, Fla., where they arrived on the 20th. On Jan. 22 & 23 the planes proceeded to Miami and on Jan. 25 they proceeded from Miami to Key West where they based.

Air Officers Credited With Sea Duty

A bill to amend section 1571 of the Revised Statutes, to permit officers of the Navy while on duty on airships to be credited with sea service for this period, has been introduced by Representative Magee of Pennsylvania. The Bill was referred to the Committee on Naval Affairs in the House of Representatives.

The Navy Department desires particularly that this legislation become a law as the handling of an airship is very definitely a specialty and requires long and specialized service to obtain efficient personnel. It is desirable that officers wishing duty with airships should be permitted to devote their entire time to this service with alternating periods of duty on shore in connection with airships and duty on board. If service on board were classed as sea duty such provision

would not, in any way, interfere with those officers who did not desire to break entirely away from surface experience or who wished to qualify themselves for the command of surface craft.

New Radio Equipment for Anacostia

The first three SE-1375-A radio spotting equipments were delivered by the Washington Navy Yard to the Naval Air Station, Anacostia, D. C. for use by VO Squadron Six. These sets had to be delivered less the voltmeters, in order that two of the sets might be installed in sufficient time in two OL-6 (Loening) planes which this squadron has just received, and is ferrying to Guantanamo, Cuba. The corrected voltmeters will be shipped as soon as received.

Army Air Orders

Capt. Clearton H. Reynolds Air Corps, upon return to his station from present temporary duty at Maxwell Field, will stand relieved from assignment and duty at Bolling Field and will proceed to Fort Sam Houston, reporting to commanding general.

First Lieut. Albert C. Foulk, Air Corps, assigned to duty as a student 1927-1928 course at Eng. Sch., McCook Field, upon completion of present tour of foreign service.

Upon completion of present tour of foreign service, the following officers of the Air Corps will join the stations specified: First Lieuts. Richard H. Magee, Chanute Field, Harry C. Wisehart, Brooks Field, Robin A. Day, Brooks Field, Max F. Schneider, Brooks Field, Leonidas L. Koontz, Brooks Field, George C. Lundberg, Scott Field, Julian B. Haddon, Selfridge Field and Capt. Robert Kauch, Brooks Field.

Sec. Lieut. Luther S. Smith, Air Corps, Selfridge Field, to Kelly Field.

First Lieut. Harvey H. Holland, Air Corps, and Sec. Lieut. John G. Salsman, Air Corps, Scott Field, to Brooks Field.

Capt. Aubrey I. Engle, Air Corps, upon completion of present tour of foreign service, to duty at Crissy Field.

Sec. Lieut. Robert William Calvert Wunsatt promoted to rank of First Lieutenant, and will remain in present duties.

First Sergt. Henry B. Williams, Air Corps, will be placed on the retired list at Luke Field, Hawaii.

Sec. Lieut. Charles Owen Wisstogel, Air Corps, Fort Sam Houston, transferred to the Field Art., Fort Benjamin Harrison.

Sec. Lieut. Albert Carl Komdat, Air Corps Res., Cleveland, to active duty Langley Field, reverting to inactive status Dec. 16.

Navy Air Orders

Lieut. Comdr. Ralph E. Davison det. USS Langley, to Nav. Air Sta., Pensacola.

Lieut. Comdr. William K. Harrill det. Wing Comdr. of Obs. Wing Airef. Squad., Battle Fleet, to Gen. Inspr. of Nav. Airef., East Dist., New York.

Lieut. Comdr. Charles T. S. Gladden det. com. VJ Squad. 1, Airef. Squad., Battle Fleet, to Nav. Obs., Washington.

Lieut. Comdr. Robert P. Molten, Jr., det. com. Nav. Air Sta., Coco Solo, C. Z., to USS Langley.

Lieut. William S. Grooch det. USS Oklahoma, to VO Squad. 1, Airef. Squad., Battle Fleet.

Lieut. Carlton D. Palmer det. Nav. Air Sta., Lakehurst, to USS Los Angeles.

Lieut. Thomas G. W. Settle det. Nav. Air Sta., Lakehurst, to USS Los Angeles.

Lieut. (jg) John E. Pixton det. VO Squad. 2, USS Idaho, Airef. Squad., Battle Fleet, to observation and treatment Nav. Hosp., San Diego.

Rear Admiral John R. Y. Blakely det. Asst. to Chief of Bu. Nav., to command a Crusier Div.

Lieut. (jg) Edward C. Ewen det. VF Squad. 6, Airef. Squad., Battle Fleet, to Nav. Air Sta., Pensacola.

Lieut. (jg) Charles F. Greber det. VO Squad. 2 (USS Oklahoma), Airef. Squad., Battle Fleet, to VF Squad. 2, Airef. Squad., Battle Fleet.

Lieut. Charles E. Swithenbank det. Nav. Air Sta., Pensacola, to c. f. o., USS Saratoga.

Lieut. Earle P. McKellar det. VJ Squad. 1, Airef. Squad., Battle Fleet, to VO Squad. 1, Airef. Squad., Battle Fleet.

American Aircraft Directory

Many enquiries have been received by Aviators for information regarding state laws, municipal ordinances, commercial pilots, airports and aircraft operators throughout the United States To meet this demand, the American Aircraft Directory will be published in 1927 in book form with many maps, illustrations and advertisements As many of our readers wish this information immediately, there will be published each week, the data which has been received to date

It is expected that many additions will be made and our readers are requested to send any corrections, additions or suggestions that they may have. Copyright, 1927 by Gardner Publishing Company

FLORIDA

(Continued)

ORLANDO
Taliaferro Harris, c/o Florida Hotel
Royce H. Shaw, 224 E. Robinson Av.

OKEECHOBEE
Earl L. Fogg

PALM BEACH
E. H Deakin, 400 Seabreeze Av.
Wm. Sullivan and Capt Applegate

SEBRING
Otis A Hardin

SEWALLS POINT
Hugh L. Willoughby, Jenson, P. O. (Summer, Newport, R. I.)

ST. PETERSBURG
Johnny Green, St Petersburg Airboat Line

WINTER HAVEN
H E. Cornell

BARTOW
FLYING FIELD
Municipal Landing Field
Location 2 mi E of town
Description 1,200 by 2,200 ft ; marked.

BELLEAIR HEIGHTS
FLYING FIELD
Commercial (seaplane)

CAMP JOHNSON
FLYING FIELD
Government Field, address commanding officer or Chamber of Commerce, Jacksonville
Location 8 mi SW of Jacksonville, just W of St Johns River
Description 3,000 ft N and S by 1,000 ft. E and W.
Facilities Supplies and repairs in Jacksonville

CLEARWATER
FLYING FIELD
Seaplane landing
Location NE of St Petersburg
Facilities Supplies and repairs on shore

DAYTONA BEACH
FLYING FIELD
Municipal, (seaplane)
Location Halifax River, near yacht club
Facilities Supplies obtainable at Daytona Yacht Club, west bank of river

FERNANDINA
FLYING FIELD
Seaplane landing
Location Amelia River
Facilities Supplies and repairs available at garages.

ST. PETERSBURG
FLYING FIELD
Fuller Field, municipal, address Director of Public Works
Location 6 mi. W of center of city
Description Irregular shape with two runways, one 2,100 ft by 400 ft., and one 2,700 ft by 600 ft
Facilities Supplies available.

GEORGIA

Pilots and Operators

AMERICUS
S. & W. Aeroplane Co
O. E. Sellers

ATHENS
Ben T Epps, Epps Garage, 392 Washington St.

ATLANTA
Frank B. Alexander, 531 Courtland St.
Beeler Blevins, P.O Box 699
W. B. Hartsfield, Candler Field
A B. McMullen Co., 15 Peach Tree Arcade

CALHOUN
John L. Littlefield, P O. Box 262

COLUMBUS
G. M Williams, P.O. Box 14

DECATUR
Royce H Shaw, Box 125

MACON
Solomon Motor Co

STATE DIRECTORY

ALBANY
FLYING FIELD
Curtiss Field, operated by Curtiss Airplane Co
Location 2 mi N of city
Description 2,000 by 1,050 ft.
Facilities Supplies in town

AMERICUS
FLYING FIELD
Souther Field (now inactive), address J. G. Williams, caretaker
Location 4 mi. NE of Americus.
Description. 2,400 by 4,600 ft.; Alt. 365
Facilities. Hangars; supplies and repairs in town.

ASHBURN
FLYING FIELD
Municipal Field, operated by city.
Location 1 mi. N of town.
Description 1,200 ft. sq
Facilities Supplies in town.

ATHENS
FLYING FIELD
Epps Field, address B. T. Epps
Location 3 mi. E of center of city
Description. 1,800 by 1,600 ft.; Alt. 850 ft ; marked.
Facilities Hangar, repairs and supplies at Epp's Garage, Telephone 497

AUGUSTA
FLYING FIELD
Hancock Field, address Board of Commerce
Location Western edge of city, 3 mi. from center
Description T shaped, 1,800 by 300 ft., and 2,100 by 400 ft ; marked.
Facilities Supplies delivered to field.

BRUNSWICK
FLYING FIELD
Naval Air Station, for seaplanes only.
Facilities Supplies in town

COLUMBUS
Ordinance levying tax on passenger carrying
FLYING FIELD
Municipal Landing Field
Location 1 mi. SW of city.
Description Inside of 1 mile race track.
Facilities Supplies in town.

CORDELE
FLYING FIELD
Municipal, owned by city.
Location ½ mi W of city.
Description 1,150 ft. sq
Facilities Supplies in town

DAWSON
FLYING FIELD
Municipal Landing Field.
Location ½ mi S of city
Description 1,350 ft. E and W by 900 ft N and S
Facilities Supplies in town.

DECATUR
FLYING FIELD
Commercial, operated by E F. Tuggle and Frank Wickersham.
Location 1 mi NE of courthouse square.
Description Two take-offs, each about 1,200 ft long.
Facilities Hangar, supplies in town

FITZGERALD
FLYING FIELD
Hanley Field, municipal.
Location 1 mi S between RR. and highway.
Description 40 acres; Alt. 515 ft.
Facilities Supplies in town

FORT BENNING
FLYING FIELD
Benning Field, operated by Army Air Service
Location 8 mi. S and 1 mi W of Columbus
Description 2,400 by 1,500 ft.; Alt. 300 ft.
Facilities Supplies in town.

FORT VALLEY
FLYING FIELD
Curtiss Field, commercial
Location SE of town
Description 500 ft., triangular field.
Facilities Supplies in town

HAWKINSVILLE
FLYING FIELD
Municipal Landing Field.
Location 2 mi. W of city
Description 750 by 1,200 ft.
Facilities Supplies in town

(To be Continued)

PUBLISHER'S NEWS LETTER

H. G. Wells, the eminent author, says in his most recent attack on European Air lines, "Now I am not reflecting here on the personal capacity and honesty of any of the people concerned with the European air services. I live quite outside the feuds and competitions, ambitions and disappointments of that queer world. Whenever I state such facts as these, plain and simple and easily verifiable about the European air services, the air press becomes extremely heated and defensively rude about it—but the facts remain facts." He then proceeds to blacken the whole progress of European air transport development by accusing it of every conceivable shortcoming, technical, financial, political and operative. Now, instead of either being rude in attack, as he has been, or defensively rude, let us examine the facts which he says are "plain and simple and easily verifiable".

* * * *

Mr. Wells gives his personal experience in flying. He states he has "flown fairly often", but he flies no longer. He says he finds it "too uncomfortable, irregular and stupidly dangerous". He claims, with his great foresight that has made his romancing so popular, that "nearly everyone of these series of horrible accidents that have so powerfully retarded the expansion of European air travel was a foretellable disaster". Such a criminal indictment against the high-minded, efficient and able men that are charged with the safeguarding of the lives of thousands of passengers that are flying every day in Europe is not only "rude" but libelous. The best answer to such bombastic egotism is facts. In 1926, the airlines of Europe flew more miles than ever before. Expansion has not stopped as indicated by Mr. Wells, but is spreading in every direction. More passengers flew last year than ever before. As for safety, reliability and punctuality, let the writer's experience in 1926 be compared with Mr. Wells' earlier flights. In four months, 21,000 miles were covered over the air lines of Europe, Asia and Africa. Seventy planes on fifteen different air lines were used. On fifty-three days, flights were made in seventy planes and one airship, of twenty-five different types. One hundred ten engines furnished the power and sixty pilots of eleven different nationalities flew me for two hundred thirty-four hours. *And I did not have one forced landing. I did not hear an engine even sputter in the air.* Every trip, save one, was completed on schedule, far exceeding railway or steamship punctuality. And the one trip not completed was undertaken with my consent in rain and fog, and involved a detour of two hundred fifty miles of flying around mountains, with a perfect landing by a Czech pilot in Czechoslovakia in a storm. The trip was easily completed by train to Prague with none of the discomforts and inconveniences depicted by Mr. Wells. If an argument on air transport can be based on personal experience, it is only fair to consider more than the limited flying of a disgruntled and irritated novelist. And the wife of the writer accompanied him for over 4,500 miles on these air journeys and never had but the most pleasant experiences. So much for Mr. Wells attack on reliability, expansion and safety of airlines.

* * * *

Hear Mr. Wells again: "For ten years Europe has been pottering, dangerously and ineffectively, with the glorious possibility of air transport about the globe, and it seems no nearer to its realization today than it was in 1919". He then asserts that development "is hopeless without the expenditure of capital on the scale of say $250,000,000 00 plus". His hopelessness is complete so he says "So it doesn't start, It doesn't get on. It seems highly probable that twenty years hence we shall be muckering about with air travel very much as we are doing today. It will be as fitful, unpunctual and uncertain." Such nonsense has never before been uttered by a writer of reputation. The name of H. G. Wells will go down in history with that of Dr. Lardner of Liverpool, who, in 1835, said: "As for the plans mentioned in the newspapers of a direct steamboat line between Liverpool and New York, this is perfectly ridiculous. You might as well talk of running a line between Liverpool and the moon". And only three years later the Great Eastern crossed the Atlantic in twenty-two days.

* * * *

Not content with such a vituperative attack, he then proceeds to further careless statements, such as: "We find every single country of the European patchwork messing about with its own national aviation, and placing every possible impediment in the way of foreign air development". Now, what is the truth? The Imperial Airways, the British air transport company, flies in England only about forty miles to the Channel, and all the remainder of its route is in Holland, Belgium, France, Switzerland, Egypt, Palestine, Asia and India. French, Dutch and German air lines fly to London regularly. And yet, an Englishman complains of impediments being put in the way of "foreign" air development. The C.I.D.N.A., the French air line from Paris to Constantinople, flies over ten countries. The Luft Hansa, the German airline combine, spreads its network of air routes over thirteen different "foreign" countries. Spain is flown over by French air lines and the Dutch K.L.M. line flies over several countries besides Holland. Mr. Wells evidently is writing an imaginative tale, such as has brought him such great fame, but I agree with his conclusion "there is no need to elaborate this monstrous contrast further".—L.D.G.

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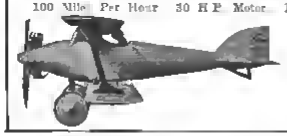

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