

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE JULY 14, 1921

RELIEF EXPEDITION OF AIRPLANES TO THE PUEBLO FLOOD

The expedition of three airplanes sent out from Post Field, Fort Sill, Okla., to render any assistance possible in connection with the flood at Pueblo, Colorado, serves to add to the already large field of usefulness in which the airplane can be utilized. The work expected of the planes sent to Pueblo was to patrol the Arkansas River, Fountain Creek and their tributaries and dams and keep the city informed in case a second flood or any dams or rivers gave way. The flight left for Pueblo on Sunday afternoon, June 5th, by way of Dodge City. The planes were equipped with machine guns, radio and photographic equipment, and piloted by Major Follett Bradley, A.S., First Lieutenant Fred C. Nelson, A.S., and First Lieutenant K. N. Walker, A.S., with First Lieut. Joseph T. Morris, A.S., and Sergeants Gall, Shepard and Corporal Brugh as passengers.

Skirting a number of heavy storms, the flight landed at Dodge City, Kansas, at 6:45 P.M., and found that city in a small state of excitement anticipating the flood which, it was contemplated, would reach there about noon the following day. Shortly after landing at Dodge City, a heavy rain began, which continued until 11:00 o'clock Monday morning, at which time the flight took off for Pueblo. Conflicting telegrams from officials of the State of Colorado as to servicing facilities were received by Major Bradley, who decided that it was advisable to land at Lamar, Colorado, approximately 90 miles from Pueblo, and take on additional gas in order that the planes would in no way be stranded when arriving at destination in case gas and oil could not be secured. Shortly after landing at Lamar, another heavy rain fell. During slight "let-ups" of the storm the planes were gassed, and at 4:00 o'clock the rain had subsided to such an extent that the flight again took off for Pueblo, following the river up to that city. No telegraphic communications could be received from Pueblo, but the Mayor of Lamar had been informed, in an unofficial way, that a second flood had struck Pueblo, worse than the first one, and that a five to ten foot rise was on its way and requested that the radio operators be prepared to receive radio messages from the flight as to river conditions from Lamar to Pueblo. Radio communication was held with Ft. Lyons by Lieut. Morris. The rumor of the second flood proved to be unfounded, and Fort Lyons was requested to inform the towns east of the Fort that no further danger need be anticipated in connection with this second flood.

The flight arrived at ten minutes past five at Pueblo and flew over the city. The first impression of the city that one had from the air was that of a child's toy village which had been inadvertently kicked over by some careless foot. The business section of the town was the portion which had received all the damage. Box cars were strewn in all conceivable and inconceivable positions; in back yards of stores, upside down and crosswise of the tracks. Buildings seemed to be swinging at all positions from their original foundations. One lumber yard, which formerly occupied half a block, was strung over all of the lower part of the city. One steel bridge spanning the Arkansas River was broken in two and the sections lay alongside of each other. After circling the city, a landing field was selected four miles south of Pueblo's business district on the edge of the town and west of slag dumps of the Colorado Fuel and Iron Company. The field was an excellent one, nearly a mile long and half a mile wide, level as a floor, with hardly any disadvantages.

Colonel Hamrock, Adjutant General of the State of Colorado, arrived at the field shortly after the planes had landed, and the officers were taken to the Congress Hotel, at that time the headquarters of the Colorado National Guard and Colorado Rangers, who were in charge of the flood situation. Being located on high ground, this hotel fortunately escaped the flood. It was very crowded and very cosmopolitan in appearance. It seemed that everyone who had had any service

whatever was wearing a uniform. Ex-emergency officers, National Guardsmen, Colorado Rangers, Ex-Royal Air Force officers, Marines and Sailors thronged the place and, together with civilians carrying guns and wearing various kinds of badges, made quite an interesting spectacle. A dynamo of the flooded electric plant was put in operation which furnished the hotel with light, the only building in town so furnished.

No flying being required the next morning, an inspection of the devastated district was made on foot. Dead animals and overturned automobiles were strewn about the city. The mud in some places was four and five feet deep. One Italian settlement was completely washed out; nothing but faint signs of former foundations being in evidence, and all buildings in direct line of the flood were either washed away or their foundations so shaken that they were unsafe to enter. Crews of men in rubber boots and armed with shovels were hard at work endeavoring to clean up the horrible mess. It is nearly impossible to visualize the destruction caused by the high water unless one were actually on the ground and witnessed it. The excellent spirit of the citizens, many of whom had lost everything, was remarkable.

In the afternoon patrols were made of the rivers for 50 miles, and favorable reports were returned to Military Headquarters. There were no further cloud bursts in the mountains, and no further danger from the river was imminent. Daily patrols were made until Saturday morning, at which time the Adjutant General released the flight so that it could return to Fort Sill.

Lieutenant-Colonel Cables, Engineers, requested that a mosaic map be made of Pueblo and a number of devastated mountain towns. An additional plane, more completely equipped for making mosaic maps, was requested from Post Field in order to effectively accomplish this mission.

The flight left Pueblo at 1:30, returning by way of Dodge City, arriving at Post Field at 8:45 P.M., making the return trip in six hours and fifteen minutes and bucking a strong wind all the way.

AIRPLANE RACE FROM HARTFORD, CONN. TO SPRINGFIELD, MASS. AND RETURN

Lieutenant R. C. Moffat, First Corps Area, Army Air Service, piloting a DeHaviland 4, was the winner of the Charles K. Hamilton Memorial Trophy offered by the Hartford Municipal Aviation Commission for the recent airplane race from Hartford, Conn. to Springfield, Mass., and return. The actual flying time for the 48-mile course was 25 minutes and 35 seconds.

The Charles K. Hamilton Memorial Trophy is one of the most handsome awards offered recently for any aviation event. It is a massive silver cup, bearing a likeness of the plane piloted by Hamilton when that famous pioneer was making the most sensational flight of his career. The trophy was presented to the Hartford Aviation Commission by Seymour Wemyss Smith, magazine writer of that city. It was named in honor of Charles K. Hamilton, inasmuch as that famous birdman, who died in 1914, lies buried only a mile or two from the new municipal air port at Hartford, and it was near that city that he made his earlier attempts at air navigation. The race to Springfield on June 11th was almost to a day eleven years from the time, in June 1910, when Hamilton captured the \$10,000 prize offered by "The New York Times" for the first New York to Philadelphia flight.

The race at Hartford was on a handicap basis, and John M. Miller, of Atlantic City, piloting a Curtiss Oriole, was a close second to Lieut. Moffat, losing by only one minute corrected time. Charles ("Casey") Jones, also piloting an Oriole, finished a close third, outdistancing the next nearest competitors.

Mr. Jones captured a bomb dropping contest, making a perfect score. Pilot Stuart Chadwick, former army pilot, who is now making the new Hartford field his home base, was a close second. Lieut. Lott of Bridgeport, Conn., captured first place in a landing contest in which fourteen planes entered, and also won in an aerial acrobatic exhibition. A naval seaplane was winner in a race along the Connecticut River, Hartford to Middletown and return. An HS boat actually made faster time but lost on its handicap.

Judges for the events at the Hartford Aviation Meet were Augustus Post, Secretary of the Aero Club of America; Major Leonard Drennan, commanding the Army's aerial detachment at Framingham, Mass.; Captain Meredith of the Air Service;

and Major William J. Malone, Connecticut Aviation Commissioner. Lieut. Samuel Mills acted as supervisor and Lieuts. Fasteneau and Warrender, Air Service, assisted.

Brainard Field at Hartford is part of the Hartford Municipal Air Port and in the unanimous opinion of fliers who have visited it, is the best aerial field in New England. It was established and is maintained by a city appropriation.

The Hamilton Trophy was accepted by Lieut. Moffat on behalf of the U.S. Army Air Service, and it will be displayed in Major Drennan's offices at Boston.

LIEUT. PEARSON'S FLIGHT TO THE GRAND CANYON IN ARIZONA

Lieutenant Alexander Pearson, Air Service, in making his flight to the Grand Canyon of Arizona, had another interesting experience following his attempt to negotiate the New York to San Francisco transcontinental flight. It will be recalled that on this journey, while flying from El Paso to San Antonio on February 10th, his plane developed motor trouble and he was forced to come down in a canyon south of the Rio Grande river. His plane was subsequently recovered by an expedition sent into Mexico for that purpose; a new engine was installed in the plane and it was flown back to the Del Rio Airdrome. An account of this expedition will be given in a future issue of the "News Letter".

The flight over and in the Canyon was made between 9:00 and 10:00 A.M. on June 10th. Lieut. Pearson states that at the beginning of this flight there was a slight east wind blowing and that it was very warm, the air being quite calm except for "heat swells". It was just as smooth over and in the Canyon as outside except for a strip along each wall, where there was a very noticeable rough region between one-fourth and one-half mile wide, undoubtedly caused by strong uprising currents of air heated by the canyon walls. Lieut. Pearson thought that there would probably be a downward current of air in the middle of the Canyon to replace that rising near the walls, but it was not noticeable. This was probably due to the fact that if there were such a downward current, its downward velocity would be not more than that of the rising current at the canyon wall. This conclusion was arrived at by assuming that there was no longitudinal or up or down stream displacement of air in the Canyon and that the region of uprising air extended one-half mile back from the canyon walls. This would give a rising air volume one mile wide, and as the average width of the canyon is 10 miles it would leave a downward column of air nine miles wide to replace the rising air. Its downward velocity should therefore average about one-ninth that of the rising air. Strong cross winds had the effect of greatly widening the belt of uprising air on the side of the canyon opposite to that from which the wind was blowing, but did not change the column on the other side.

Lieutenant Pearson started for the Grand Canyon from Nogales, Arizona, on May 31st, making stops at Phoenix, Prescott, Ashfork and Williams, and selecting landing fields at each of these places. He arrived at the Grand Canyon on June 4th and spent the day in conference with the Superintendent of Parks and in looking for possible landing fields. He states that no place closer than eleven miles from the Grand Canyon Station was found that was not covered with timber. Fairly good emergency fields were found to the north, west and east of Anita and one at Coconio, one-fourth of a mile east of Anita, which is one mile long and one-fourth of a mile wide, flat, and with good approaches from north, east and southwest. This field was covered with sage-brush 18 inches high and had prairie dog holes in it, but could be made suitable for landing at an expense of \$150.00 or less. Just to the northwest of Anita is a slight rise which is flat on top and on which an excellent field could be made, as a space one-half mile square with approaches from any direction is available. It is level land without any prairie dog holes, but is covered with sagebrush. The altitude of this tract is 6,100 feet, and it would only be necessary to drag it with a railroad iron to put it in excellent

This was the most practicable field found in the near vicinity of the canyon as it is on the railroad, 15 miles airline from the Grand Canyon, and it would cost but little to put it in condition. The nearness to the railroad is an important item, as all supplies, even water, must be shipped in, and roads are none too

Passengers for or from Grand Canyon could be carried to and from Anita on railroad or an auto in one-half hour at all seasons of the year.

Very good emergency fields exist all the way between Williams and Anita and east as far as the San Francisco Mountains and to the west for 30 miles between Anita and Grand Canyon.

On June 5th Lieut. Pearson, in company with the Chief Ranger of the Grand Canyon National Park, went down in the Canyon to look over the plateau. The plateau is 3,750 feet above sea level and while generally level, it is rough or full of small rolls and hollows. Lieut. Pearson states that a landing on any part of this plateau would almost certainly result in a crash, though not necessarily fatal. Two way landing fields of 400 or 500 yards in length by 75 yards in width could be built on this plateau at a number of places at a cost of about \$1,000 each, as the surface of the plateau is of decomposed rock and could be easily worked. No other level of the canyon is at all suitable for any kind of an emergency landing field.

On June 6th Lieut. Pearson started on his return trip to Nogales and arrived there on June 8th. On the following day he flew to Williams, Ariz., which he used as a base because of the close proximity of the field to town and the availability of gas and oil of good quality. It was also the closest field to Grand Canyon that could be used, as no funds were available to prepare fields closer.

On June 11th, the day following Lieut. Pearson's flight over the Grand Canyon, he left Williams at 8:25 A.M., flying by way of Flagstaff, San Francisco peaks, Little Colorado River, Painted Desert, Marble Canyon and Kaibab Plateau. There were few, if any, fields that could be landed in at all after leaving San Francisco Mountains, as it is rough, sandy desert that would surely cause a crash. The Kaibab plateau is a high rolling tract of land heavily covered with timber. There is one unique spot in the Plateau, called Big Park, which for some curious reason is bare. It is approximately one-half mile wide and 5 miles long, lying in a small valley running north and south. It is the only place on the plateau on which a landing could be made. Lieut. Pearson landed there at 10:20 A.M. He states that it is a very good field, and can be used by any plane, without any preparation, if the plane can take off at this altitude - 8,800 feet. He took off without any difficulty and flew in and around the canyon for half an hour. His experiences were similar to those of the previous day. He descended 3500 feet below the south rim of the Canyon and 4500 feet below the north rim. No difficulty was experienced except that the motor became very hot, due to the hot air in the bottom of the Canyon.

On June 15th Lieut. Pearson made another trip to the Canyon, taking off at 2:20 P.M. in a strong southwest wind blowing 40 miles an hour. The air was extremely rough and bumpy all the way to the Canyon. He crossed over and back a number of times at altitudes of from 500 to 4,000 feet above the rim, and found that there was no difference in roughness over the Canyon and land at corresponding altitudes. He did not descend into the Canyon for the reason that it is very unpleasant to fly in such close quarters during rough weather.

Still another trip to the Canyon was made by Lieut. Pearson on June 17th, his experiences being similar to those of preceding flights. On June 18th Mr. Hal H. Bullen arrived at Williams from Kanab, Utah, flying a Curtiss Standard with 150 h.p. Kirkham 6 Curtiss Motor. The weather was ideal - cool and no wind. Lieut. Pearson took off at 7:50 A.M. for the Grand Canyon and returned at 9:50 A.M. Moving pictures were made of this flight under authority of the Chief of Air Service. Flying conditions were like those of the first day and there were no bumps even at the Canyon walls, as they had not had time to heat up this early in the morning.

In summarizing Lieut. Pearson's report, the Commanding Officer of Flight "B", 12th Squadron, states that a total of 14 flights for a total of 22 hours and 5 minutes were made above and in the vicinity of the Canyon during a period of 14 days, 420 gallons of gas and 50 quarts of oil being consumed. He is of the belief that commercial flying across the Grand Canyon and its vicinity is entirely feasible and practical but would recommend that a plane of at least a rate of climb equal to 400 feet per minute at 7,000 feet and a 17,000 ft. ceiling be required of the operating company in order to assure the safety of passengers carried, and that no flying over the Canyon be permitted at an altitude of less than 11,500 feet above sea level or 3,500 feet above the north rim unless a plateau emergency field is built; that if such a field is built with 400 yards runway, flying for sight seeing purposes might be carried on with reasonable safety at 6,000 feet above sea level or 1,000 feet below the south rim provided the plane was piloted within gliding distance of the plateau field. Furthermore, no field should be built closer than two miles of the rim of the Canyon on account of the bumpy air conditions near the Canyon walls which would tend to make take offs and landings difficult.

ESTABLISHMENT OF NEW AVIATION FIELD AT BUFFALO, N.Y.

The Buffalo Aircraft Corporation announces the opening on July 2nd at Buffalo of their new aviation field, known as Morris Field, and offer the Army Air Service the facilities of their field gratis. The field will be open to the general public and no charges will be made except for services and supplies. The Buffalo Aircraft Corporation propose to use this field primarily as an aviation school and hope to turn out many successful aviators and mechanics. The personnel of their organization consists practically of all ex-service men in the United States and Canadian forces.

CURTISS-INDIANA COMPANY

The following communication has recently been received from the Curtiss-Indiana Company, Kokomo, Ind.

"The Curtiss-Indiana Company have just moved on to their new field, and in order to let the general public know what we have done in the promotion of aeronautics, we are going to have a big Aviation Meet on September 20, 21 and 22.

During the last two years the Curtiss-Indiana Company have enjoyed the reputation of having the largest and best equipped commercial aviation field in the United States. Possibly there are other fields which had more acreage than ours but we do not believe that there were any that had more ground which could actually be used for landing or better facilities for flying than ours. However, early this spring we had an opportunity to secure a larger field with absolutely no obstacles in any way and giving us at least one-half mile runway in every direction. Of course our new field is marked with the regulation 100 foot circle and 60 foot cross and is in every way up to the Government requirements. We expect to notify as nearly as possible every pilot in the United States who owns a ship and ask that he come here and take part in this Meet. The program has not been arranged as yet, but undoubtedly we will have a program which will keep the fliers busy during their stay here. Gasoline and oil will be furnished for all of the machines during their stay and there will be automobiles at the service of the fliers. We expect that there will be many thousands of spectators here from all parts of the country and there is no reason why this should not be a huge success, as the people in Indiana are very enthusiastic about flying. There will be many prizes, cups, etc., awarded by the various factories and merchants in this locality and we believe that it would be well worth the while of any pilot to come here. We also expect that we will have at least 25 different types of ships on our field and we anticipate that there will be more than 100 visiting ships."

MUNICIPAL LANDING FIELD AT HARTFORD, CONN.

Mr. Hiram Percy Maxim, President of the Hartford Aviation Commission, recently addressed a communication to the Air Service in which he states that the City of Hartford has a very fine Municipal Landing Field under the direction of the City of Hartford Aviation Commission. The landing field is located directly south of the city, within the city limits and directly on the west bank of the Connecticut River. The distance from the Headquarters Building on the Aviation Field to the center of the city is approximately $1\frac{1}{2}$ miles. The field is L shaped. The larger leg of the L is north and south and is approximately 2,500 feet long north and south and approximately 1000 feet wide east and west. The east and west leg is approximately 1500 feet long east and west and approximately 800 feet wide north and south. The north and south leg is very carefully graded and an almost perfect turf surface prevails over its entire area. In the center of this north and south leg is a large white circle as a marker, measuring 100 feet in diameter and three feet wide. It is made of crushed stone and kept whitewashed.

On the field there is kept high test gasoline and four grades of lubricating oil, including castor oil. A regular Municipal caretaker is on the ground seven days a week. Public flying is done constantly, there being two planes at the field all of the time. These planes are owned by private individuals who use them for taking up passengers.

Lieut. Moffit, of the Air Service Station and the Framingham Airdrome, Mass., recently visited the Field and pronounced it the best in New England. There is near flying ground for at least one square mile, and the conditions are hardly called anywhere in the country.

London

THE AMPHIBIAN'S MERITS

The remarkably fine flight of the Vickers Amphibian-Napier machine from the Seine to the Thames has ~~once~~ again raised the question of the further development of civil aviation with special reference to the possible future of London as an air port. It would seem that the practicability of the scheme needs no further demonstration, for the flight in question, following on the tests carried out by the Air Ministry on the Thames, has clearly shown what great advantages would arise from siting an air-line terminal in the heart of London within easy reach of every place of business in the metropolis. All who watched the alighting of the Amphibian on the river some weeks ago, the starts for her return flights to Brooklands, and her arrival from Paris this week, must have observed that these evolutions were carried out in a very small space and that the machine had an ample clearance when she passed under Lambeth Bridge.

The matter is being raised in the House of Commons in a question by Mr. Gilbert, who has asked the Secretary of State for Air whether it is proposed to establish an air station on the River Thames. Information is also sought as to the erection of a pier, the use of the station by commercial aviation companies, the share the Post Office may be expected to take in utilizing such a service, and the question of river navigation and the interference of the aircraft therewith.

The commercial air services of the country are still run with Government help, and airmen are at present still investigating the problem of a commercially economical airplane. The remoteness of airdromes from the centres of commerce will always be a stumbling block in the progress of civil flying. Amphibious aircraft remove that difficulty. - London Times.

TO INDIA BY AIR IN SIX DAYS

Plans are now being made for a great flight by R 36, England's latest and largest Airship, to Malta, Egypt and India. All sorts of proposals are being considered at this time, and instead of a trip to India it may be decided to make a non-stop journey to Malta and return. Should a decision be reached to make the trip to India, however, the R 36 will make a stop in Egypt for replenishment of fuel. It is expected that the flight to India will take six days. The fastest time by rail and steamer is 21 days.

AIR-EXPRESS RAFT

A wonderful feather-weight raft, for use in the event of a forced descent on the water, has been devised for cross-Channel air expresses. The apparatus comprises two cylinders of compressed air which, when the valves are turned, inflate in 30 seconds two floats, and enable the raft, though its total weight is only 56 pounds, to support as many as four people. The raft can be stowed along the top of an aeroplane fuselage.

Lieutenant Parer, the Australian airman, proposes to start on a flight round Australia this month, accompanied by an observer, a mechanic and a cinematograph operator, for the purpose of raising money to buy a machine for an attempt to fly across the Pacific.

Holland

The largest airdrome in Holland has recently been established at Rotterdam, seven miles from the city. It is rather more than 1,100 yards long by 700 wide and, being perfectly flat and open, is well suited to the requirements of aircraft. A temporary railway has been made to bring gravel and other building material to the site, where a large shed has already been erected. Offices have been put up and premises for Customs, wireless, meteorological observation, a restaurant, and a tower for illumination by night are either already in existence or projected. The whole has been planned on data embodying the latest experience.

France

In an article in the London OBSERVER by Major C. C. Turner it is stated that in tests of commercial aeroplanes arranged by the French Under-Secretary for Air, a Farman "Goliath" biplane, driven by three Salmson 260 h.p. engines, travelled, across country a distance of 2,800 miles in 34 hours (flying time). The course was Paris-Orleans-Rouen-Metz-Dijon-Paris. It had to be flown three times, with halts at a number of specified points, halts elsewhere disqualifying. It is expected that other fine performances will be put up in this contest, for the following machines also were entered: A Bleriot 4-engined triplane; a Latecoere 3-engined biplane; and a Caudron 3-engined biplane.

The Farman "Goliath" is a development from the two-engined Farman daily flying between Croydon and Paris. It weighs (fully loaded) $5\frac{1}{4}$ tons, empty about 3 tons. Its "useful load" in this test was $2\frac{1}{4}$ tons. The pilot was Mons. N. Gonan. The speed of $82\frac{1}{2}$ miles per hour average for the complete tour is very good, indicating, of course, a much higher air speed in calm air; in such a tour wind is favourable in one part and adverse in another, but the net result is reduced average ground speed.

"AND I LEARNED ABOUT FLYING FROM THAT"

Taking off the field one day for a short practice flight, I faced a breeze of about 15 miles per hour from the south, the "T" upon the field being set in accordance with the southerly breeze. I was in the air perhaps 40 minutes, during which time I had flown 25 or 30 miles in a southerly direction. My return was prompted by indications of bad weather and a desire to reach the ground before what seemed to be a bad rain storm, piling up in the west, should break. On approaching the field I discovered from the stocking on the water tower and from the flag at Headquarters that the wind had swung to the north and had increased considerably from the 15 mile breeze which had been blowing over the field at the time of my take-off. However, the landing "T" still indicated that landings should be made from the north and I cogitated for sometime whether to land in keeping with the "T" or in keeping with my better judgment, as based upon the apparent change in the direction of the wind. My decision was finally prompted by the fact that several officers within the preceding week or ten days had been reprimanded for ignoring the "T" in their landings, and so I decided to make the landing from the north. Coming in from the north, I placed my wheels on the ground at the extreme northerly end of the field, but soon found that the breeze on my tail would make impossible stopping the speed of the plane before reaching the buildings on the southerly edge of the field. I traveled as far in a southerly direction as I dared and at the last moment pulled a ground loop which terminated in the plane landing on its back, much to my discomfiture.

Question - "What did I learn about flying from that?"

One of the things which probably impressed me most, during my primary training, was watching a cadet take off. His motor cut out just before he got to some telephone wires and he tried to hold his ship up over them instead of going under them, with the resultant loss of flying speed and a crash. Immediately after the crash, the stage commander gathered his students around him and said: "See yonder, see what happened to that bird. Well now, let me tell you fellows something. You simply can't hold a ship up in the air with your arms, no matter how much you pull upon the stick." That saying still rings through my head when flying - "You can't hold her up with your arms."

SQUADRON NEWS

March Field, Riverside, California, June 18

Over a thousand people visited March Field on Tuesday, June 14th (Flag Day) to witness the Third Annual Air Show. Major Yount, commanding officer, issued a cordial invitation to the public, and those who were present witnessed one of the most successful and spectacular aerial exhibitions in the history of the field. Music for the occasion was provided by the Post Band. There were nine thrilling events on the program, participated in by a dozen pilots and as many planes. Everything from the "cadet's first solo" to aerial acrobatics was demonstrated. An altitude race, a three-cornered 50-mile race and "the dead stick" landing seemed to occasion the greater interest. Following the aerial events, officers and enlisted men guided the visitors about the post, where they were permitted to observe the interesting features of the school at close range.

Lieut. Harry Colliver has joined the "Benedict Club", having been united in marriage last week to Miss Helen O'Dell of Los Angeles.

Major Shepler W. FitzGerald, commanding officer of the Repair Depot at Rockwell Field, Captain Randolph and Lieut. Vanaman were aerial visitors at March Field on Thursday.

Fifty planes during the past week made a total of 426 flights covering an approximate aerial mileage of 15,550, and consuming 239 hours and 15 minutes flying time. Preliminary instruction required 188 hours and 30 minutes; test flights, 1 hour and 50 minutes; and miscellaneous flights, 48 hours and 55 minutes.

Air Service Mechanics School, Chanute Field, Rantoul, Ill., June 21

The Air Service Reserve Officers Reunion, held at Chanute Field on June 17th to 19th, was an unqualified success. The object of the Reunion, which was held under the direction of Major Wm. C. McChord, Sixth Corps Air Officer, and Major George E. Stratemeyer, Commandant of the Air Service Mechanics School, was to bring Air Service Reserve Officers together, stimulate their interest in the post war Air Service and give them an opportunity to fly.

The Reunion succeeded in all of this and more, for not only did the officers present obtain their fill of flying, but there was organized the Sixth Corps Area Air Service Reserve Officers Association, which promises to fill a long felt want. This organization took form on the evening of June 18th at a meeting of the Reserve Officers and the officers of Chanute Field. Captain Philip Kemp, R.M.A., A.S., was elected chairman of the Chicago Chapter, which will be the parent chapter of this Association. It is planned to have chapters throughout the Sixth Corps Area. Among the aims of this organization are: To form an association of Reserve Officers of the Air Service in order that information along professional lines can be quickly disseminated; to keep Reserve Officers in touch with each other; to provide an organization whereby the sentiment of the Reserves can be crystallized and their wants made known through the proper channels to the proper authority; and to provide a nucleus for the organization of future Air Service Reserve units. A total of 42 officers from Illinois and Michigan were present. Many old friendships were renewed, interest in the Air Service was stimulated, and considerable practical training on the present Air Service planes was given. It is believed that this reunion will have a far reaching effect.

On Saturday evening, June 18th, the officers and ladies of Chanute Field gave a hop in honor of the Reserves. Everyone present had a very enjoyable time.

Flag Day was celebrated at Chanute Field on June 14th; the troops of the post being reviewed at 10:00 A.M. by the Commandant of the School, the Mayor of Rantoul and several G.A.R. veterans. A short band concert followed, after which the troops, civilians of the post and citizens of Rantoul were addressed by the Commandant, the Mayor of Rantoul and several of the prominent citizens. In the afternoon the post baseball team staged an exciting game with the Outlaws (a team composed of the stars of the Air Service Mechanics School Twilight League) and won out in the last inning. The game was well attended.

Some weeks ago the Twilight Baseball League was organized, Master Sergeant Humphrey T. Beck being elected President. The league is composed of four teams,

made up of the personnel of the post. Each Tuesday and Friday evening these teams meet and play 7 innings just at sundown. Very keen competition has developed. The people of Rantoul are taking considerable interest in this league and have donated a large trophy cup for the winning team and a pennant for second place. The organization of this league has proved one of the best steps towards developing morale which has ever been attempted at this post.

24th Balloon Company, Fort Baker, California, June 18th.

The 24th Balloon Company, operating two balloons, had a moderate time in the air the past week, making three flights for a total period of 7 hours and 54 minutes, despite the fact that both times the weather was very unfavorable for flying.

The class in Balloon Fabric Work started last week is proving very successful, and all available men are attending same.

Crissy Field, San Francisco, California, June 21.

The new buildings for Crissy Field are completed and ready for occupancy. Major H. H. Arnold, Air Service Officer of the Ninth Corps Area, had already moved his office from the Santa Fe Building to the new Headquarters at this field.

Artillery observation was resumed last week, Fort Barry having called on the planes twice for observation on the 12-inch rifles. Cooperation between the planes and Fort has reached a high degree of efficiency. Observation on shots as sent in by the planes are running from eighty-five to one hundred per cent correct. Radio communication from plane to Fort continues to be 100 per cent.

Carlstrom Field, Arcadia, Florida, June 15.

The students are mostly on cross country or have about completed their course. Fort Meyers and Sarasota are being visited regularly each day. Some of the citizens remarked they thought they had an Aerial Taxi line in operation because ships were so numerous until they investigated and found that the students were training in cross country flying.

Captain L. Appleby and Lt. J. McMullen flew from Montgomery, Ala. Air Intermediate Depot in a DH-Ardmont "Maid" in 4½ hours on Saturday morning. They reported an excellent trip. Captain Appleby came to this station to take his airplane pilot flying test.

Major Ralph Royce and Major E. Naiden flew cross-country to Jacksonville, Fla., on Tuesday and returned the next day, reporting an excellent trip.

Captain Romeyn B. Hough, 1st Lieut. Robert M. Webster and 1st Lieut. Julian B. Haddon of the Air Service, having completed their tests, are now rated as Airplane Pilots.

The Carlstrom Field Baseball team journeyed to Fort Meade, Fla., and met defeat at the hands of the local fast team by the score of 13 to 8. It was a heavy hitting contest, Scaggs featuring for Fort Meade and Sgt. John Dee of Carlstrom hitting a home run.

Flying time for the week shows a total of 36 ships in commission with a grand total of 349 hours and 45 minutes flying, and a total of 343 flights from this field.

Hdqrs. 91st Squadron, Municipal Flying Field, Eugene, Oregon, June 11.

Last Thursday night the American Legion of Eugene gave a banquet and dance in the rooms of the local Chamber of Commerce, and the whole organization was invited. Nearly all the members of the command were present. The "chow" was very good, the crowd and the floor were excellent, while the music was beyond praise. ryone reported a wonderful time.

The Squadron sent 3 ships to Portland on Thursday, Lieut. Batten with Mr. Iell as passenger, and Sergeants DeGarmo and Woodgerd. While in Portland, Pendell had a conference with the District Forester of the Sixth District.

Captain Richard Derby, C.A.C., former aid to Lieut.-General Liggett, former Area Commander, visited Squadron Headquarters this week. He is on an extended auto trip through Oregon and has received his orders transferring him to Air Service.

Flight "B", 91st Squadron, Camp Lewis, Wash., June 11

A record in spotting and reporting forest fires is believed to have been established here on Wednesday, June 8th, when a fire located near Port Angeles, a distance of 85 miles, was received at this base by radio and relayed to the District Forester's Office at Olympia by long distance telephone in a total elapsed time of five minutes. Another fire was located the same day and reported in a like manner in seven minutes. Olympia is ten miles from Camp Lewis.

A new landing field has been put in shape by the Post Utilities Department of Camp Lewis. This field covers part of the section of the parade ground just east of Fourteenth Street and is a decided improvement over the one used in the past in that it has been carefully graded and smoothed, and all interfering obstacles removed.

Mather Field, Sacramento, Calif., June 11th.

A Rest Camp in Stanislaus National Park is now in process of preparation, Major B. M. Atkinson and Captain A. D. Smith, with a detachment of enlisted men, having proceeded to that place to make the camp ready. The camp will be in charge of Captain Smith, and, with the extreme heat experienced during the summer months in this vicinity and long tiresome flights on forestry patrol duty, the pilots of this command will find a welcome place for short periods of relaxation.

On Monday evening Mr. Thomas Watt, a "Y" Secretary from Sacramento, delivered an address at the Service Club. Judging from the attention paid to his remarks on the ability of young men, the audience evidently found the subject more than merely momentarily interesting. Mr. Watts was a "Y" Secretary at Mather Field during the war.

Lieutenants John H. Slattery, Eugene B. Bayley and Alfred E. Waller of this command acted as judges at a competitive drill given by the six companies of the Sacramento High School cadets at Carragher Field, Sacramento, on June 10th. Major A. E. de Hermida, who is in charge of the cadets this year, saw active service in France and Italy during the war, and has put some of the snap of the army training into the boys' work. In the opinion of the judges from Mather Field, Captain Tom Cox gave not only the best drill of his squadron but his was the best drilled unit in the High School Regiment. The other five captains received favorable comment, but minor occurrences lost them the favorable consideration awarded Captain Cox.

First Lieut. George W. Pardy, 9th Squadron, left on the 6th for a leave of absence of 25 days. He has been with that squadron since its organization, and the command is sorry to lose him. He is under orders to report to Manila, P.I., for assignment to duty upon the expiration of his leave.

On June 5th Captain Albert D. Smith, Air Service, reported back from the Letterman General Hospital, where he had been undergoing treatment since the early part of April. His condition is very much improved.

8th Airship Company, Camp Bieme, El Paso, Texas, June 12.

Practice maneuvers with a Caquot balloon were carried on during the past week while alterations and repairs are being made on the airship. On Wednesday the balloon was maneuvered across the country over various obstacles, crossing several high tension wires of 13,000 volts and 16 overhead crossings were successfully overcome. Thursday morning the balloon was maneuvered over to the new Station Hospital, near Mt. Franklin, and photographs were taken of the hospital buildings by Sergeant Rhodes of the 1st Photographic Section.

France Field, Cristobal, Canal Zone, June 4.

A large party of enlisted men of the post inspected the canal locks at Gatun on Wednesday on a trip sponsored by the Service Club hostess. The visit to the locks was made doubly interesting by the explanations of Mr. S. M. Perkins of the Lock Operations Office, who guided the party around the lock machinery chambers, the control tower, emergency dams, and the huge Gatun Lake spillway. From Mr. Perkins' experience in over ten years' connection with the canal, the party gained many interesting facts about the construction and operation of the series of locks.

The officers' polo team, after two months of constant practice since the last games, will meet the strong team of the 12th Cavalry at Camp Gaillard this week end, and although the reputation of the Gaillard players promises a close game, the France Field team is confident of victory. Under the leadership of Lieut. Clark, field captain, the team has worked hard at practice and expects to keep the season's record clean when sticks are crossed with the Cavalrymen.

The teams engaged in camera obscura practice put in a busy week over the target and at the very start of the schedule the bombers are making some excellent scores. On a chart posted at headquarters, each team is scored on a percentage basis, the flights over the target scored out of possible straight bull's eyes, and the rivalry between the teams is tending towards high averages. Up to the present time 1st Lt. A. L. Foster and Corporal Bloomstrand have scored the greatest number of bull's eyes, while 1st Lt. H. B. Chandler and Captain A. C. George have made the best aggregate scores.

On Monday a three plane formation was made to scatter flowers at the Mount Hope cemetery, Cristobal, in connection with the Memorial Day exercises there. The pilots of the flight were 1st Lieuts. Blessley, Chandler and Moon.

Several cross-country flights are planned for the coming month in order that the replacement officers who recently arrived at the post may become acquainted with the landing fields in the interior of Panama. Nearly all of the officers who established the inland fields will be leaving the post in the near future, and the benefit of their explorations is to be passed on to the succeeding pilots.

8th Squadron (Surveillance) Airdrome, McAllen, Texas, June 11

The solitude of the camp has been considerably disturbed during the past two weeks when members of the Texas Press Association, four hundred strong, were interested spectators at the Airdrome. Some of the scribes from Houston, San Antonio, Dallas, Waco, and other Texas towns, signed away their lives and took a glance at the Magic Valley from above. Needless to say, they were agreeably surprised at the picturesque country beneath them, and enjoyed the sensation of riding thru the clouds propelled by four hundred horses. Two notable passengers were Anne Webb Blanton, Supt. of all Public Schools in Texas, and Colonel Davilo of the State of Tamaulipas, Mexico, who was the official representative of the Mexican Government. The editors who braved a ride in the clouds unanimously agreed that in the past undue publicity has been given to airplane crashes, inferring that more should be said of the safety of the airplane.

During the Texas Press Convention a huge barbecue was held one night at Reynosa, Mexico, and the little town across the river was kept open till midnight. No passes were necessary to visit Mexico, and all the officers of Camp McAllen visited our sister Republic with Governor Neff and the Press Committee. While over there the party had the pleasure of meeting General Lopez, Commander of the Matamoras District, and his staff.

Major Rufus Scott, who commanded the Aviation Supply Depot at Kelly Field during the war, recently paid a visit to the camp. At present he is at his ranch at Santa Cruz, several miles north of Edinburg. Our small station, pleased him very much and he promised to pay another visit in the near future.

On June 22nd a Field Meet was held at the Cavalry post, and with hardly any previous preparations our little organization romped off with third honors, and would have easily won the meet if some of our entrants had been placed in a few more events. The particular star of the meet was Corporal Wallace L. Maylin, 8th Aero Squadron, while Acting 1st Sergeant Young, Corporals Haynie and Colson and Privates Walker and Boyd contributed largely to the success of the Squadron.

Air Service Observation School, Post Field, Ft. Sill, Okla., June 11

As everyone who has been at Post Field knows, high winds and all kinds of air currents prevail here most of the time. Lieut. Theodore J. Lindorff claims the discovery of a new convection current which he reports prevented him from making a landing one day last week. He made several attempts to get down, but says that each time he touched the field this new current caused him to bounce many feet in the air, necessitating his going around again. He finally got the ship down safely and proceeded to confidentially tell all the pilots on the line about this new air current. However, no one was dismayed by this new discovery, the flying went on as usual.

Air Service Observation School, Post Field, Ft. Sill, Okla. (Cont'd)

The so called Hoodoo Ship No. 13 almost broke its excellent record for reliability Wednesday. Most of the officers look at this ship askance when they go out on the line to fly, heaving a sigh of relief when they find it already in the air or otherwise not available. Major Clarence L. Tinker had a forced landing with it Wednesday - so old 13, despite the handicap of its number, seems determined to live down the popular superstition that its number is unlucky. The nearest it has come to causing anyone worry so far was one day when a piece of its right exhaust pipe flew off, barely missing the pilot.

The enlisted men gave a dance in the Service Club Tuesday night, about 35 couples being in attendance. Lee's Orchestra from Lawton furnished the music. These dances are becoming very popular with the enlisted personnel, as evidenced by the growing attendance.

Lieut.-Colonel Paul W. Beck, Air Service, has been relieved as student officer in the Observation School and assigned as Assistant Commandant of Post Field, vice Major Follett Bradley, who is to take the Engineering course at McCook Field, Dayton, Ohio, beginning on or about September 1st.

By defeating the Observation School Detachment, the 22nd Squadron Baseball team clinched the inter-organization championship of the field, maintaining a perfect percentage for the season. The Communications School Detachment were their nearest competitors with 3 games won and 2 lost.

Practical work, such as Infantry-Artillery liaison, reconnaissance and other flying missions in connection with the Schools, was interrupted during the week by intermittent rains. All school theoretical work has been conducted as usual, but this rainy day schedule which was devised in order that additional instruction could be given whenever weather prohibited flying, is nearly exhausted for the entire school term by reason of this rainy weather.

32nd Balloon Company, Camp Benning, Ga., June 22.

The birth of a daughter, Anne, on June 5th, was announced by Lieut. Ambrose V. Clinton of this company. He has been granted a two weeks' leave which he will spend with his wife and little daughter in Savannah, Ga.

Private Gurfein (Alias Griffin) added materially to the Company's laurels June 14th by winning the decision in a boxing match with a heavyweight (200 lbs.) at the Majestic Theatre at Columbus.

Captain William E. Kepner, Air Service, arrived from Arcadia, Calif., on June 6th, where he was on duty with the 1st Balloon Company. Captain Kepner enjoyed a 20-day leave en route at the home of his parents in Indiana.

The Balloon Company is preparing to take part in the graduation demonstration scheduled for June 29, 1921.

The Air Service Basketball five won the cup for being the best team at Camp Benning, and now the baseball team is endeavoring to follow suit.

Kelly Field, San Antonio, Texas, June 11.

On Tuesday, June 7th, the 2nd Division celebrated their famous victory in the battle of Mont Blanc Masif. The complete reproduction of that battle was carried out as far as possible, the battle beginning with a simulated barrage and counter battery work, after which the infantry was advanced in a series of these lines, the front line being re-inforced as the objective was neared.

A patrol of five S.E.'s established a barrage patrol from H minus forty five minutes until H plus fifteen minutes. At H plus twenty minutes the three leading ships attacked and drove off the two DeHaviland planes which were protecting a supposed enemy balloon. The enemy balloon was shot down at H plus thirty five minutes, and the two observers made parachute jumps. Thru some error the balloon, which was supposed to be an enemy balloon, was anchored in friendly territory but we were faithful to our orders and for the benefit of the spectators shot it down anyhow. A rather amusing incident was the fact that the balloon party was so interested in the battle that they forgot to pull down the balloon.

Most of the officers from Kelly Field attended the barbecue given by the officers of the 2nd Division immediately after the battle.

On Tuesday night the usual enlisted men's dance was given at the Hostess House; the Kelly Field Band furnished the music and all had a nice time.

The dance given on Wednesday night by the enlisted men at Air Park No. 5 was the best of the season. Their insignia was painted on the walls, which added greatly to the appearance of the ball room. During intermission a regular dinner was served, which was very delicious and enjoyed by all. The evening will long be remembered by all present.

Great enthusiasm was shown in Baseball during the past week. The Kelly Field Post Team played Fort Sam Houston Thursday afternoon, winning the game by a score of 15 to 3. The game was a one-sided affair thruout and Kelly Field was never in danger. This victory almost clinched the pennant for Kelly Field in the Army League.

There were several baseball games between the squadrons during the week. The 27th Squadron (Pursuit) forfeited its game with the 17th. The 17th Squadron met the 20th Squadron, the champions of the Bombardment Group, Friday afternoon and won by a score of 10 to 3. The game was one-sided from the beginning.

The Hop Committee arranged an officers' dance at the Aviation Club Friday night. The San Antonio Band furnished the music and everyone had a good time.

The 1st Group now has ten officers assigned as students for advanced pursuit training. This completes the eighth week of the course. The schedule for next week includes aerial gunnery, dummy bomb dropping, camera gun combat, several protection patrols, a tactical formation and several lectures.

Lieutenant William J. White, Air Service, was granted a twenty-five day leave of absence to take effect about June 10th, 1921.

Balloon Company No. 31, Camp Knox, Ky., June 11.

During the past week the 31st Balloon Company was very busy preparing its field equipment to take the field in the Brigade maneuver. The Balloon which the company has been using was deflated, as its purity had gone down, and it is to be carried to the new position and inflated there at night. An F.W.D. ammunition body truck with a windlass on the rear has been received from the 2nd Field Artillery and it is being equipped for use as a balloon tender. Hooks and racks are being placed on the sides to carry all the maneuver gear, such as long rope, short rope, rest rope, double hook snatch blocks, spiders, etc. This is nearly completed, and it was used Thursday on a maneuver. The balloon was taken out across country and some valuable practice had.

The Baseball team suffered a defeat of the Heavier-than-Air team on Tuesday. The team is not downhearted, however, as it is showing improvement and the spirit is there. The entire company participated as rooters and in that respect, "put it all over" the Heavier-than-Air Detachment.

Mrs. Benson, wife of Lieut. Benson, arrived Monday, and both are quartered for the present at the Officers' Club.

The first of the summer students came in Monday - quite a few officers and noncommissioned officers of the National Guard - for a preliminary short course preparatory to the course to be given the regiments.

Fairfield Air Intermediate Depot (Wilbur Wright Field) June 11

Saturday, June 11th, was designated as Wilbur Wright Day, it being the occasion of the annual picnic of the civilian employees of this station. All of the officers and the enlisted personnel were the guests of the civilian employees at their picnic at Tecumseh Park on the Mad River. The day was very pleasantly occupied with an interesting program of athletic events and band concerts, and on Monday morning the entire personnel returned to work with renewed enthusiasm, declaring the picnic to be an unqualified success.

Golf is still finding its enthusiasts among the officers of the Post, and after Retreat each night wherever you find officers congregated you hear the rits of various drivers, brassies, mashies, etc., being avidly discussed. No world's records have been beaten as yet, but many of the officers, including the artermaster, the Athletic Office and the Commanding Officer, and, in fact, all the officers, are gradually cutting down their game, so that old man "Bogey" is no more terrors than the ordinary hop in a "Jenny". A handicap match is being contemplated in the near future, and an extra edition of the News Letter will be required to publish the score.

Fairfield Air Intermediate Depot (Wilbur Wright Field) June 11, Cont'd.

The class in music has shown exceptional improvement, and public recitals have been given with the greatest success. The class is greatly in demand and are giving concerts at the various surrounding small towns.

Work on the swimming pool is progressing rapidly. The present hot weather causes all to view the operations of the Utilities Officer with interest. The plans of the Athletic Office at the present time are to erect a gymnasium and running track over this pool, in order that indoor sports may be promoted.

The baseball team played a team of semi-professionals in Dayton on Sunday, May 29th, and won easily by the score of 15 to 5. It is becoming a problem to find teams capable of furnishing competition against the Post Team. Several games are contemplated for this month, among them being return games with Ft. Thomas, Ky. and the 5th Corps Area Headquarters, at which time it is hoped revenge will be secured for the loss of the first games.

The Engineering Department is continuing in its rush for production. Two Martin Bombers have been turned out and tested, also two DH Hospital ships and one Fokker. Ten Wright, four Liberty and one Mercedes engines have been rebuilt and tested on the blocks. The Radio Department has rebuilt and tested seventeen Telephone Receiving sets, (B.C.12), and fifty Air Driven Generating Sets, (S.C.R. 73).

Mr. Richard Phillips landed at this field with motor trouble while on his way from New York City to Arkansas City. Flying alone on a pleasure trip in an S.V.A. plane, Mr. Phillips had five forced landings due to motor trouble prior to landing at this field. He expects to get away shortly.

Major George E.A. Reinburg and Captain Shiras A. Blair, with their families, were visitors at the Wilbur Wright recreation camp on Indiana Lake over the week end.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field, informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE JULY 23, 1921

THE EXPEDITION INTO MEXICO TO RECOVER THE PEARSON PLANE

A very interesting report has just been received reciting the details connected with the expedition across the Mexican Border to recover the airplane abandoned by Lieut. Alexander Pearson in February last when, flying from El Paso to San Antonio, he was compelled to make a forced landing in a canyon south of the Rio Grande River, due to his plane developing motor trouble.

The expedition proved to be a success in every way and the plane was recovered. More remarkable, however, was the fact that, although this ship was exposed to the elements for several months, it was found to be in such condition that it was only necessary to install therein a new motor on the spot where it had landed to enable it to be flown back over the Rio Grande to United States territory. This expedition demonstrated what could be accomplished in the way of traversing unknown territory on a mission of this nature, or one similar to it, with airplanes from the home base serving as liaison.

Communication between the airplanes and the expedition was maintained by a system of ground panels devised prior to the start. The planes not only maintained efficient liaison between headquarters and the expedition, but on several occasions, when food and water were almost exhausted and pigeon messages had been sent asking relief, the aviators from the Sanderson Airdrome circled over the party, dropping water, rations and mail. The water was dropped in regulation canteens, placed in grain bags filled with hay, about a dozen to a bag. None of the canteens burst, despite the fact that one bag was dropped from an altitude of at least 1,000 feet. On the other hand, canned beans, hard tack, and jam, dropped from a lower altitude, opened up wide. The coffee and bread stood the drop O.K. A little experimenting along this line would no doubt develop a system of dropping articles from airplanes with no damage to the container or contents.

After Colonel Sedgwick Rice, the Commanding Officer of Camp R.E.L. Michie, Del Rio, Texas, had made the necessary arrangements with Colonel Ramirez, Chief of Staff of the Piedras Negras District, Mexican Army, to allow the expedition to cross over the Rio Grande with the view to recovering the abandoned plane, Lieut. Colonel Charles O. Thomas, Jr., Cavalry, was assigned the task of reconnoitering the road to the location of the plane and to determine the feasibility of reaching it with a truck.

On April 28th Colonel Thomas, with Mr. Barker of Del Rio, Texas, and Mr. King of La Parida, Coahuila, Mexico (acting as guides) Lieut. Doolittle of the Air Service, and two Mexican guides, proceeded to Villa Acuna, Coahuila, Mexico, in three automobiles, and started over the Las Vacas-Zaragoza road to the abandoned plane. In the afternoon of the same day, Lieut. A. Dayton left the Del Rio airdrome to furnish liaison with the party. He met with a mishap, however, the crankshaft of his motor breaking, and he was forced to make a landing six miles west of El Mosco Tank, Coahuila, Mexico. Lieut. Dayton and Private Horowitz, his observer, abandoned the plane and walked to a goat camp where they spent the night. The next morning they were discovered by Lieuts. Moore and Selzer who had been dispatched by airplane to locate them. These latter officers dropped a message to Colonel Thomas notifying him of the location of Lieut. Dayton and Private Horowitz, and they were picked up by his party a few hours later. As was the case with the Pearson plane, a new motor was subsequently installed in the Dayton plane and it was flown safely back over the border.

M.E.C.

On the morning of April 30th Colonel Thomas's party, which was then within three miles of the Pearson plane, ran short of water, and they communicated that fact by holding up a canteen when Lieut. Stenseth was flying over them. A message was dropped by Sgt. Dorcy, the observer with Lieut. Stenseth, stating that they would return to Sanderson and obtain same. Lieut. Stenseth obtained 12 canteens of water and 50 pounds of ice at Sanderson and he, and Lieut. Woodruff in another plane, started back to Colonel Thomas's party. It was necessary to use undue haste owing to an approaching storm. The water and ice were delivered, but the pilots experienced considerable difficulty in returning to Sanderson, being forced to fly through a severe electrical storm which overtook them.

On the morning of May 1st Captain N. R. Atwell, with a pack train, escort and a supply train, the whole comprising 22 men, 106 animals, 5 escort wagons, one light wagon and two water carts, with one enlisted man of the Signal Corps carrying 15 pigeons for liaison work, proceeded to join Colonel Thomas and continue under his direction. The party was accompanied by Mr. Barger and Mr. Shiverick, acting as guides, and carried rations for 15 days.

Lieut. Doolittle returned to Del Rio by automobile on May 3rd, stating that he had inspected the Pearson plane and that it was perfectly feasible to reach it by truck, install a new engine in it and fly it back. Accordingly, the next morning, accompanied by four mechanics, he was sent back with a light truck and another engine, and reached Colonel Thomas in the evening.

It was decided to repair the Dayton plane first, and, on the morning of May 6th Lieutenants Doolittle and Moore with their detail of mechanics proceeded with the work of installing a new engine in this plane. The next morning the entire detachment turned out to clear a field for Lieut. Moore to rise from. At 11:00 a.m., everything having been carefully inspected and tested, Lieut. Moore with an observer took the air in the Dayton plane, circled over the party several times, and then shot off due east, landing safely at the Del Rio Airdrome about an hour later. There being no need for the wagon train, Captain Atwell was instructed to return to Del Rio, taking with him the old motor from the Dayton plane, and the remainder of the party started off for the Pearson plane.

Considerable difficulty was experienced en route, the sand, gravel and large boulders making it troublesome for wheel transportation. All difficulties were overcome, however, and the party arrived at the Pearson plane on the morning of May 8th. Work was immediately started on taking out the old motor and installing a new one. Those not working on this job began clearing a field for Lieut. Doolittle to rise from. A space more than 400 yards long and 100 yards wide was cleared. Every bush, soto stalk, Spanish dagger and Lecheguilla plant was cut below the ground and then a drag made of the timbers, which had been brought along for use in lifting the motors into place, hung behind the G.M.C. truck, and the field made perfectly smooth. Not the slightest thing that could be thought out in advance was left undone to give the nervy little aviator every opportunity to have the odds in his favor.

Colonel Thomas, in commenting on Lieutenant Doolittle's feat of flying back the Pearson plane, stated:

"To simply fly this plane out from where it was was no feat for an aviator of Lieutenant Doolittle's ability, but to change the motors, putting in one that had been overhauled sometime before, and that in a plane that had come down under a forced landing and had been left in that dry country exposed to the hot sun for more than three months, even though every part was tested so far as we could out there, it took a lot of nerve, I say, to step into that particular plane and switch on the gas."

Being fresh from the same job at the Dayton plane, the mechanics stepped right along with the changing of the motor in the Pearson plane, and all was about ready for the plane to take the air on the afternoon of May 9th, when trouble turned up in the oil pressure. After working with this for hours, going over every part of it, it looked as though matters would be delayed until a new pressure gauge could be secured. In order to lose no time, water being a factor, a message was sent by pigeon asking for two new pressure gauges. This message, sent by pigeon No. 2619, was the prettiest work done by any of the pigeons. This pigeon, although cooped up in a basket for nine days, bumped over the roughest of roads for 160 miles, and at that time 125 miles by air line from Del Rio, was given the message at 12:30 noon, May 9th, and it was delivered the same

afternoon in time for Colonel Rice to get Lieut. Harbeck at the Del Rio airdrome and send Lieut. Moore in his plane to Sanderson before dark, ready to take the two oil pressure gauges to use the first thing in the morning of May 10th, or as soon as the fog would clear.

Colonel Thomas, in touching upon the work of the pigeons, stated that in his experience there is no limit to the time you can carry them in a basket cooped up, but when you take them out to start them on their way it is not advisable to rush them off. Put them down quietly in the shade, let them rest a little and walk around and go of their own accord. They will take from half to three-quarters of an hour before starting, but when they do start they are fresh and you can count on their delivering the message.

As events subsequently proved, it was unnecessary for Lieut. Moore to start out from Sanderson to bring the gauges. The mechanics, after working for hours on the oil line, finally took out the pump and upon examining it found the source of the trouble, a small washer having been left out of the pump. In short order a washer was taken out of the pump of the old motor and placed into the new one, and very soon the oil pressure came up.

Early in the morning of May 10th, the final arrangements were made for the start when the oil pressure again began to act badly - this time, however, from a different cause. The night had been very cool, causing the oil in the motor to stiffen. After a delay of two hours, during which time the oil was taken out in buckets and warmed up, everything seemed to be in perfect order, and at 7:50 a.m. Lieut. Doolittle climbed into the Pearson plane and took the air. His course in the canyon was due north over a range of mountains some 1500 feet high. He had to gain this altitude in the first two miles. This he did, the machine rising gracefully over the first peak. In due time he arrived safely at the Del Rio Airdrome. Colonel Thomas and his party then started on their return journey, arrived at Villa Acuna at 4:00 p.m., May 11th, where he was met by Colonel Rice, and by 5:30 p.m. all were across the Rio Grande and back in the States, bringing every part of the old motor from the Pearson plane.

In concluding his report, Colonel Thomas states:

"The services rendered by Mr. G. W. King as guide and interpreter were most valuable. His knowledge of the country made it possible for us to find a road through that rough country for sixty miles for even the heavily loaded trucks where wheel transportation had never been before.

Sergeant Malkamas and his three assistant mechanics of the Air Service, gave the very best they had in them, and the safe flight of Lieutenant Doolittle demonstrated the efficiency of their work. To Lieutenant Doolittle I feel it is difficult to express in words the efficient manner in which he did his job. The Air Service undoubtedly is, and I know I am, proud of the nerve the flying of this ship from its difficult position required after being exposed to the weather for three months."

THE FLIGHT OF THE DAVIS "CLOUDSTER"

Aviators David R. Davis and Eric Springer, who attempted a non-stop flight on June 27th from March Field, Riverside, Calif., to New York City, in the Davis "Cloudster", especially built by Mr. Davis for the purpose, were forced to land at El Paso, Texas. They returned to Los Angeles by train to prepare for a new flight, planning to return to El Paso with new parts for their machine, fly back to Los Angeles, and then take off again.

The Davis "Cloudster" was built in Los Angeles, and is said to have cost approximately \$45,000. The ship has a wing spread of 56 feet, is 36 feet long and 14 feet high. The power plant consists of a single 420 h.p. Liberty engine the fuel capacity being 670 gallons of gasoline and 50 gallons of oil, the plane weighing, fully loaded, 9,600 pounds.

Both Davis and Springer contemplated making the transcontinental flight in 24 hours, the plane carrying a fuel supply for 30 hours. It is already claimed for the ship, flying light, the Pacific Coast altitude record - 19,600 feet. It was planned to follow the Southern route through Arizona, New Mexico and Texas, and thence northeast across Kansas and the middle western States, with Mineola, Long Island, as their goal.

FIRST FREE BALLOON FLIGHT IN THE PHILIPPINES

The first free balloon flight in the Philippine Islands was made on Friday, May 20th, from Corregidor Island by the 27th Balloon Company, using a Caquot Type "R" Observation Balloon. The only change made in the balloon used was cementing the rip panel, instead of having it sewed, and changing the valve cord by bringing it down through the diaphragm in order that a more direct pull could be obtained on the valve. The balloon when received had been in its original chest from the factory for over 18 months and had deteriorated to such an extent before being flown as a captive balloon that it had to be patched in three hundred and fifty places and, in spite of this fact, after two weeks it had to be condemned on account of porous fabric.

Corregidor is situated 30 miles down the bay from Manila, and the only time it is possible to make a free balloon trip is between the months of May and October, during the typhoon winds which blow in a northeasterly direction towards the mainland. During the other months of the year the Monsoon winds blow southwest direct to the open China Sea, making flights impossible. An added disadvantage to free flights from Corregidor is the fact that, unless the wind carries the balloon within ten miles either side of the City of Manila, a landing would ordinarily have to be made in the "Bundocs" (uplands).

The balloon left Corregidor at 3:50 p.m. with 1st Lieut. W. A. Gray, pilot; Warrant Officer Robert E. Lassiter, assistant pilot; and Staff Sergeant F. C. Goldquist, all of the 27th Balloon Company. The wind was blowing about 15 miles an hour directly up the bay in the direction of the City of Manila. Not having a stasticscope, an altimeter which registered in 200 foot intervals only, was used. Due to this fact, a great deal more ballast was used than ordinarily, as this particular type of altimeter registers about 200 feet late in changes of altitude and the passengers being interested at times in watching the sharks and Japanese fishing smacks in the bay, it registered from two to four hundred feet change before being noticed, which was an actual change of perhaps 500 to 700 feet. Thus, several times too much ballast was thrown out to break the fall, causing the balloon to ascend higher than desired. In Manila Bay the air about 300 feet is full of "eddies" and on this trip the balloon kept turning continually.

When opposite the Naval Station at Cavite, 17 miles from Corregidor, the balloon ran into a tropical rain storm, which swept it along in its course in a northerly direction. As the fabric got wet huge bubbles of hydrogen were seen floating in the atmosphere, due to the porous fabric.

About 5:15 p.m. the balloon was over the land, and after traveling six miles over low marshes the drag rope was dropped. At 5:40 it began to get dusk, and a dry field close to a main road and railroad station was chosen for a landing field. The balloon was valved down, the panel ripped about 40 feet from the ground, and the basket was set on the ground with only the slightest jar, making a landing which could not have been bettered by a spherical balloon. The rip panel only partly came off, thereby consuming a much longer time for the gas to escape than usual.

On landing, at least fifteen hundred Filipinos rushed on the field towards the bag, and as these natives continually have lighted cigars and cigarettes in their mouths, it looked as if there was a good chance of a fire breaking out in a few seconds unless the crowd could be kept a distance away; and explaining to a crowd of Filipinos who only speak Tagalog is some job. Happily, the "Presidente" of the town (which proved to be Bocaue, Bulacan Province, 25 kilometers from Manila) was in the crowd, and with his help order was obtained. The Filipinos in their native foot wear, bare feet, did good work helping to deflate and roll up the wet balloon for shipment. After this work was done the "Presidente" insisted upon entertaining the aeronauts for the next two hours, and his hospitality was so good that the aeronauts hope another landing can be made in this town sometime in the near future. The total distance of this flight was sixty kilometers.

MR. BULL FROG TAKES A JOY RIDE

From the Philippines comes a story of how a daring and intrepid bull frog nonchalantly leaped into the cockpit of one of Uncle Sam's airplanes and

sat through the whole gamut of stunts known to "airplane stuntdom" without blinking an eye, acting as though he had been an old veteran in the game.

A few days ago Lieut. C. L. Weber was obliged to fly to Manila. After transacting his business he returned to Paranaque Beach, having failed to toss a single libation to Hymen. With due circumspection and thoroughness he proceeded to give his chariot the "once-over". She appeared to be a model of perfection, whereupon he vaulted into the cockpit and pushed off with never a qualm.

He had climbed to two thousand feet and his rhythm of motion was purring her "sans souci" to him, when out of the corner of his eye he thought he detected untoward activity in the cockpit. He lowered his head, but could not be sure. He removed his goggles, but still doubt remained. He withdrew his handkerchief and gently caressed his eyes to remove all fauna or flora that might have inadvertently crept therein. He finally centered his gaze upon his rudder bar, for thereon benignly sat a huge bull frog, who intermittently grinned and oggled at him. He opened his throttle and zoomed, but Mr. Frog was not perturbed. He sideslipped, he fish-tailed, he banked, and he did wing-overs, but his fellow passenger manifested not the slightest interest, nor would he quit his position on the rudder bar.

At this point Lieut. Webber reports detecting a violent knock in the motor. Soon a miss, first on one side and then on the other developed. He looked at his wings, and they appeared to wobble badly. He thought the ship had developed the ague or the Saint Vitus Dance, she vibrated so terribly. One moment he was positive the motor had stopped, the next he was equally certain his controls were fouled. All the time he was conscious of nothing but rice paddies flying by beneath him.

Lieut. Webber finally landed safely on his home field, but before the ship came to a stop a person was seen to leap from the cockpit and run madly to the Flight Surgeon's Office. Fortunately, a psychiatrist was also present in the latter's office. The two, after listening to an incoherent mumbling of "bull-frog, bull-frog", proceeded to a minute examination of the ship, whereupon they pronounced the case a very rare one, known as "bull frog on the brain".

Lieut. Webber is now slowly convalescing. He says he would be quite well were it not for the propinquity of his co-passenger, who persists in hanging about his quarters at night.

TRAGIC DEATH OF HARRY G. HAWKER.

Again the Grim Reaper has stalked amidst the flying fraternity and this time has taken away from the world that daring and resourceful British airman, Harry G. Hawker, the first aviator to attempt a flight over the Atlantic Ocean in an airplane. It is peculiarly unfortunate that he should be fated to shortly follow the brilliant pilot, Captain John Alcock, who with Lieut. A. W. Brown on June 14, 1919, achieved the distinction of making the first non-stop trans-Atlantic flight by airplane and who died a few months later as the result of an airplane crash in France.

Hawker met his death on July 12th while flying over the Hendon Field in London, England, the machine he was piloting crashing to the ground in flames. His body, which was found about 200 yards from the spot where the plane fell was badly mutilated both by the fire and the fall.

The memorable flight across the Atlantic attempted by Hawker, accompanied by Lieut. Commander MacKenzie Grieve as navigator, was started from Newfoundland on May 18, 1919, in a Vickers-Vimy biplane. When about 1,000 miles from Newfoundland and about 850 miles from their destination, the Irish coast, he was forced to descend into the ocean due to a choked radiator filter which had caused the water to boil away. About an hour and a half later they were picked up by the Danish steamer "Mary", though news of their rescue was not received until six days later when they were virtually given up as lost. The news of the rescue created wide interest everywhere, and on his arrival in England Hawker was accorded a tremendous ovation, feted everywhere, and decorated by the King.

CHANGES IN STATION OF AIR SERVICE TROOPS

Orders were issued by the War Department transferring the following Air Service troops, effective June 30th:

From Kelly Field to Ellington Field, Houston, Texas:

1st Group Headquarters
17th, 27th, 94th and 95th Squadrons
Air Park No. 2.

To Kelly Field, San Antonio, Texas:

Flight "A", 90th Squadron, from Del Rio, Texas.
Hqrs. and Flight "B", 90th Squadron, from Sanderson, Texas
Hqrs. and Flight "A", 8th Squadron, from McAllen, Texas
Detachment, 8th Squadron, from Laredo, Texas
Flight "B", 13th Squadron, from Marfa, Texas
Hqrs. and Flight "A", 13th Squadron, Hqrs. Detachment 1st Surveillance Group, and Photo Section No. 1 from El Paso, Texas
(Three men will remain at each border station abandoned)

From March Field, Riverside, Calif. to Kelly Field:

Detachment of 200 enlisted men or such part thereof as may have six months to serve.

From Chanute Field, Rantoul, Ill. to Bolling Field, Anacostia, D.C.
One Staff Sergeant and 29 privates from School Detachment.

From Mather Field, Sacramento, Calif. to Ellington Field, Houston, Texas:

Detachment of 200 enlisted men, or such part thereof available with at least six months to serve.

From Montgomery Air Intermediate Depot, Montgomery, Ala.:

Air detachment demobilized and personnel, approximately 53 enlisted men, sent to Ellington Field.

Four Staff Sergeants, 10 privates, 1st class, and 46 privates to Carlstrom Field.

From Selfridge Field, Mt. Clemens, Mich:

Supply detachment demobilized, and the four men sent to Scott Field, Belleville, Ill.

From Aberdeen Proving Ground, Md. to Mitchel Field, L.I., New York:

Twenty unassigned privates, no men with less than 6 months' service to be sent. Casual detachment of two men from Governors Island, N.Y. sent to Mitchel Field.

From Rockwell Field, San Diego, Calif. to Post Field, Fort Sill, Okla.:

One Staff Sergeant, one sergeant, one corporal, 25 privates, 1st class, and 275 privates; no men with less than 6 months' service to be sent.

COOPERATION OF ARMY AIR SERVICE IN SEARCH FOR NAVY KITE BALLOON

The Secretary of the Navy on June 25th addressed the following letter to the Secretary of War:

"1. Lieutenant George R. Pond, U.S. Navy, has recently submitted his report on a search made in a DH-4B airplane over southern California, Arizona and New Mexico for a Navy kite balloon which broke away from the U.S.S. "Texas" at San Pedro, California, on the night of April 15, 1921.

2. During his search some forty two and a half hours were spent in the air and approximately four thousand miles of volcanic mountain ranges and desert were covered in the space of thirteen days. Many landings were made at Army stations located in the regions flown over. The following is quoted from his report:

'The utmost courtesy and cooperation was given by all Army officials with whom I came in contact, and it is felt that the successful completion of the trip of this length over the country encountered is an excellent tribute to the efficiency, and the complete and friendly cooperation of the Army Air Service.'

3. I take pleasure in bringing to your attention this testimonial of the hearty spirit of friendly cooperation that exists between the Services."

RADIO

The use of radio telegraphy and telephony in the Air Service is becoming increasingly more important, as shown by the radio activities of the Engineering Division at McCook Field. Many types of radio apparatus are being tested and experimented with in the Radio Laboratory. In fact, there is probably no more completely equipped Radio Laboratory in the country than the one at McCook Field.

Work at this time is being done on various types of apparatus, including a 5-kilowatt spark transmitting set which has a range of about 1000 miles, a 2-kilowatt tube set which has a range of about 600 miles, a 1-kilowatt telephone set which has a range of several hundred miles, as well as various smaller radio telephone sets which have ranges of from 15 to 100 miles. In addition to this apparatus tests are also being conducted with telegraph and telephone apparatus which is used on airplanes and includes a telegraph set having a range, from airplane to ground, of 100 miles and various telephone sets having range of from 15 to 100 miles. Thus in the course of tests it is possible to carry on conversation from the Radio Laboratory with an airplane which is flying at a distance of 50 miles from the field as easily as it is to carry on conversation over the ordinary wire telephone from the house to the office.

In addition to communication, radio is also being used in the Air Service to-day for the purpose of assisting in navigation, particularly in the case of "above-the-cloud" flying. By means of direction finding loop stations located on the ground, it is possible to ascertain the bearing and the location of any airplane that is flying in the vicinity. Thus, if an airplane is flying above the clouds and is in doubt as to its exact location, the radio operator in the airplane calls these ground direction finding stations and asks that he be informed as to his whereabouts. These ground direction finding stations immediately take bearings on the airplane, and by means of triangulation determine its location. This information is then transmitted to the airplane by either radio telephone or radio telegraph.

By means of special radio direction finding loops installed on an airplane, it is possible to fly directly towards any radio transmitting station. Thus it is possible for airplanes to rise above the clouds and to fly directly to another station without seeing the ground until its arrival and landing.

AERONAUTICAL BRIEFS

The Newport Chamber of Commerce of Newport, R.I., is preparing to establish a flying boat station and is constructing ways and other facilities for visiting air yachts.

The Mayor of Detroit has appointed an Aviation Commission composed of the following citizens of Detroit: C.G. Edgar, Chairman; J.G. Vincent; E.G. Heckel; and S.D. Waldon. A flying field has been selected with the approval of the City Planning Commission, the Common Council, and the Mayor. It is hoped that this field will be ready in the near future to be used by all the air travellers to Detroit.

A flying meet was held in Galveston by the Galveston Beach Association in the early part of July.

A National Air Tournament is being arranged to be held at the Los Angeles Speedway under the auspices of the Aero Club of Southern California. Other meets are scheduled to take place in Omaha, Nebraska, at the time of the American Legion convention, and the Pulitzer Races will be held in Detroit during the week of September 30th.

A Commercial Aero Exposition is to be held in the City of Mexico, in September.

The Aero Club of America is planning to have flying activities at Hazelhurst Field in the near future.

The Balloon Committee of the Aero Club of America has selected the following team to represent America in the International Balloon Race to be held in Brussels, Belgium. Mr. Ralph Upson, Mr. Bernard Von Hoffman and Mr. Wade T. Van Orman, and preparations are actively being made for their participation in this event. The team hopes to bring the Gordon-Bennett Cup back to America again.

The Aero Club of America has started out on a National Campaign for Membership for the support of Aeronautics.

Under the auspices of the Royal Aero Club of the United Kingdom, seaplane races will be held at Cowes, Isle of Wight, on August 1st and 2nd, 1921. The first race will be the Isle of Wight Handicap over a course of 80 nautical miles, from a point off Cowes to Ventnor, out and back twice, passing Ryde, Sea View and Foreland. The prize will be a trophy of the value of £100 presented by Lieut. Col. F. K. McClean, and £250 presented by the Royal Aero Club.

The Solent Handicap will be held on the 2nd of August, over a course of approximately 80 nautical miles, over a circuit of 20 nautical miles, situated in the Solent, and four laps of the circuit must be made to complete the Course. The circuit will include a point off Cowes, No Man's Fort, Horse Sand Fort, and Spitbank Fort. A prize of £250 will be presented by the Royal Aero Club.

Mr. G. Talbot Wilcox, has just returned on the Imperator with an interesting story of Aeronautical activities in England, where progress in night flying is being made on the Continental routes. Light Houses, Beacons, and wireless direction finding apparatus, are being installed to make flying by night practical and safe.

The Royal Air Force is holding an Aerial Pageant at Hendon where every type of Aircraft is shown in action including the novel Jaz machines, which were so laughable last year in their public performances. These machines were the clowns of the show, with staggered struts apparently out of line and most ludicrously painted with every curious design and color.

Count Zborowski has caused a tremendous sensation with his new car called the "Chitti Bang Bang" in which he has fitted an engine from one of the Zeppelins which is so powerful that he can not open it up all the way, as the track only permits him to make 125 miles an hour. With its tremendous exhaust explosion it is "Jolly fine" in the words of the English automobile fan.

The control of traffic at the Derby by the R-34 was really a great success and flying in England is controlled by laws which established prohibited areas and legal limits for flying over cities, crowds and other special places.

A good story is told of a well known society man on a trip to Paris who's valet had forgotten to pack his dress suit. The discovery was made in time to wireless home and have the necessary garment sent by air, which arrived in due time for dinner.

Another Englishman, Sir Basil Zaharoff, has his pot of cream sent over to Paris every other day and a Frenchman has a dozen rolls sent from the Claridge Hotel daily to his Paris home.

Mr. E. Percy Noel, former editor of Aero and Hydro, and representative of the Chicago Tribune in Paris during the War, has joined the staff of the Public Ledger, Foreign Service, 30 Rue Louis le Grand, Paris, France, and is following present Aviation developments very closely.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

Bolivia

There is a project on foot which has the approval of the Bolivian Government for the foundation in that country of an aviation school for the purpose of development of commercial flying and improving communication with the adjoining countries. Included in the equipment of the proposed school will be hangars, mechanics shops, photographic workshops, and other supplies.

England

A "flying liner" which may seriously compete in the matter of fares with pleasure steamers, is being built in England, and if the hopes which are centered in the machine are justified, it will also revolutionize commercial aviation.

This new craft will start from Charing Cross Pier, and fly over river, sea and land to Paris, alighting on the Seine, in the heart of the city. Calls will be made at Tilbury, Southend, Margate, and Ramsgate Piers. Should the service prove a success it will be extended to the south coast. In any event, the journey to Paris will be shortened by at least two hours, compared with the present London-Paris airway times.

This year's Aerial Derby is to be flown over a two-circuit course round outer London, measuring about 190 miles, on the afternoon of Saturday, July 16th. The speed of each year's winner from the inception of the race is as follows:- 1912, 59 miles an hour; 1913, 76 miles; 1914, 72 miles; 1919, 129 miles; 1920, 153 miles. The Martinsyde firm, who won the race last year, will be represented this year by a high-speed cantilever monoplane. Another starter is likely to be a Bristol aeroplane, fitted with an air-cooled, radial Jupiter 450 horse-power motor. A third machine to enter will be a specially designed Nieuport Monoplane, driven by a 450 horse-power Napier "Lion" engine, and so finely stream-lined that it has been nicknamed the "Bullet". This machine is expected to attain a speed of 220 miles an hour, and is to be fitted with a special form of brake to reduce the speed in landing. Another machine being built for the race, a "dark horse" at present, is stated to be the product of a firm entirely new to aviation, and it is whispered that its speed will exceed even the 220 miles an hour of the "Bullet" monoplane. - Times Weekly.

An article in "The Sphere" states that authentic news has recently reached London of the successful trials of an Austrian helicopter, invented by Lieut. Stefan von Petroczy. This machine has reached an altitude of approximately 160 feet, carrying two men, and flying straight up from the ground by the aid of two large propellers measuring 21 feet in diameter. The propellers are driven by three rotary air engines working at a speed of 600 revolutions per minute.

Though experiments are taking place in various countries to solve the great problem of vertical flight, this is the first real success in this direction; and the height attained by the Petroczy machine puts it far ahead of its rivals. It is an event in the science of flight as important in its way as the first power-driven flight of the Wright Brothers.

When the helicopter is a proved success, the aircraft of the near future will be able to do without the large aerodromes necessary to-day. The Petroczy machine is also provided with a large parachute, which at the first sign of engine failure is automatically released, and able to bring the machine safely to the ground.

The latest fad among women in England is to make shopping tours by airplane, and they appear very enthusiastic about it, seeming to greatly enjoy every moment they are in the air and manifesting keen delight in the luxury the new airplane cabins afford. For their benefit largely the saloons bear cainty flower vases and mirrors.

Paris is the destination of most of the women. By going in a morning express one can now do an hour or so's shopping in Paris and catch a machine back which will bring one to the London air station in time to motor to town for dinner. From one express in from Paris the other evening there emerged eight women and only one man. Two women who wanted to buy a good many things in Paris hired a special "air-taxi", went over in the morning, spending the whole day there, and returned by the scheduled aeroplane express the next morning.

Chile

Two Chilean officers in a DeHaviland airplane recently made a flight from Santiago, Chile, to San Luis, Argentina, it being the first time an airman has flown across the Andes Mountains with a passenger. The distance traversed was over 300 miles. It was the original intention of the pilot to reach Buenos Aires, but due to exhaustion of gasoline he was compelled to descend before reaching his destination.

Peru. The aerial conquest of the Peruvian Andes was marked recently by the notable achievements of two Italian aviators. After one unsuccessful attempt to reach Cuzco, Aviator Rolandi returned to Lima and made a second attempt the next day, leaving Lima at 8 o'clock and arriving safely at Cuzco at 1 o'clock.

Aviator Ancillotto, who made the first flight between Cerro Depasco and Lima, left Lima at 10:30, arriving at Huancayo in 1 hour and 45 minutes. Both airmen used Spa planes equipped with two Spa motors.

Canada

Necessity is the mother of invention. Sometime ago, as a story from Winnipeg goes, an oil company's freight aeroplane plunged into a deep snow bank and splintered one of its propellers. Through the ingenuity of a steam-boat engineer at Fort Simpson, in the sub-Arctic, in constructing a propeller out of a few dog-sled boards and glue made from raw moose hide, the airplane escaped being stranded at Slav Lake for several months, until the reopening of navigation in that region.

CHANGES IN STATION OF OFFICERS

June 22, 1921 - First Lieutenant Charles G. Brenneman, Air Service, ordered from the Aviation General Supply Depot, Washington, D.C., and directed to report to the Chief of Air Service, for duty in his office.

June 24, 1921 - Major John C. McDonnell, Air Service, ordered from Aberdeen Proving Ground, Aberdeen, Maryland, to Ft. Sill, Oklahoma, for temporary duty at the advanced training summer camp; thence to proceed to Cambridge, Mass., for duty as Assistant Professor of Military Science and Tactics at the Massachusetts Institute of Technology, Cambridge, Massachusetts.

June 29, 1921 - Major Earl L. Canady, Air Service, relieved from further observation and treatment at Walter Reed General Hospital, Tacoma Park, D.C., and ordered to Langley Field, Hampton, Virginia, for duty.

July 1, 1921 - Captain Harold M. McClelland, Air Service, relieved from further duty as Student at Ft. Sill, Oklahoma, and directed to report to the Commanding General, Ft. Sill, for duty as Instructor.

July 2, 1921 - First Lieutenant Eugene L. Vidal, Corps of Engineers, detailed to the Air Service and directed to proceed from Camp Humphreys, Virginia, to Carlstrom Field, Arcadia, Florida, reporting to the Commandant, Air Service Pilot School, for duty and pilot training July 28, 1921.

July 5, 1921 - Major Roy S. Brown, Air Service, ordered from San Francisco, California, to Camp Benning, Georgia, assume command of Air Service troops.

July 5, 1921 - Captain Lewis A. Page, Air Service, relieved from further duty with the Air Service at Carlstrom Field, Arcadia, Florida, and returned to Infantry.

OPENING OF AIR SERVICE R.O.T.C. CAMP

The first Air Service Reserve Officers Training Camp opened at Post Field, Fort Sill, Oklahoma, on June 16, 1921, thereby marking an epoch of development in the Air Service preparedness program. There are thirty-one students at the camp - 12 from the Massachusetts Institute of Technology, five from the Georgia School of Technology, two from the Texas Agriculture and Mechanical College, seven from the University of Illinois, and five from the University of Washington. Students who are enrolled in the Air Service R.O.T.C. units at educational institutions, and who have completed two years of Air Service work are eligible for the camp if they are physically qualified to pass the 609 examination (medical examination to determine fitness for pilot duty).

At this advanced camp the students are taught aerial observation, and receive theoretical and practical instruction on the ground and flying experience in DH-4B planes as observers. The course of instruction lasts six weeks, and includes Visual Reconnaissance, Radio, Aerial Gunnery, Photography, Meteorology, trap shooting, infantry drill, and calisthenics.

The administrative personnel of the camp is composed of the officers attached to the six R.O.T.C. units who have been ordered to Post Field for this temporary duty during the camp.

I LEARNED ABOUT FLYING FROM THAT

On a recent cross-country trip through Georgia and South Carolina I, at one time, found myself rather lost and very much off my course, on account of trusting my compass and checking and flying my course by apparent section lines on the ground. After striking a town and again orienting myself, I found that my compass was approximately correct and that the lines which I had been following were nearly 45 degrees off of true directions. This is because of the fact that a large percentage of the individual holdings of lands in the original thirteen colonies was made by grant from the Crown, and was designated by metes and bounds and not by any east and west or north and south, or parts of sections. Aviators, who are in the habit of checking their course by section lines, had best fly by compass when flying over any one of the thirteen original colonies.

The writer learned a lesson in the early days of his flying which might be of benefit to all beginners. At about 3,000 feet altitude and too far from the flying field to glide in, the motor cut out. The pilot saw a fine large field straight ahead, which he thought within easy gliding distance, and he confidently turned to his observer and pointed at the field he expected to land in. That field was not reached, but luckily the plane was landed, with only a broken wheel, in a small rough field. The lesson learned was that you cannot glide as far with a "dead stick" as you do when coming in for a normal landing. The 300 or 400 revolutions per minute your propeller is turning over, when gliding into your field, gives enough pull that when this is not taken into consideration in a "dead stick" landing, you are very likely to "undershoot" your picked landing spot.

It is a good idea, no matter what your altitude, to pick a field, in a forced landing, as directly under you as possible. This brings to mind the bad habit, even experienced pilots sometimes get into, of flying their ships (instead of gliding) into the field. This habit would also have the effect, in a forced landing, of causing the pilot to misjudge his distance and "undershoot" his picked landing spot.

SQUADRON NEWS

Air Service Mechanics School, Chanute Field, Rantoul, Ill. June 29

Construction work on the new swimming pool at this post is now under way, and it is expected that it will be completed by July 20th. An interesting feature of the construction is the big electrically operated filtering plant. Every drop of water in this pool passes through the filters and is returned to the pool in a chemically pure condition daily. Arrangements are being made to have the water tested each morning. Every effort will be made to have this pool one of the most sanitary in the country. The size is 50 by 100 feet, the depth runs from 4 to 8 feet and the water capacity is 225,000 gallons. The pool is located just east of the tennis courts and within 100 feet of the post gymnasium. The addition of the pool opens up a new field of recreational activities for the men at Chanute Field and, it is believed, will strengthen the morale of the entire field.

Major and Mrs. George E. Stratemeyer gave a bridge party at the quarters of the Commandant Sunday evening, June 26th. Among those present were Lieut. and Mrs. Henry Kunkel, Lieut. and Mrs. Warren R. Carter, Lieut. and Mrs. James S. Eldredge, Lieut. and Mrs. Langhorne W. Motley, Lieut. and Mrs. Hubert A. Shovlin, and Miss Myra Van Hooganhuysze, the sister of Mrs. Shovlin, who is visiting Chanute Field. Lieut. Carter won the gentleman's prize for high score, and Mrs. Shovlin the lady's prize. The guest prize was presented to Miss Van Hooganhuysze. Light refreshments were served at the close of the evening.

Several cross country flights have been made during the week by officers of Chanute Field. The spring weather in this locality has been particularly favorable for trips of this kind. Lieut. E. L. Eubank made a flight to Chicago and one to St. Louis, Capt. Ernest Clark flew to Terre Haute, Ind., and flights to McCook Field and Wilbur Wright Field, Dayton, Ohio, were made by Capt. Ernest Clark, and Lieuts. Warren R. Carter, James Flannery, Harry Weddington, James S. Eldredge and Russell R. Fox. The total mileage through the week is estimated at about 3,000.

Carlstrom Field, Arcadia, Fla., June 30

The present class of student officers has nearly completed its work, and the students are anxiously awaiting the news with regard to their future assignments.

With much regret it is announced that Cadet Forrest Myers lost his life in an airplane crash while performing acrobatics on June 28th.

Changes in station of officers during the past week were as follows: 1st Lieut. E. R. Page, A.S., to Office Chief of Air Service, Washington, D.C.; 1st Lieut. H. F. Carlson to the Montgomery Air Intermediate Depot; 1st Lieut. Roland L. Spencer, C.A.C., to Coast Artillery, Key West, Fla.; 1st Lieut. Albert W. Johnson, A.S. to Md. Cavalry, Fort Riley, Kansas, for duty until September 10th, and 1st Lieut. William E. Vecqueray, Q.M.C. to General Administration School, Philadelphia, Pa.

In a close and exciting game the Carlstrom Baseball team, on June 23rd, defeated the Arcadia Baseball team in the eleventh inning, thereby tightening its hold on second place in the league.

During the week there was a total of 38 ships in commission, with a total flying time as follows: "A" Flight, 88 hours, 25 minutes; "B" Flight, 74 hours; "Hqrs." Flight, 117 hours and 20 minutes.

BALLOON COMPANY NO. 31, CAMP KNOX, KY. June 25.

The past week has seen a great change in the time taken to put the balloon in the air. Each morning three to four tests have been made. Monday the best time was 9 minutes. Friday the time had been lowered to 3 minutes and 58 seconds. In another week it is hoped to lower the time to less than three minutes. Time has been taken from the command "On the Balloon, Post" given just before the men go to the balloon, until the command "Basket Ready for Observer" is given. The entire company has taken a great interest in lowering the time and all have worked with a will.

The Balloon Bed is completed except for the Screen. It will be entirely completed in time for the dance scheduled for Saturday, July 9th, at which time the Balloon will be moved from the Hangar to the Bed and the floor of the Hangar waxed and the Hangar decorated.

The baseball team is showing improvement, having won its first game Tuesday by defeating the Medical Department 4 to 2.

Lieutenant Farnum, with Captain Flounders, Heavier-than-Air and Captain Wilson of the E. & V.T. School, were judges in the 2nd Field Artillery School Motor Show on Thursday. This was preparatory to the Camp Knox Motor and Horse Show which were held Friday and Saturday of this week. A very large attendance is expected for this show, a great many Louisville people are motoring out for it. The Field Artillery School is giving its monthly dance Friday night.

Fairfield Air Intermediate Depot, Wilbur Wright Field, Dayton, Ohio, June 25.

The Post Band participated in Flag Day Parade in Dayton, June 14th, for a number of patriotic societies, and attracted very favorable attention. The band left at Reveille on June 16th for the recreation camp at O'Connors Point, Indian Lake, Ohio, where they spent a week fishing and resting after several months of strenuous study. While at O'Connors Point, the Band rendered a program of evening concerts as a compliment to Messrs. O'Connor and Harmon, the managers of the O'Connors Point Hotel, who very generously donated the camp site for the use of the troops. The summer camp is in full swing and a boat is being built to use upon the lake. There is excellent fishing to be had, providing the fisherman gets far enough from the shore. The storms of the past week rudely disturbed the slumbers of the campers by playfully blowing the tents from above their heads. A wild scramble ensued and order was restored eventually. Each man came back sporting a well developed case of poison ivy or sunburn, and in a great many cases both, but well pleased with the trip regardless.

Very favorable comment has arisen upon each occasion of the appearance of this class in concert and wonderful progress has been made by the soldiers in their musical education. This class is open to all soldiers desiring musical training and at the present time comprises 60 members.

Ladies of the Officers' Club entertained the officers at a picnic Friday, June 24th. When small Japanese lanterns and other decorations had been placed out on the picnic ground and the festivities were about to commence, a sudden cloudburst caused the scene of operations to be removed from under the trees to the more secure shelter of the officers club, where delicious fried chicken, and Angel Food cake as light as cirrus clouds, caused the thunder clouds to be forgotten. On this occasion the name of Side Slip Inn took a deeper significance than ever before, as the transfer of outdoor games from the lawn to the ballroom floor caused slips of acrobatics too numerous to mention. Forfeits were taken and each officer and lady required to redeem them, by performing stunts which ruffled their dignity and aroused the wildest enthusiasm and merriment among the onlookers, all of whom were past or prospective victims of the officer in charge of the acrobatic stage. The efforts of the ladies, in connection with this picnic, were voted to be an unqualified success.

Major and Mrs. Geo. E. A. Reinburg entertained in honor of Mrs. Joseph L. Hunter, Mrs. Reinburg's mother, on Wednesday evening, June 22nd. Mrs. Hunter has just arrived here from Camp Grant where her husband, Lieut. Colonel Joseph L. Hunter, is Commandant of the Chaplains' School. At the conclusion of the evening, which was pleasantly spent playing bridge, first prize for ladies was awarded to Mrs. E. S. Blair. Much merriment was caused by the awarding of the gentlemen's prize, consisting of a set of golf balls, to Chaplain C. A. Corcoran, who never indulges in such frivolity. Lieut. Geo. V. McPike ruined his reputation as a bridge shark by annexing the consolation prize. Unique and delicious refreshments concluded a delightful evening.

All the officers and enlisted personnel of the Field were the guests of John H. Patterson, President of the National Cash Register Company, at a strawberry festival given on the grounds of Far Hills, Mr. Patterson's home in Dayton. While the Wilbur Wright Band played, the guests were served with strawberries, icecream, cake and coffee. The refreshments were followed with a program of motion pictures and dancing in the open air. The grounds were beautifully decorated with flags and Chinese Lanterns and a very delightful evening was spent by all who were present.

Fairfield Air Intermediate Depot, Cont'd.

On Wednesday evening, June 15th, the retirement of Staff Sergeant Alexander Keyes, after thirty years of honorable service, was announced at the evening parade. Staff Sergeant Keyes assisted the Commanding Officer in reviewing the troops. After the troops had passed in review, they were formed in a hollow square to witness the presentation by Major Geo. E. A. Reinburg of a handsome gold watch, a gift and token of esteem of the officers and soldiers of Wilbur Wright Field. On behalf of the entire command, Major Reinburg congratulated Sgt. Keyes on his splendid record, bade him farewell and wished him the greatest success and happiness as a retired soldier. Upon conclusion of these remarks, three cheers were given in honor of Sgt. Keyes.

Captain and Mrs. Robert W. Horton entertained at cards Thursday, June 16th, in honor of their son Thomas, who has just arrived here after graduating with honors from North High School, Columbus, Ohio. While at North High School, Thomas Horton won the gold medal for pole vaulting at the Inter-scholastic Meet of 1921.

A large number of officers, soldiers and civilian employees attended the meeting of the New Carlisle Lodge, Free and Accepted Masons, June 16, 1921, upon which occasion Major Geo. E. A. Reinburg, Commanding Officer of Wilbur Wright Field, received his first degree in masonry.

The Supply Department and the Engineering Department played a baseball game of seven innings, which was won by the Supply Department. Five innings were then played between the Supply Department and the Post baseball team, which was won in handy fashion by the Post team by a score of 5 to 3. The affair was wound up by boxing matches put on by some of the boxers, including a royal battle between five soldiers, which was an exceedingly bloody but harmless affair.

The baseball team on June 18th lost a hard fought game to the Ormus Grotto, a local Masonic order. The team was pretty badly crippled by having four of the regular men out of the line-up.

The golf bugs are still running true to form and the latest development has been to get the ladies of the Post interested in the game. The ladies have already been given their first instructions. It is thought, however, that because of their natural tendencies there will be violations of that important rule of golf which forbids talking while the stroke is made. In spite of this failing, however, the ladies are being encouraged in the game and all bid fair to become experts in a very short time. A tournament is being arranged among the golfers on the Post, to be played next week, the winner of which will receive a trophy. Each golfer is confident of winning the trophy, and good scores are anticipated.

Two SE-5's are on their way through the shops now. When completed they will be flown to Selfridge Field.

Lieut. C. V. Haynes "took-off" Thursday, June 16th, in a Martin Bomber for Langley Field, carrying with him a large quantity of radio equipment as cargo. Lieut. Haynes, accompanied by Sgt. S. E. Bowen as mechanic, reported as having landed safely at Langley Field after a short stop at Zanesville, Ohio, and Washington, D.C.

The two DH Hospital ships have been thoroughly tested during the past week, and will be flown or shipped to Kelly Field before long.

The Radio Department has turned out 50 SCR-73 Sets, and 3 DH-4B Radio-telephone Sets for Martin Bombers.

Kindley Field, Fort Mills, P.I., May 14, 1921

The newly constructed Air Service Garrison Canteen has just been completed and is now able to greatly enlarge its stock. This, together with the picture show each evening, puts the Air Service Garrison at the Tail of the Island practically independent of the rest of the post.

The reorganization to (reduced strength) peace strength of the Army will cause a considerable change in the the two Balloon Companies and Observation Squadron at this post, due to the fact that these organizations have been over strength since their organization.

Headquarters and all the Squadron department offices have been consolidated in the Kindley Field Headquarters building to eliminate unnecessary individual files and inter-department correspondence.

Kindley Field, Cont'd.

Corporal Davis has been promoted to the grade of Technical Sergeant and Sergeants Jones, Diamond, and Romberger to the grade of Staff Sergeant. Several other promotions, demotions and ratings of Specialists have been made effective this week to expedite the Squadron to its new status.

Lieut. John B. Patrick returned this week from a six weeks leave of absence in China.

Lieut. J. P. Richter has returned to duty after two months' absence on the sick list and on detached service.

Captain and Mrs. Cole left for China and Japan on May 11th, aboard the U.S.A.T. "Warren". Lieut. R. B. Lea has taken over the duties of Capt. Cole during his absence.

Captain Mayer, Commanding Officer, 17th Balloon Company, returned to the states aboard the "Sherman" on May 15th, and Lieut. Bolling has taken command of that Company.

Headquarters Detachment, First Observation Grp., Manila, P.I., May 14, 1921.

Nearly all the pilots in the Philippine Department are nearing completion of their foreign service tour. Due to their two years' overseas service they are, of course, unfamiliar with the newer types of planes, many of which will probably be standard equipment by the time they reach the States. The outlook is not entirely discouraging as the "Fokker" will soon supplement the Spad, DeHaviland and seaplanes in helping the pilots thru a transition stage to the faster planes in the States.

Captain Eaker, with Lieutenant Blaney as passenger, made a trip over Fort Wm. McKinley and nearby shores of Laguna de Bay in quest of a suitable location for an airdrome for both land and water aircraft. Several very promising sites were located near Fort Wm. McKinley on the "Shores of the Laguna". An improved road, the Manila Railroad and the Pasig River would all be accessible means of transportation in the event an airdrome was selected in that district. Fort Wm. McKinley is only about ten kilometers from Manila, the port thru which all supplies to the islands pass.

Lieutenant Edwin Johnson and Major Mortenson, Philippine Scouts, flew in from Camp Stotsenburg last Saturday.

All Air Service Units in the Department have been reorganized to comply with the New Tables of Organizations, lately received.

France Field, Cristobal, C.Z., June 11, 1921.

A cross-country formation of three planes flown on Tuesday by 1st Lieuts. J. M. Clark, H.S. Chandler, and Odas Moon was the first of a number of contemplated flights over Panama to acquaint the newly arrived officers at the field with the interior emergency landing fields. Tuesday's trip was across the Canal Zone to Panama City, following the route of the canal. Over the Bay of Panama four pigeons were released at an altitude of 3,000 feet. They reached the home loft one hour and ten minutes after tossing, while the planes covered the same forty-eight miles in forty minutes.

Camera obscura practice for the week culminated in a bombing formation of five planes on Friday, accompanied by a diamond protective formation. Four trips over the target at an altitude of 4,000 feet showed excellent results, the camera obscura recording three flights of the group directly over the bull's eye, 130 feet in diameter. 1st Lieut. H. S. Chandler, pilot, with Capt. A. C. George, observer, was the formation leader and the other planes were piloted by 1st Lieuts. J. M. Clark, D. D. Watson, Odas Moon, and S.M. Connell. The protective formation was flown by 1st Lieuts. R. C. W. Blessley, A.L. Foster, and J. D. Barker. Photographs were taken from the air during the flights.

The training schedule of bombing camera obscura, formation, photographic, and radio flights was carried out through the week without interference by weather conditions which were really much better than usual during the rainy season. Five of the eight teams engaged in camera obscura practice made some excellent scores on their flights and to date 1st Lieut. Kenneth Garrett, pilot, and Sergt. Rosburski, observer, have taken the honors in securing the highest general average and the greatest number of bull's eyes.

ance Field, Cont'd.

Mr. J. C. Burkholder, A.S.R.C., now physical director at the Balboa clubhouse, took a practice flight on Wednesday preliminary to going through a refresher course at the field. 1st Lieut. H. B. Chandler will put him through this course.

Air Service Observation School, Post Field, Fort Sill, Okla. June 18, 1921

Thursday evening, the Oklahoma National Guard, stationed at Camp Doniphan, was reviewed by the Governor of the State. About a dozen airplanes from the Field participated in this event, adding much interest thereto. After the review, the National Guard troops demonstrated to the Governor the evolutions of an attack upon an imaginary enemy, and several planes were utilized in working out the problem. One of the planes with streamers was designated as the Infantry plane and another as the Command plane. Both these planes dropped numerous messages.

Although the weather continued somewhat unfavorable this week, school work was not interrupted to any appreciable extent. The subject of Minor Tactics was taken up in the class-room. Flying of smoke bomb artillery adjustment problems commenced Monday. Only two of the three ranges could be utilized this week, No. 1 range being contiguous to the National Guard Rifle Range and the personnel not deeming it healthful place to operate from, claiming that it is impossible to concentrate on the immediate work at hand with occasional stray bullets whizzing hungrily by.

On Monday, June 13th, Lieut. Colonel Paul W. Beck, A.S., now Assistant Commandant, Post Field, and Major Follett Bradley, A.S., left for Washington by air via St. Louis, Missouri and Dayton, Ohio. Wire was received from Major Bradley stating that safe arrival was made on Wednesday, June 15th.

First Lieut. Paul T. Wagner, A.S., left for Pueblo, Colorado, Sunday, June 12th with Sergeant Hooper of the 4th Photo Section to take a complete Photographic Mosaic of the flooded area.

Lieut. Matthew E. Finn, A.S., one of the student officers of the School, and the last one suspected of having matrimonial intentions, gave all a surprise by returning from a two days' leave with a wife on his arm. When questioned about this affair, all it was possible to get out of Lieut. Finn were successive joyous grins. Truly, brave men dash in where angels fear to tread.

Private Clarence Ervin pitched the baseball team to a well earned 4 to 2 victory over the regimental team of the 1st Field Artillery allowing only five hits, and striking out fifteen men.

Headquarters Flight "B", 91st Squadron, Camp Lewis, Wash. May 7 - 28

During the trip of the detachment of thirty men to Camp Lewis, bringing airplane supplies for use during the course of the forest fire patrol season, they were eye witnesses of one of the greatest sea catastrophes of the Pacific Coast - the burning of the Japanese Steamship TOKAYO MARU. On her maiden voyage from Seattle to an Oriental port with a cargo of explosives, she caught fire the second day at sea. She was manned by Japanese sailors, seven of whom died from exposure. It was a ghastly but wonderful sight - her hull white with intense heat, the indomitable flames, the heavy black smoke curling heavenward into space, the terrific explosions of the cargo, and then the bodies of her crew, dead and alive alike, strewn broadcast over the surface of an angry sea. Here and there could be seen a life boat struggling to keep afloat in the face of mountainous billows, the features of the occupants denoting intermingled fright, horror and relief. One by one, then life boat after life boat they were brought aboard the Transport BUFORD, talking and jabbering in their native tongue, some wild and hysterical, others calm and moody and still others cheerful and buoyant. Upon reaching Seattle, the survivors were turned over to their employers there.

The radio department of this detachment is equipped with receiving sets with the view to making two-way communication between planes flying together and ground stations possible. In the event that this experiment proves feasible it will be used for artillery observation work and will add greatly to the efficiency of airplane adjustment.

Work on the flying field at this base is going on in fine shape. Tent hangars have been erected, the field marked with a "T" and everything being made ready for the forest fire patrol season.

Detachment 91st Squadron, Medford, Oregon, June 18

A forest patrol base has been established at Medford, Oregon, by a detachment of 20 men of the 91st Squadron from Mather Field, and four DH-4 planes. An excellent camp site was found at the municipal field, known as Newell Barber Field, which was dedicated to Lieut. Newell Barber, Air Service, who was killed in action in France.

Although the patrol did not begin until June 15th, the 1921 season was auspiciously ushered in soon after the arrival of the detachment on May 19th, when a fire was discovered and accurately located in the residence district of Medford, and the detachment rushed to the scene, arriving before the local fire department and rendering yeoman service until liaison effected with the forces of the Fire Chief upon his arrival.

Headquarters 91st Squadron, Municipal Flying Field, Eugene, Oregon, June 18

Forest patrol for the 1921 season in Oregon started on the 15th. Lieut. Batten with Mr. Benefiel took the north patrol to Portland and Sergeant DeGarmo went south to Medford. Both returned without mishap, the latter reporting three fires. Both parties encountered storms on the way.

There will be eight observers on the staff this year - civilians employed by the Forestry Service - who will cast their eagle eyes from the rear cockpits of the DH planes in search of elusive forest fires. They are Jacobsen, Davis, Bain and Benefiel from this base, Parsons and Todd from Medford, and Walker and Dark from Camp Lewis. Most of these men have won their spurs in some branch of war time aviation, and several have been on forestry patrol in past seasons.

During the past week Mr. Osborne of the Portland Forest Service Office was engaged in instructing the new observers in their duties, and on Tuesday took a trip south to Medford with Captain Lowell H. Smith on an inspection trip or "special patrol", as it is called. State Forester Elliott and Mr. Eberle, his deputy, were here for a conference as to the plans for the summer.

The work on building the camp still goes on and men are at work on water and power lines. A new deForest Radio Receiving set is nearing completion.

Air Service Pilot School, March Field, June 25

Military honors were paid Sergeant James E. Jones, whose body was shipped Thursday evening to Lexington, Ky., for burial. Officers of the Pilots School Detachment and the entire roster of "B" Squadron paid final tribute to their departed comrade. Taps was sounded as the flag-draped casket was carried to the baggage car. An escort accompanied the body. Sergeant Jones was instantly killed in an airplane accident at this field early Tuesday morning when his plane fell some 3,000 feet in a spin. Private Earl Overtein, who was also in the ship, sustained only minor injuries. Sergeant Jones reported at this school from Bolling Field, Washington, D.C., and had been placed on flying status at this field scarcely a week prior to the fatal accident.

Many March field men, who saw service in France and Belgium, were carried back to the days of strife Thursday evening when they witnessed the official Signal Corps moving pictures of the 91st Division and its companion units in combat. The films were presented at the local theatre by Riverside Post No. 79 of the American Legion.

Cadet Harold Zufall, who trained at this station with the last class of cadets, and is now on forest fire patrol duty from Mather Field, was successful in locating three bodies which were lying on the bottom of Fallen Leaf Lake in the high Sierras near Lake Tahoe as the result of drowning accidents. The bodies could not be located until observed from the air, and Cadet Zufall and his observer encountered many perilous air currents in the mountains about the lake which for a time threatened their own safety.

Major B. K. Yount, commanding officer, has been ordered to Washington, D.C. Officers of the post gave a dinner dance Friday evening at the Victoria Country Club as a farewell event for Major and Mrs. Yount.

Air Service Pilot School, Cont'd.

Lieut. Raymond Morrison was married Tuesday, June 21, to Miss Elsie Bradshaw in San Diego.

March Field's baseball team defeated the Ross Field Balloon School team Wednesday afternoon by the score of 10 to 3.

Forest fire patrol activities from this base will be started within the next week or ten days. Captain A.F. Herold has been designated Patrol Officer, and is now engaged in perfecting his organization. Two patrols will be maintained daily - one over the Cleveland reserve and the other over the Los Angeles reserve to Santa Barbara and return. Cadet pilots will be used, and six DeH4-B's assigned to the unit. Observers, radio men, mechanics and riggers will be selected from the enlisted men. Forester J. B. Stephenson will be stationed at the local base as liaison officer.

Captain A. F. Herold has been appointed accident inspecting officer vice Capt. F. I. Eglin, relieved.

Ross Field, Arcadia, Calif., June 14.

On Tuesday evening, June 7th, Captain Weeks entertained at dinner, and later in the evening he and his guests attended the theatre. Among the guests were Capt. L. F. Stone and his mother, Mrs. Nellie Stone, and Captain Watts and his mother.

Lieut. Clarence H. Welch, who was married at Bolling Green, Ky., on June 7th, arrived at this post with his bride, after a short honeymoon in the South, and will shortly take up his duties again as instructor in the Balloon School.

The "embryo fliers" of the School of Instruction and the Post Officers staged a contest on the diamond Wednesday afternoon. At the end of the seventh inning the score stood 16 to 1 in favor of the post officers, and as the student officers had come to the conclusion that they knew nothing about baseball it was decided to call the game. It is rumored that the student officers imagine they know a little about tennis and golf, and Dame Rumor has it that they are practicing on the sly. Time will tell, however, if they really know these games as well as they think they do.

1st Lieut. Clarence P. Kane, A.S. is acting as Post Adjutant in the temporary absence of Captain C.M. Savage who is vacationing in San Francisco, and expects to make the return trip through the Yosemite Valley.

During the past week Lieut. Martin as pilot and Captain Weeks as observer, observed an artillery shoot on the Thum target from the Pony Blimp and, as far as it is known at this station, this is the first time this has been done in the American Army. Fifteen shots were fired at the target, which is near Altadena, and the dirigible flew backward and forward over Pasadena near the High School, at a distance of about two miles from the target. Smoke bombs were used, simulating the bursting of artillery shells on and near the target. While the visibility was very poor and frequently it was impossible to see the ground around the target, every shot was observed and later reported. The observation was carried on without the use of field glasses, and the total accuracy in detecting and reporting the location of each shot was later found to be 93 $\frac{1}{4}$ % perfect.

8th Airship Company, Camp Bierne, El Paso, Texas, June 26.

A very good showing was made by the athletes of this company on Garrison Field Day, June 23rd, the men obtaining a total of 15 points to their credit in the swimming, track and boxing events.

Air Service classes and infantry drill are being carried on according to schedule. Owing to the prevailing hot weather, the mercury hovering close to and above the 100 mark daily, most of the necessary fatigue work is done during the morning hours.

Operations were carried on with a Caquot balloon the past week. During the coming week it is contemplated inflating a free balloon with the hydrogen from the Caquot, and free balloon flights will be made.

Mather Field, Sacramento, Calif., June 20.

The project for the establishment of the rest camp at Stanislaus National Forest had to be abandoned on account of its inaccessibility. Hopes are being entertained that another site will be chosen which it will be possible to reach by motor car.

The civilian force at this post has virtually been eliminated due to the reduction ordered by the Chief of Air Service to take effect June 30th. Only one radio engineer and one stenographer has been retained. Enlisted men have been assigned to the work formerly done by civilian clerks and laborers. In some places the change will be very keenly felt for a time until the soldiers gain experience in paper work, etc.

On the 13th a detachment of 2 cadets and 11 enlisted men, with Lieut. John R. Morgan, 9th Squadron, in command, left for the forest patrol sub base at Corning, California. Later in the week, 5 cadets, 1 enlisted pilot and 5 enlisted mechanics joined them. The 25 members of the Corning detachment are well pleased with the situation of the field, the quarters and accommodations being more comfortably arranged than it was possible to arrange them last year.

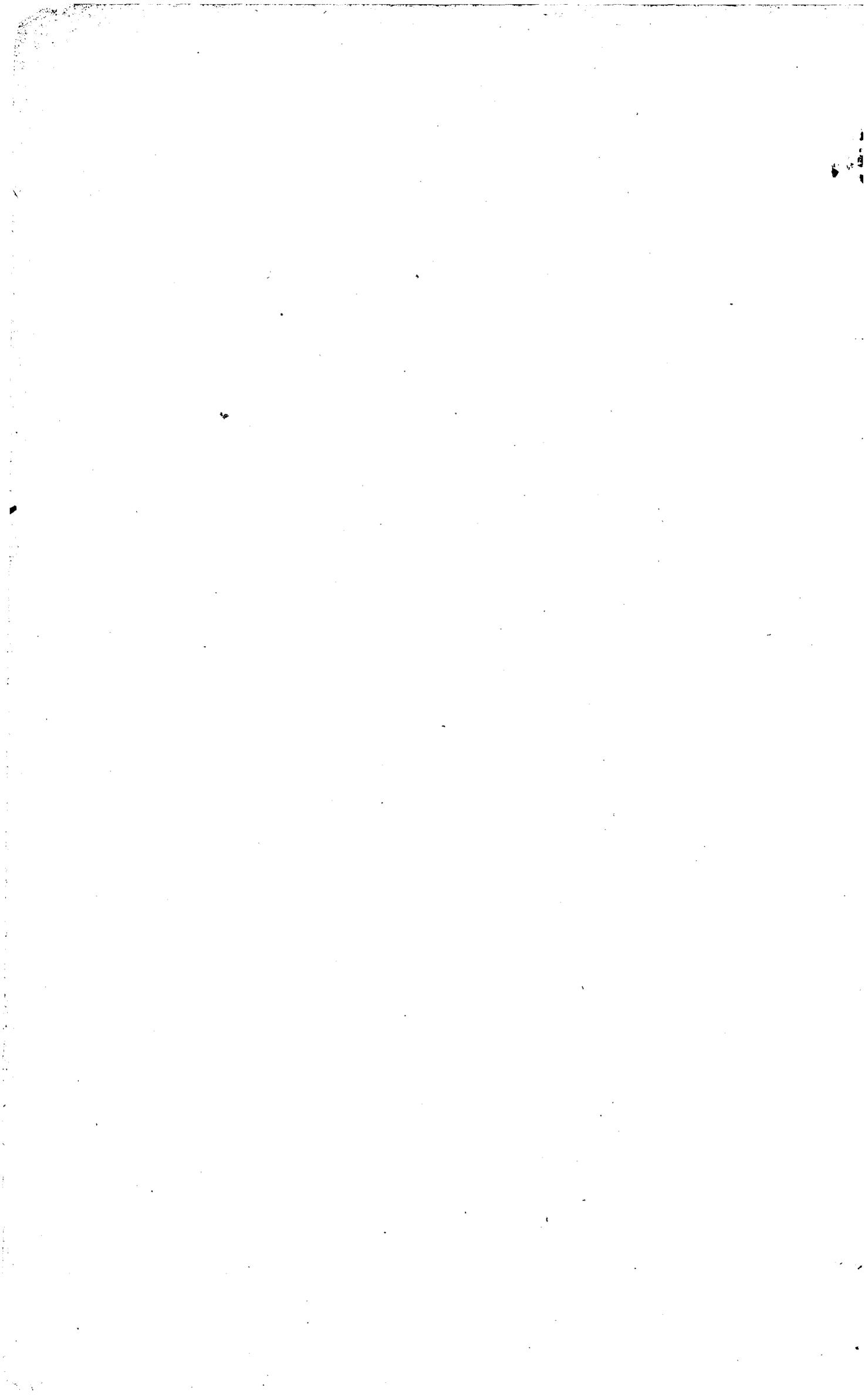
On the same date a detachment of 2 cadets and 10 enlisted men, with Lieut. P. L. Williams, 9th Squadron (Obs.) in command, left for the sub base at Visalia. Lieut. Williams reports that the accommodations are very comfortable. The quarters are situated in a grove of trees, promising more relief from the heat than was had during last season.

Major H. H. Arnold, 9th Corps Area Air Officer, made a trip to Mather on the 17th and returned to San Francisco the same afternoon by plane.

Little Rock Air Intermediate Depot, June 30.

Work has started on improvements at the Little Rock Air Intermediate Depot which, it is said, will cost approximately \$13,000, and will include the construction of a test shed, an oil reclaiming plant and a non-climbable fence around the reservation.

Major H. W. Gregg, commanding the depot, has announced a reduction in the force of men to 100, effective June 30th.



The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE JULY 29, 1921.

INVESTIGATION OF THE MORGANTOWN DISASTER

Following the distressing accident at Morgantown, Md., on Saturday, June 28th, when the Curtiss Eagle Airplane No. 64243 crashed, resulting in the death of the seven occupants, the Secretary of War ordered a complete and thorough investigation of the accident to determine the cause thereof; any failure or neglect on the part of individuals concerned; any defect in the particular plane used; the suitability of this type of plane for military service; any other contributory causes; and the accuracy of various alleged statements made at the time of the accident to the effect that the machine was badly balanced, had too small a motor, too much weight, etc.

The investigation, which was most thorough, was made by Colonel G. LeR. Irwin, assisted by Lieut. Col. R. C. Humber, both of the Inspector General's Department, and the conclusion reached was that the actual destruction of the Curtiss Eagle was due to the intensity of the storm which overwhelmed it and drove it into a fatal dive to earth. The investigation covered the period from May 31st to June 21st, the final report consisting of 34 typewritten pages, exclusive of testimony, and containing 38 exhibits, including the testimony of witnesses, statements and documentary evidence.

The testimony concerning the pilot, Lieut. Ames, clearly established his ability as a flier and his worth as a man. In addition to being a flier of experience and cool judgment, Lieut. Ames was a proficient engineer, thoroughly understanding planes and motors. He was regarded by his commanding officer as the best pilot at Bolling Field and was selected to test out ships originally set up, or repaired, and to give instructions for such changes or re-rigging as he considered necessary. He is described as one who could always be depended upon in an emergency. He was of superior physique, and his medical history shows him to have been physically qualified for flying. He had been physically examined 2½ weeks prior to the flight on May 28th. Lieut. Ames was familiar with the Curtiss Eagle, and was especially selected to act as pilot for the flight to Langley Field. There is no doubt that he was fully competent to pilot a plane of that type, and the accident cannot be considered to have been due to any fault of his.

With regard to the "Eagle", the report goes on to state that the Curtiss Airplane and Motor Corporation is a firm well known to the Air Service, having a high reputation for engineering ability and excellence of construction; that judging from the testimony of those who have actually handled these planes they possess great ease of control for a plane of large size, a very satisfactory maneuvering ability, and capacity to carry heavy loads; that Lieut. Kirkpatrick, who has handled this type of plane to a greater extent than any other officer of the Air Service, commends it highly for activity of control, efficient performance in weight lifting, and superior construction, he having tested this particular plane in very heavy weather. It appears that while at Langley Field on the day of the accident, Lieut. Ames classed the ship as being "very good" and suggested certain minor changes, such as the pivoting of the tail skid in rear, for ease in taxiing.

Captain deLavergne's criticism that the weight of the passengers, as placed in the flight to Langley Field, had a tendency to depress the tail of the plane, and to render it difficult to control, is controverted by the testimony of the Curtiss pilot, Acosta, and by Lieut. Kirkpatrick, both of whom have flown this plane with an equal or greater number of passengers than carried on May 28th. Lieut. Kirkpatrick's testimony regarding the distribution of the weight carried during an endurance test of 18 hours would seem to disprove Captain deLavergne's theory. A condition such as described could be compensated by an adjustment of the stabilizer.

The opinion of all witnesses was that the crash was due to the severity of the storm encountered near Morgantown; the unfavorable weather conditions including poor visibility, low ceiling and bumpy air, heavy rain, accompanied by thunder, lightning and strong wind. The testimony indicates that, due to the intensity of the storm, the pilot followed the only course open to him in the interest of his passengers; that is, to endeavor to make the landing with the least possible delay; and that he could not have followed the course taken by General Mitchell, Captain Ocker and Major Turner. It is generally accepted that the machine went into a stall, due to an air current, and fell into a vertical nose dive. The fuselage in which the passengers were riding was completely destroyed from impact with the ground. It is almost certain that the lightning played no part in the accident.

The investigation disclosed the fact that the decision of Congressmen Campbell and Walsh to return to Washington by boat was due to the discomfort experienced in the confined cabin, or cockpit, on the trip down. Mr. Walsh was especially affected by the unpleasant air impregnated with fumes of gasoline and oil. They were not influenced by any other reason.

Commenting on the fact that neither Reed Field nor Dahlgren Field are used to any extent by Army planes, the Inspector concludes that the pilot of the "Eagle" was either not aware of his proximity to a safe landing field or was unfamiliar with its location and approaches. He recommends that in spite of the fact that these flying fields are not on the direct line between Bolling and Langley Fields, officers of the Army Air Service making flights between these points should be required to familiarize themselves with landing conditions at both of these fields.

In the opinion of the Inspector it has not been developed that the Curtiss "Eagle" is unsuited for military service, but there is a doubt as to whether it possesses sufficient power for a bombing plane. He does not consider that any structural defect in this plane caused the accident.

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A statement issued by Mr. C. M. Keys, President of the Curtiss Aeroplane and Motor Corporation, relative to the accident at Morgantown, Md., emphasizes the urgent need of properly chartered routes and sufficient emergency landing fields, or, if lacking these, a properly centralized machinery for gathering and disseminating storm warnings. Judging from the report on the crash submitted by Mr. W. L. Gilmore, chief engineer for the Curtiss Company, from the condition of the wrecked plane, from the testimony of witnesses, and from the experience of Captain B. S. Wright, during the same storm, the following appears to have occurred:-

"The Eagle was in perfect flying condition. All controls were intact and in working order. On the trip to Langley Field it carried about 2400 pounds useful load and on the return about 2000 pounds. Its maximum capacity is over 4000 pounds. Therefore the machine was not overloaded. The gale was blowing at probably 90 or 100 miles an hour. The pilot searched for a place to land. Although the route between Langley Field (Hampton, Va.) and Bolling Field (Washington) is heavily traveled, the route is not chartered and no emergency landing fields have been established. Consequently the pilot, fighting the storm, had to make the best landing possible under the circumstances. He circled Morgantown, headed into the gale, throttled his engine and approached a field surrounded by heavy trees 30 or 40 feet high. The velocity of the wind was so terrific that the crests of the trees were bent over like wheat.

"What occurred then is deduction. Captain Wright, with a light manoeuvrable and heavily powered plane, skimmed the bowed tops of the trees surrounding another field about seven miles distant. He reports that the gale, flowing over the cleared ground and up and over the trees, created an air current similar to a huge and powerful swell at sea. His plane at first dipped, then rose, then was caught under the tail and sent diving earthward. This plane, a Fokker, has such speed and such manoeuvrability, that it was possible to right it partly before it struck. The result was that only the undercarriage was swept off. Still having

flying momentum, Wright rose, then dipped and landed on his nose, but with such reduced speed as not to seriously injure himself, although his plane turned turtle and was wrecked.

"From Captain Wright's experiences, under similar circumstances, it is believed that the Eagle, coming over the treetops, encountered the upward stream of air. The pilot undoubtedly increased his power and elevated the plane. The terrific gale then must have caught the Eagle under the tail and sent it nose down. Although not over loaded, the Eagle, because of its size, was slower than the Fokker to respond to the controls, with the result that it crashed into the earth at a speed of probably over 100 miles an hour."

DEATH OF MAJOR SHELDON H. WHEELER, AIR SERVICE

As the result of the crash of the airplane piloted by Major Sheldon H. Wheeler, Air Service, at Luke Field, Hawaii, on the morning of July 13th, which caused his death, the Air Service lost one of its ablest officers and veteran flyers. Sergeant Thomas A. Kelly of the 4th Observation Squadron, who was a passenger in the plane was also killed.

Major Wheeler, who had only passed his 32nd birthday, was born in New York City on April 6, 1889, and received his early education in Vermont. After attending the University of Vermont for two years, he entered the United States Military Academy, and graduated therefrom on June 12, 1914, when he was commissioned a 2nd Lieutenant and assigned to the 25th Infantry. After about one year's service with that regiment, he was detailed to the Aviation Section of the Signal Corps and stationed at Rockwell Field, San Diego, Calif. He was rated Junior Military Aviator on September 2, 1916. While a member of the 1st Aero Squadron, he served with the punitive expedition in Mexico under the command of General Pershing.

In April, 1917, he was assigned to Kelly Field, San Antonio, Texas, as Officer in Charge of Flying and as Commanding Officer of the 8th Aero Squadron. In the meantime, on May 1, 1916, he received his promotion to 1st Lieutenant, and was shortly afterwards transferred to the Cavalry. He was promoted Captain of Cavalry on June 18, 1917. Major Wheeler went with the 8th Squadron to Selfridge Field in July, 1917, and in the following month was assigned as Officer in Charge of Flying at Scott Field, Belleville, Ill. From December, 1917, to March, 1918, he served in the same capacity at Love Field, Dallas, Texas, and likewise at Carlstrom Field, Arcadia, Fla., from March, 1918, to August, 1918, when he was ordered for duty overseas. Upon his arrival in France he was placed in charge of the flying field at Orly. The excellent work he performed while on this duty was warmly commended by his superior officers. He returned to the United States in April, 1919, and after being stationed several months at Hazelhurst Field, L.I., New York, he was transferred to Luke Field, Hawaii, where he served until his death. He was slated for detail to the Field Officers' School at Langley Field, Va., upon the completion of his tour of two years in Hawaii, which was to have terminated on October 1st next. It is indeed regrettable that this young officer should be cut off in the midst of a promising Army career, and the Air Service, the Army as a whole, and those individuals who were fortunate to know Major Wheeler, keenly feel his loss.

NEW TYPE OF AIRPLANE PROPELLER

An Englishman by the name of Bourke has invented a new type of propeller which it is claimed will go a long way in lessening the noise and vibration caused by the existing type of airplane propeller. It is claimed by the inventor that his propeller by attaining the maximum of thrust will increase speed and at the same time require less engine power. Instead of being smooth, the blades of the propeller have a number of flanges made of aluminum raised about six inches, which run in parallel lines across the surface and work just as the teeth of a turbine. With the new propeller the wash of the wind from the blades drives in a steady flow instead of striking the planes and struts in whirling gusts thereby increasing vibration. The grip of the serrated blades in the air is much greater,

and therefore a much higher speed is obtained in taking off. It is understood that the Handley Page Company contemplate making exhaustive tests of the new invention in the near future. One of two well known pilots who have tried the new air screw privately are satisfied that it fulfills all the claims the inventor puts forth.

"AVIATION DAY" AT SEYMOUR, INDIANA

The establishment of the Western Airline Company's engineering division at Seymour, Indiana, was the occasion of a celebration of "Aviation Day" at that place on July 8th last. This event was held under the auspices of the Seymour Chamber of Commerce, and those from out of town who assisted were Major Longanecker and Lieut. Charles McK. Robinson, of Fort Benjamin Harrison, Ind., W. M. Flagley, Secretary of the Curtiss Indiana Company of Kokomo, Ind., and W. S. Sanders, Secretary of the Indianapolis Aero Association. Flights over the city were made in the afternoon. The evening program was held in Schneck Park, one of the most beautiful parks in Indiana, and plans were formulated for a big aviation meet to be held late this fall. Addresses on aviation and its possibilities were made by prominent citizens of the city and officials of the Western Airline Company.

COMMERCIAL AVIATION IN GREAT BRITAIN.

A recent report of the Air Ministry on Civil Aviation states: "Commercial flying in Britain was at its lowest ebb during the six months to March 1921, but has subsequently improved since subsidies have been introduced and developed and the Imperial air routes are progressing. A site is being purchased for an aerodrome in Malta, and arrangements have been made with the Sudan Government for the upkeep of aerodromes on the Cape to Cairo route. The main trunk of the route will be prepared in India between Rangoon and Bombay via Calcutta and Allahabad."

A NEW WING

Mr. G. M. Wright, General Manager of the Dayton Wright Company, has announced the invention of a new airplane wing, which it is claimed will increase the speed of an ordinary type of bombing or commercial airplane to 125 to 140 miles an hour and its load of explosives or merchandise from 450 to 2500 pounds, in addition to fuel for a 1000-mile flight. It is further claimed that it will enable the commercial pilot to load his machine to the maximum and vastly increase his speed on routes where ordinary landing fields are available, or on new routes over emergency and small fields he can so reduce his landing speed as to alight in a comparatively small area, making possible the establishment of terminal facilities only a few hundred feet square in the heart of large cities.

FROM THE AERO CLUB OF OMAHA

THE INTERNATIONAL AERO CONGRESS

Omaha, Nebraska, will be the Mecca of all airmen next Fall, the Omaha Aero Club sponsoring an International Aero Congress to be held in that city on November 3rd, 4th and 5th next. According to Mr. Earl W. Porter, President of the Aero Club of Omaha, the club has the backing of the Ak-Sar-Ben, Chamber of Commerce and other business and social organizations of the city, and has selected a Board of Governors composed of 25 men to underwrite the meet financially to the extent of \$30,000.

It is proposed to divide the Congress into four parts according to the following plan:

First: The National Reunion of Airmen - the first since the war - to which 10,000 aviators are expected. During the Congress there will be group reunions of squadrons, esquadrielle, ground schools, Ft. Omaha Balloon School, and other groups in the service. As a result of the reunion a National Organ-

ization of Airmen will be formed which will hold a similar position to the Air Service as the American Legion does to the Army. Officers and headquarters, policies and program for the National Body will be made in Omaha at the Congress.

Second: The Aerial Exhibit, which will comprise exhibits of every type of plane, balloon, blimp and other aircraft manufactured, including parachutes, bombs, guns, aerial cameras, mosaic maps, government exhibits, and everything pertaining to the air. It will be held in three circus tents adjoining the flying field. The first aeroplane engine ever built will be shown, together with the pieces of the first motored blimp ever made.

Third: The Air Meet. Ten thousand and perhaps fifteen thousand dollars will be offered as prizes in the first three days' events, to consist of derbies, sprints, climbs and stunts by balloons or planes and flying boats. It is the intention to try to establish an altitude record in Omaha during the Congress. One of the derbies will be a tri-city affair between Omaha, Kansas City and St. Louis, or Omaha, St. Louis and Minneapolis. The prizes will exceed those offered at the Pulitzer Trophy Races in Detroit. As the fifty-two American Aces will be at the reunion, they will also be present at the Air Meet, and it is hoped to attract the best pilots of the world to take part in the races.

Fourth: The Aerial Pageant, written by Rupert Hughes and Eddie Deeds, jointly. The pageant depicts the bombing of a French village by German planes and the conquering of the German aviators by American aces. The General Electric Co. is cooperating and is to send its expert who designed the lighting effects at the Panama-Pacific-San Diego Exhibition to design the electrical and pyrotechnical effects for the Omaha Congress. A wooden model of a French village will be erected in the field; 100 people form the cast, in costume, and thousands of visitors from the Middle West are expected to attend this feature alone.

At the present time State organizations of airmen are being formed in each State in the Union, which will send delegates to the National Meet in Omaha. In addition to this, all the Aero Clubs will be asked to send delegates to take part in the Meet. Invitations have been sent to President Harding, Marshal Foch, the Prince of Wales, Sir Douglas Haig, and others are being prepared.

The Omaha Congress closely follows the American Legion National Convention at Kansas City, to which Marshal Foch and President Harding have already promised to come. Special rates for the Congress will be obtained from all parts of the country, and President Carl Gray of the Union Pacific Ry., who is a member of the Board of Governors for the Congress, will be asked to furnish a special car for the distinguished visitors en route from Kansas City to Omaha. Special trains are being arranged for.

Omaha will be decorated from the depots to the field and through all its principal streets for the big event. Every automobile in the city will bear the placard: "Hop in, you Flyers! This is your car!" The city is to be turned wide open to the visiting airmen.

Never before in history has such a Congress of Aviation been held and never before has so ambitious a project been planned. The combination of reunion, National Organization, exhibit, air meet and pageant are epochal in the history of aviation.

DELIVERING NEWSPAPERS BY AIRPLANE

The Oregon, Washington & Idaho Airplane Company of Portland, Oregon, western distributors for the Curtiss Aeroplane & Motor Corporation, report an interesting commercial venture in the delivery of newspapers. Last year from mid-June until September, on 75 consecutive week days, copies of the Oregon Journal were delivered to Seaside and Astoria from Portland by flying boat, a distance of 120 miles. By this method the Journal beats all other papers by hours and is consequently very popular with the large summer colony at these beaches.

Because of the success of this delivery last year, the service is being repeated this year, the first papers being carried on July 3rd with complete details of the Carpentier-Dempsey fight. It is the boast of the company operating the line that the papers will be delivered in spite of weather, and to date they have supported this boast by 100% service.

COMMODORE CHARLTON ON THE BOMBING MANEUVERS

Air Commodore L.E.O. Charlton, the British Air Attache, under date of July 15th, addressed the following letter to the Chief of Air Service:

"A word of congratulation to you on the remarkable efficiency displayed by the Provisional Air Brigade on July 13th. Apart from the success of the attack on the Destroyer and the accuracy of the bombing, I cannot sufficiently admire the effort whereby so large a number of land machines were concentrated at such a distance from the coast.

Hearty congratulations also on the almost complete immunity from accident, a tribute to the ground efficiency at Langley Field, and in general on the bravery and keenness shown by all concerned.

I write this with no thought of formality and speaking from the heart."

ARMY PLANES IN MAN HUNT

On June 11th the San Francisco BULLETIN printed a story to the effect that Army planes were ordered out in the hunt for Roy Gardner, a mail bandit, who escaped for the second time from Federal officers at Castle Rock, Washington, while being taken to McNeill's Island penitentiary to serve a 25-year term for robbery. The story goes on to state that the flyers were under orders to use deadly phosgene gas bombs, if necessary, to kill or capture the bandit. The Commanding General of the 9th Corps Area wired the Commanding General of Camp Lewis, Washington, to the effect that the United States Marshal has requested army airplanes to be used to locate the escaped convict and authorizing him to utilize the planes at the camp if in his belief such can be of material assistance.

It appears, however, that the United States Marshal did not get in touch with the Commanding General at Camp Lewis, nor could the latter locate him. It was believed, therefore, in the absence of a definite plan, that the use of government planes would not give material assistance and no aerial search was instituted in this connection. Hence the information contained in the story above mentioned is entirely erroneous in so far as aerial participation by government planes in the 9th Corps Area is concerned.

CHILEAN AIR SERVICES

Chile is exerting herself to some purpose in regard to the promotion of both military and commercial aviation. In regard to the first-named, the Government recently gave its support to a collection of funds throughout the country in order to provide a national military air service. A considerable proportion of the sums raised has been received from the sale of floral emblems offered in the streets by Chilean ladies, both native and foreign. The Chileans seem to have subscribed very liberally towards this object, the amounts collected in Valparaiso and the sea-coast suburb Vina-del-Mar having amounted to nearly 400,000 dollars in the course of one day. In the capital, Santiago, over 260,000 dollars were collected, and more than one million pesos in all have now been raised.

WHY IT IS WRIGHT

The Wright Aeronautical Corporation of Patterson, N.J., has started a monthly publication for the benefit of its employees and judging from the first issue just received, bids fair to make its mark among the aeronautical journals of the country. In its leading article is set forth the aims of the publication, which are three-fold: First, to create good feeling in the "Wright family"; Second, to bring about co-operation between the various departments whose combined work builds the Wright aeronautical engine; and Third, to bring every Wright Aeronautical employee in contact with the entire world question of aeronautics. For the benefit of our readers we are taking the liberty of quoting an interesting article appearing in this publication under the above caption, explaining the transformation of the Hispano-Suiza motor into the Wright motor. It reads as follows:

"If almost any one of us would sit down and think, he would find that he knows some man or woman who, though born on foreign soils, came to these shores at an early age and who has been so imbued with the American spirit and so changed in mind and soul that they are no longer anything but American.

The Hispano-Suiza motor is a mechanical analogy of such a person. At an age early in its aeronautical life we brought it to America and have so surrounded it with the atmosphere of American engineering ingenuity and so imbued it with that "be the best" spirit which is the all-prevailing thought of American industry, that it is no longer the Hispano-Suiza, but a thoroughly American product, to which we have given the good old American name of Wright, in honor of the progenitors of all flight.

The old saying that nothing in this world can remain stationary is particularly true in everything pertaining to aeronautics. An Aeronautical engine must change constantly; must be improved to meet the varying demands placed upon it by plane designers and by the needs of the Army and Navy Air Services.

The Corporation was well aware of the criticism against the Hispano to the effect that the valves were delicate and set about the solution of this problem. To illustrate the results obtained by the change in cylinder construction, one Wright engine has been running at Carlstrom Field, in ordinary flight for more than 400 hours without overhaul.

More than fifteen major mechanical changes and improvements have been made in the "Hisso" by the Wright engineers.

The early French engines had very thin heads in the cylinder sleeves and considerable trouble was experienced with the valves. At first the Wright engineers thought the trouble was due to valve warpage, but careful study revealed that it was due to cylinder head warpage. The thickening of the cylinder head did away with the thinplate or diaphragm action of the thin head and permitted expansion without warping. This elimination of warping assured the perfect seating of the valves.

The valves themselves were also somewhat changed in design. The size of the neck was increased to allow a better heat flow away from the face of the valve, thus keeping it cooler and making it less likely to burn. The design of the cylinder block was changed to allow increased circulation of cooling water around the exhaust valve seats.

The installation of American magnetos and an American ignition system was one of the first changes.

The design of the pistons was altered completely. The piston pin was changed from the fixed to a floating type. The modified piston does not burn so easily, and is a better manufacturing job. The original Hispanos had a set screw which held the piston pin in place. This in service, due chiefly to the carelessness of mechanics, was sometimes likely to drop out, often going through the head of the piston or through the bottom of the crank case. This permitted the piston pin to rub against the cylinder wall, scoring it, and spoiling the motor until expensive repairs could be made. The floating type of piston pin, it has been found, gives better wear than the fixed type.

Changes were also made in the connecting rod and bearing. The French inner connecting rod and bearing were integral with each other. This made the lightest possible construction, but defects were that the manufacture of these bearings were exceedingly difficult and their life in actual service very short even under the best conditions. The change to the Wright type gave a great increase in duration of this member, and also made a simpler manufacturing operation.

A new carburetor for the Hisso was also developed. The new carburetor has many merits, but the most important is the more complete control of the mixture. This is especially useful in altitude work.

Several changes were made in the magneto bracket until a modification was obtained which made it possible to use a straight engine bed in the plane, simplifying removal and replacement. A change in the vertical shaft which made for greater ease in manufacture and in timing was also made.

The French design of the lower half of the crankcase was for a wet sump meter, that is, one carrying its own oil in the lower half of the crankcase. On steep dives or steep climbs this meant there was danger that the cylinders in front or in the rear would be flooded. The first American modification was to use an auxiliary oil pump placed on the rear of the magneto bracket to make the meter a dry sump job. This was found to be only a makeshift. A later design

placed all oil pumps together in a compact unit, easily accessible and properly placed. An oil lead from the front end of the camshaft housing was run back down to the crankcase to take care of overflow oil when the plane is diving, as well as to prevent the camshaft housing from inundation and possible leaking down the valve stems.

A slight change was also made in the upper half of the crankcase in order to give oil a direct lead to the front thrust bearing. This improvement permits unobstructed lubrication of the bearing, which is very heavily worked and is also a precaution against possible trouble from partial failure of splash lubrication. The rear end of the crankcase was slightly changed to accommodate the magneto bracket, which is interchangeable on the 180 and 300.

The design of the water pump attachment and outlet was slightly modified to make them more compact and accessible. A fuel pump for handling gasoline without the use of a pressure tank and air pump has been provided on the bottom of the new magneto bracket, and provision has been made for the installation on the magneto end of the engine of a standard type electric starter.

But although the "Americanized" engine is, in the opinion of many aeronautical experts besides those of the Wright Corporation, as near perfect as is possible in this year 1921, the work of altering, improving and amending is going ahead as steadily on the Wright motor as on the old "Hisso" from which it developed."

AND I LEARNED ABOUT FLYING FROM THAT

A casual review of the casualties as the result of airplane crashes in the Army Air Service for the past few months reveals the fact that an amazingly large percentage of the pilots, whose lives were lost, were amongst the best and most experienced fliers in the service. Another startling fact is the manner in which these crashes occurred. Two lives were lost some months ago through a ship being thrown out of control by striking a flag staff on the airdrome over which the pilot had been flying for months. Another more recent crash, in which the lives of two splendid officer pilots were lost, was caused by striking a tall tree on the edge of their home airdrome. Many other similar accidents could be mentioned, the details of which are well known to the flying personnel of the Air Service. No one will ever know the exact cause of these accidents, but it seems reasonable to believe that in a great many cases the blame can be charged to relaxation of vigilance as the result of over-confidence. While it is neither necessary nor desirable that pilots should, while flying, keep themselves constantly under the nervous tension that characterized their training days, the fate of our associates above mentioned should prove that it is very good practice to be a hundred percent vigilant when flying close to the ground, even over the most familiar territory.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England.

Four English and two ex-German airships of the latest type, together with a large quantity of spare engines, fabric, gas bags, station equipment, and general stores for airships, are offered free to any British commercial syndicate prepared to use this material for the development of airship transport. Various offers have been put forward during the past few months for relieving the Air Ministry of control of its airship services, but no satisfactory arrangements have so far been reached. The urgent need for economy has now decided the Government that unless a firm offer is made before August 1, all airships, stations, and material will be handed over to the Disposal Board.

A mysterious monoplane, the appearance of which puzzled for a time even those in the aeronautical world, appeared in the air the other day, flying fast, over Hendon, Golder's Green and Cricklewood. At some periods it seemed to be almost still. Eventually the mystery was solved. It seems that Messrs. Handley Page, in their researches with their new slotted planes, had fitted experimental monoplane wings to a D.H. 9A fuselage, with a 400 h.p. Liberty motor and were obtaining actual flying data in regard to one or two questions which had arisen. In a recent interview Mr. Handley Page stated that with

the new wing machines will be able to land at considerably less speed than before, and that the machine which they had been testing has landed at 35 miles an hour instead of its previous speed of 45 miles an hour. When perfected in a commercial form the Handley Page wing will, it is calculated, enable ten passengers to be carried at 100 miles an hour with the power of only one 350 h.p. motor.

France.

A new type of flying machine recently made its appearance at Longchamp race-course when M. Gabriel Poulain, champion cyclist and inventor, gave an exhibition on his cycleplanes. This curious machine, which M. Poulain calls his "Aviette", consists of a bicycle provided with wings similar to those of a small biplane. In spite of its unwieldy appearance, the inventor controlled his machine with much dexterity and succeeded in rising to a height of about one yard and gliding 15 or 16 yards through the air. He took off from the ground at a speed of 30 miles an hour, and landed again with the aviette perfectly balanced. M. Poulain stated that his short flight had convinced him that as soon as he had discovered the knack of raising his machine a few feet from the ground he would be able to fly several hundred yards with his cycleplane.

Two ex-German airships, L 72 and LZ 113, are in the possession of France, and it is understood that one of these is to be used for commercial purposes. At Cuers near Toulon, one shed 738 by 130 feet is completed, and a second one of the same dimensions is under construction. The shed at Maulbeuge, constructed by the Germans, which is 737 by 106 by 131 feet, is at present used for accommodating the LZ 113. A large gas plant is being installed. Seven of the German airship sheds allocated to France under the terms of the Peace Treaty are being dismantled with a view to their re-erection in France and the Colonies. It is understood that they will probably be erected at Marseilles, Paris, Tunis, Casablanca, and Algiers.

Approximately 47,000,000 francs was allocated for work in connection with airships, airship stations, etc. in the French estimates for 1921.

The Union for Security in the Aeroplane, which is offering prizes for inventions tending to render airplane travel more safe, has awarded its first prize of 10,000 francs to Messrs. Gastambide and Lévassieur for their airplane with variable surface. The second prize has been awarded to M. LeFrieur for his steering apparatus.

Sweden.

The Swedish Air Traffic Company is considering the establishment of airship routes between Stockholm and Berlin, London and Petrograd. In 1920 the company was granted a subsidy of 1,750,000 kroner by the Swedish government for the erection of an airship base at Arstadal, near Stockholm.

Italy.

The Navy has cut down its airship forces to a minimum, retaining only one large airship station in commission and six in reserve. The military department, which is also closely allied with civil enterprise, has retained the big experimental and constructional works at Rome. Three airship stations are kept in full commission and five in reserve. One rigid airship surrendered by Germany is flown for experimental and training purposes. Owing to the disturbed state of the country and its finances, civil aviation, especially on the lighter-than-air side, is in a very unstable condition.

Germany.

Germany has been allowed to retain four airship stations with sufficient gassing arrangements for International Civil Aviation. These are Lowenthal (Friederichshafen), Staaken (Berlin), Nordholz (Frisian N.W. Coast) and Seddin (Baltic Coast). The Zeppelin Company has also been allowed to retain all its factories intact, with the exception of the large airship erectional shed.

According to the Special Correspondent of the London Daily Mail, Germany today has the most up-to-date, complete and regular system of aerial traffic

routes. It appears that Allied restrictions have helped its air industry because they have forced constructors to design new and more modern types of machines instead of remaining content with the old war models. Heavily subsidized by the Government, the air companies, which are mostly supported by the big shipping firms, have 12 trunk routes in which airplanes fly daily, covering the country from end to end. It is easier to tour Germany by air than by the slow and crowded trains. The train fare for the 200 miles from Berlin to Bremen is about £1, and the journey takes six hours. It takes one third of the time by air, and the cost of fare is £1, 17s. 6d. The German Government pays a subsidy of 1s. 9d. a mile, in return for which the pilot carries a small bag of letters the size of a schoolboy's satchel. The services are too new to be popular with the public as yet, and it is the mail subsidy that keeps the project going.

Venezuela.

A novel and interesting use of the airplane is to be made by the British controlled oil fields, which is despatching to its properties in Venezuela a flying boat to be used in oil prospecting work in the Orinoco Delta. The flying boat has been constructed by the Super Marine Aviation Co. of East Cowes, and will be equipped with the latest apparatus for air-photography and other accessories essential to the work it is to undertake.

SQUADRON NEWS

Kindley Field, Fort Mills, P. I., May 23.

Work on the new concrete plane launching tramway has been practically stopped due to the rough sea in the past week. There is an urgent need for its rapid completion before the Typhoon Season breaks. The rough sea of the past week has lined the beach with an accumulation of rocks and debris that makes plane launching a long drawn out task.

A net work of walks are being laid out in and around the Air Service garrison. As the greater portion of the post has been built artificially from a composition of earth similar to Gumbo in its attraction to foot-wear after a rain, these walks are not only a new facility but add greatly to general appearances.

Lieut. Charles G. Ellicott left the latter part of last week on a trip to the Southern Islands on detached service.

Lieut. Norman R. Wood has been relieved from duty as Coast Defense Utilities Officer and returned to the squadron for duty.

Lieut. J. P. Richter has been designated Commanding Officer of the 2nd Aero Squadron during the temporary absence of Lieut. V. Hine at Baguio.

Fairfield Air Intermediate Depot, Wilbur Wright Field, July 5.

The National Cash Register Company entertained the officers of this field and their families at lunch on Friday, July 1st. The afternoon was spent in visiting the plant and in viewing motion pictures representing the history of the industry.

Lieut. and Mrs. Charles M. Leonard entertained informally on Monday, June 27th. The evening was spent playing bridge, the ladies' first prize being won by Mrs. Charles W. Steinmetz and the gentlemen's first prize by Captain Thomas Boland. The consolation prize was awarded to Mrs. John Cosler. On the following evening a bridge party was given by the Officers' Club, Side Slip Inn was prettily decorated, and delicious refreshments were served. At the conclusion of the evening's entertainment the ladies' first prize was awarded Mrs. Charles M. Leonard, and the gentlemen's first prize to Lieut. Webb. The consolation prize was received by Mrs. Steinmetz, the winner of the first prize the previous evening.

The Post band participated in the 4th of July celebration at New Carlisle, Ohio, rendering concerts in the afternoon and evening. Fourth of July activities at the post were somewhat restricted, owing to an anti-fireworks order made necessary by the temporary and inflammable condition of the buildings. This resulted in a considerable bombardment along the river on the opposite side of the flying field. No casualties were reported.

The officers are taking great pleasure in complying with recent instructions from the War Department to the effect that a certain amount of annual leave is essential to their efficiency. This statement, in connection with War Department Order No. 25, authorizing them to appear in civilian clothes when off duty, has caused such a rush of business that the Post Exchange Officer can hardly take care of the business along these lines and, like the country store-keeper who could not keep bananas nohow because somebody bought them all soon as he got some in stock, has decided to discontinue several lines of merchandise.

The baseball team played in hard luck during the past week, losing games with the Gordon-Howard Team of Middletown, Ohio, and the Yellow Springs team of Yellow Springs, Ohio. Revenge will be sought in return engagements in the near future.

First Lieut. Malcolm N. Stewart left July 5th for Davenport, Iowa, where he will spend a month's leave at the home of his parents. Lieut. Stewart and family are driving from here to Davenport, stopping at several points of interest en route.

Mrs. Paul R. Turpin has been granted her annual leave by the Depot Supply Officer, Lieut. Paul R. Turpin, and has reported to her home in Missouri. From all appearances, the post will soon be a bachelors' paradise if continued hot weather drives away many more of the ladies.

Lieut. Gerald E. Ballard, accompanied by Staff Sergeant Rigney, mechanic, left for Langley Field, Va., in a Martin Bomber on July 2nd. He was forced down at Uhrichsville, Ohio, by a leaky radiator connection. This was quickly repaired and he proceeded to Moundsville, W. Va., where he was delayed until July 5th by fog and storm.

Balloon Company No. 31, Camp Knox, Ky., July 2.

On Friday and Saturday Camp Knox was host to a large and enthusiastic crowd of visitors on the occasion of the Annual Motor and Horse Show. The Motor Show on Friday afternoon included Personnel cars, Staffand Reconnaissance cars, Trucks, Ambulances, Kitchen Trailers, Tractors, Gun Sections, Caisson Sections and Wire Cart Sections. A barn dance at night with the Field Artillery School as hosts proved to be a most enjoyable affair. Saturday the Horse Show took up the day, with events for ladies and children in the morning and Officers' jumping and polo events in the afternoon. Major General Read, Commanding General of the 5th Corps Area, and Major General Snow, Chief of Field Artillery, were the guests of Brigadier General Lassiter, and the Guests of Honor. Cups to the winners were presented by General Read. A dance was held in the evening under the auspices of the R.O.T.C. Sunday was occupied with a golf tournament in the morning and three polo games in the afternoon.

The weekly Officers' Hop was postponed until next Thursday, when it will be held in honor of the officers and ladies of the 40th Infantry which has just arrived for station.

The 31st Balloon Company spent a busy week in connection with the Artillery R.O.T.C. Six students were sent over each morning and taken up by Lieutenants Farnum and Benson for a short demonstration flight, during which they were shown the terrain and a few operations made with one or two of the six R.O.T.C. Batteries which fire every morning. These students are intensely interested in the work and enjoy the trips. The company has worked hard each afternoon preparing for its own show and demonstration of technical equipment to take place Tuesday afternoon, July 5th. The Commanding General will be the Guest of Honor, and the entire garrison has been invited.

The Class "A" target range is nearly completed and will be used for the first time on Tuesday.

On Wednesday the Balloon was taken across country for a trip of about five miles each way, with 12 obstacles to cross. It was hot work, but a good job was made of it, the trip out and back consuming $4\frac{1}{2}$ hours, with 45 minutes' observation at O.P. #9 behind an R.O.T.C. Battery. The winch was used with the new tender, and the double-hook and long rope was employed on most of the jumps.

Hqrs. 91st Squadron, Municipal Flying Field, Eugene, Ore. June 25.

Work is continuing on the flying field in the way of smoothing it off and mowing the grass. The water pipe line is now laid from the edge of the town, and electric lights for the tent camp are finished.

In the regular forest patrols made this week, thirteen fires were reported.

Lieut. Grandison Gardner is back with the Squadron after being stationed at Camp Lewis, Washington, with Flight "B" since May 1st.

A deForrest Radio Set is being installed at the field, and the large "T" antenna, 75 feet high, is now under construction.

The 91st Baseball Team defeated Waterville last Sunday by the score of 11 to 2.

Air Service Mechanics School, Chanute Field, Rantoul, Ill., July 11.

A "Get together" smoker was held by the organization on the evening of July 7th. Several excellent boxing bouts were put on by members of the command. Cigars and cigarettes were passed around in plentiful quantities, also large amounts of that deceiving beverage, near beer. Towards the middle of the evening Major Stratemeyer gave a short talk to the men, expressing his appreciation to the officers, enlisted and civilian personnel for the work done while under his command.

Air Service Mechanics School, Chanute Field, Rantoul, Ill. July 11, Cont'd.

It is with the most sincere regret that the Air Service Mechanics School received news a short time ago of the relief of Major George E. Stratemeyer, the present Commandant, he being slated to leave for the Hawaiian Islands in August. His new assignment will be Luke Field, and his successor, Major Frederick L. Martin, is expected here from Kelly Field in the near future.

Major Stratemeyer arrived in Kelly Field, Texas, January 7, 1918, and was given the detail of organizing the Air Service Mechanics School, then known as the Enlisted Men's Training Department of the Air Service. During the war this organization turned out over 4,000 graduates. Upon the signing of the Armistice the school was temporarily closed, but a short time later it was reopened and since that time approximately 2500 men have been graduated therefrom, the courses being from four to six months' duration. At the present time the school is equipped to give instruction in 22 courses, - all Air Service trades. It is the largest school of its kind in the Air Service.

Ross Field, Arcadia, Calif. June 22-30.

The Officers' Club gave a formal dance on Friday, June 17th - the last of a series of dances given during the month of June. The Santa Anita Officers and Enlisted Men's Club was beautifully decorated for the occasion. The dances for July have not been announced, but it is rumored that they will be informal and will be preceded by swimming parties in the large swimming pool soon to be opened at the Club.

Ross Field was defeated in a baseball game with March Field by the score of 10 to 3.

Construction work on the married officers' quarters is rapidly nearing completion, and very soon facilities and apartments will be available for a number of families.

On June 20th Sections 22 and 23, now taking the Balloon Observers course, together with Captains R. E. O'Neill, H. E. Weeks, and 1st Lieut. W. M. Clare, of the Air Service, as instructors, went to Martin's Camp, near the top of Mount Wilson, for the purpose of taking preliminary training. This camp is located one mile above sea-level, and the Observation Hut is located on Point Harvard, which gives a remarkable view of the valley, extending from Pomona to the east to Los Angeles on the west and to the ocean on the south.

In taking two sections to this observation point, preliminary observation training can be given the entire 22 students at one time, whereas by going in the balloon but one student can be given instruction at one time. The visibility has been exceptionally good the first four days, and with further good visibility preliminary observation will be completed within another week.

The living accommodations at Martin's Camp are excellent, and the entire student body is deriving real enjoyment out of their stay at the same time that they are learning observation work.

On June 22nd Prof. Ferdinand Ellerman, Chief Astronomer of the Mount Wilson Observatory, took dinner with the officers at Martin's Camp, and later all the officers were given an opportunity to minutely inspect the largest telescope in the world. Each officer was given an opportunity to look through one of the smaller telescopes and also the process of determining the composition, size and distance of heavenly bodies when the spectroscope was visited.

At the monthly field meet held on June 24th, Balloon Company No. 13 won with 35 points to their credit, Balloon Company No. 25 being a close second. Much interest and competition is being brought about by these meets, and although the several other balloon companies do not make as many points, there is so much competition between the 13th and 25th Companies that the other balloon companies take sides and get as much spirit out of it as though it were their own company.

Through the cooperation of Dr. Ford A. Carpenter, the Commanding Officer recently secured the services of Dr. R. B. Baumgart, the internationally known lecturer, to deliver a lecture on Astronomy to the officers and men of the field. Dr. Baumgart took his audience with him from the fertile

Ross Field, Arcadia, Calif. June 22-30, Cont'd.

fields of Southern California to the top of Mt. Wilson, inside the Observatory where the largest telescope in the world is situated, and straight to the surface of the moon. From there the spell-bound listeners hurtled through space to the outer edge of the sun, wandered around among the stars, millions of which are never seen by the naked eye, stepping farther and farther into the vast reaches of space until an occasional gasp of a brother officer brought the solar system back to the darkened lecture room. Every moment of Dr. Baumgart's lecture was enjoyed and some new thought brought forth, and it is hoped that this post will receive a return lecture by Dr. Baumgart again in the near future.

Many improvements have been taking place at Ross Field during the past month. Besides the construction of quarters for officers and noncommissioned officers, many trees and shrubbery have been planted and with the grass and flowers at their best Ross Field presents an atmosphere that is very pleasing.

San Antonio Air Intermediate Depot, Kelly Field, Texas, July 9.

This Depot was highly complimented by winning the large silver cup presented by the San Antonio Real Estate Board for the most beautiful yard among the aviation camps in the city. The grounds around the depot present a very beautiful appearance at this time of the year, as the flowers are all in full bloom and the trees and lawn are in excellent condition.

The baseball team representing the San Antonio Air Intermediate Depot in the Army League has been playing some wonderful baseball, having won the last six games and coming up from the cellar position, as a result of losing the first four games, to a position very close to the top. On July 6th the Depot team defeated the strong Kelly Field team 4 to 3, Lieut. Dixon driving in the winning runs with the bases loaded.

A team composed of the officers of this Depot went over to Camp Normoyle on June 28th and defeated the officers' team of that camp by the decisive score of 14 to 3, despite the royal rooting of the entire Camp Normoyle personnel strengthened by the camp band.

Four new houses for officers' quarters are being built, and when finished this depot will have an Officers' Row that will be one of the finest in any of the army posts in the country. The houses are of bungalow style, each having six rooms and servants' quarters, and each being of different style of construction.

The Aviation Repair Depot which was moved from Dallas and consolidated with this Depot, being located in the hangars formerly occupied by the Air Service Mechanics' School, is now turning out overhauled planes and engines daily. The old row of hangars have been converted into a modern airplane factory.

Several of the new Orenco's have been set up at this field and attract a great deal of attention, due to their neat and compact appearance and their tremendous speed.

One of the G.A.X. armored triplanes is being set up, and the officers are greatly interested in its initial flight.

Mather Field, Sacramento, Calif., June 28.

Captain R. L. Walsh, Post Operations Officer, as pilot, with Mr. Hess of the Forestry Service as passenger, made a flight to Visalia and March Field, on the 19th, for the purpose of inspecting the sub base at Visalia and to confer with the Commanding Officer at March Field, where it is planned to have a small detachment of men working on forest patrol during the coming season. They returned by way of Visalia on June 21st.

Visitors at Mather Field during the week were Lieut. H. Halverson, piloting Major Herman and Sgt. Fowler by plane from Crissy Field. Mr. Reddington, Chief Forester of the 12th District, brought three members of the Forestry Service, Washington, D.C., to the field on June 25th.

Mather Field, Sacramento Calif. (Cont'd)

Captain A. W. Smith, M.C., one of the flight surgeons in the service who has gained his wings, reported from March Field for temporary duty with one of the forest patrol detachments. Captain T. H. Miller, M.C., Post Surgeon, returned to Mather after a two weeks' leave of absence. He and his family enjoyed an easy motor trip from Riverside, where his two daughters have just finished their school year.

Lieut. Paul L. Williams, commanding the 9th Squadron Forest Patrol Detachment at Wasalia, Calif., arrived on the 20th to complete arrangements for the transfer of the balance of the flight to the sub base at that point. He returned by plane, the two cadets and three enlisted men being transferred the same day. Capt. L. H. Smith and Cadet Draper of the 91st Squadron arrived by Plane from Eugene, Oregon, where the squadron is on temporary duty on forestry patrol work, and flew back on the 21st.

Preliminary forest patrols from this station were made on June 23rd and 24th, two patrols being made daily, and Lieut. J. A. Madarasz, Cadet Hedrick, Sgt. Fisher and Cadet Bales participating as pilots and Cadets Bartlo and Hantsche as observers. Ten fires were reported, the total flying time being 19 hours and 10 minutes.

Luke Field, H.T., June 11.

The tennis tournament for the doubles championship of Luke Field was begun on June 9th. Ten teams are entered.

In addition to the regular program of moving pictures furnished by the Service Club during the week, Mrs. Hall, concert singer from Honolulu, gave an enjoyable entertainment Friday night.

The Luke Field Baseball team played the team from Fort Armstrong on June 4th and June 8th, and won by the decisive scores of 11 to 5 and 28 to 1.

The Tug of War team is training for the meet on July 4th.

During the week Lieut. Auerswald of the Naval Air Station and Major Curry, Department Air Officer, visited the field and participated in flights.

The 5th Group was actively engaged during the week on various bombing and observation missions. On Wednesday the combined strength of the 5th Group was led on an attack mission against Kekapa Island by the Group Commander. The squadrons were split up into small maneuverable 5-ship formations which followed through all activities initiated by the leader. Twelve planes participated in the attack and, aside from a slight confusion of signals at the time of forming, the different flight commanders handled their units exceptionally well throughout the raid.

Hqrs. Detachment, 4th Observation Group, Paranaque Beach, Manila, P.I. May 21

Message dropping on U. S. Naval Destroyers in Manila Bay is a part of the training of the 2nd Aero Squadron, stationed at Corregidor Island. The dropping of a small message container on the narrow deck of a destroyer at full speed from a much speedier airplane would seem to be a very haphazard performance, but this squadron developed a method which proved after numerous trials to be almost one hundred per cent accurate. The observer in the forward cockpit of an H. S. 2 L. has the pilot fly down over the destroyer at a very low altitude. On approaching the vessel he simply lowers by means of a light string a small water tight container carrying the message. The string invariably becomes entangled in some portion of the vessel, thus making it easy to recover the message. The pilots and observers of the Third Aero Squadron gave a very good exhibition of message dropping from land planes during Carnival Week. The dropped message during the war was often found to be the only means of communicating with the advanced units during a heavy engagement, therefore practically all observation units received considerable training in message dropping.

Captain Ervin, Air Service, is managing the Fort Mills baseball team, which is composed of members of the Coast Artillery, Infantry and Air Service troops stationed on Corregidor Island. His team has not met defeat as yet, and looks good to clean up the Islands, if not the Orient.

The hot season has apparently given way to the rainy season, as the first real tropical rain fell during the week.

Clark Field, Pampanga, P. I., May 23.

The past week has been taken up with the firing of the dismounted pistol course. High scores were quite prevalent during the first few days, but as the distances were increased and the elimination process instituted hands began shaking and flinching became more pronounced. Considering the results obtained last year, however, the final count for this year was gratifying. Thirteen members of the command qualified as First Class and 46 qualified as Second Class. Considering the fact that not more than ten per cent of the command has ever fired the course before, it is thought that in another year several expert pistol shots will be developed in the organization.

France Field, Cristobal, C.Z. July 18, 1921.

After waiting several weeks for weather favorable for cross-country flights a formation of four ships "hopped off" Wednesday for a flight to Anton, a village in the Republic of Panama about eighty-five miles from France Field. The personnel of the flight consisted of Lieut. Blessley (flight leader and an "old timer"), Lieut. Moon, (a new arrival from one of the Texas border stations), Lieut. Foster (a new arrival from March Field), and Lieut. "Polo" Clark (a new arrival from the Texas border and Kelly Field). The flight was begun with a good close formation but as soon as it reached Gatun Lake it was beginning to take on a very ragged appearance due to the fact that all the "new arrivals" had their heads over the side taking in the sights of this very interesting country.

Upon arrival at Anton a landing was made and it was indeed a pleasure to land. The field is unlimited in size, has perfect approaches from all directions, a sod surface, and is as level as a floor. After the first two ships had landed the population turned out en masse and it was with difficulty that the other two got down without depleting said population. A few minutes were taken to go in and see the sights of the city. It was the unanimous opinion of all that the village was not rushed with business as all the streets are carpeted with a luxuriant growth of grass. The village of Anton is a small collection of tiled and thatched roofed houses and huts built around a small plaza. The plaza contains the church, which is a small and very old building of the mission type that is common in Texas and California. Anton is situated inland, about ten miles from the Pacific, and is in the center of a very fertile district which is free of jungle.

The return trip from Anton was made with difficulty as it became necessary to fly around several heavy rains. A "hole" through the clouds was finally located and the flight passed through and returned to the home field safely. These flights will be made at every opportunity so as to familiarize the "new arrivals" with the surrounding country.

With the post quarantined for four days the past week as a precautionary measure against a mild epidemic of influenza then prevalent in the Canal Zone an aquatic meet was held Sunday afternoon to provide an outlet for the pent-up activities of the men. That the ideal swimming that the men can enjoy the year round develops a number of "water dogs" was shown when the swimmers competed in the events for the prizes contributed by Major Walsh, commanding officer, the post exchange, and the Service Club. Cpl. Cassel starred in the races while the honors in fancy diving, won by Sergt. Johnson, were closely contested. Other events included novice diving, plunging, and water races.

Four men of the post returned on Tuesday from a ten-day hunting trip in the Santa Rita mountains of the interior of Panama. The trip proved fairly uneventful and game seemed scarce as the hunters returned with only a captured black monkey and the head of an alligator which the party had killed. A huge poisonous snake was killed in the jungle only after one of the dogs with the men had been bitten. The party included Staff Sergts. Adam Kralik and John Bluhm, Cpls. Gustaf Bloomstrand and Linden Pugh. That game can be readily found in the jungle adjacent to the post was shown when a young jaguar was shot in the post garden when some of the men were working there early in the week.

France Field, Cristobal, C.Z. July 18, 1921, Cont'd.

A DeH-4 on its third test flight came to grief Friday afternoon when a defective landing gear gave way as 1st Lieut. F. P. Albrook, pilot, and Lieut. Odas Moon, passenger, were landing in the machine. The under carriage was wiped away, a longeron cracked as the wheels came up against the fuselage, one wing tip smashed, and the propeller splintered although the occupants were only shaken a bit.

The date of the second monthly smoker of the officers and enlisted men to be held next week has been set ahead to Monday in order that the men sailing on the transport Tuesday may be able to attend.

The arrival of the transport "Cantigny" the latter part of the week brought one replacement officer, Capt. Harrison W. Flickinger, coming to France Field from the Fairfield Intermediate Air Depot, Ohio, where he was engaged on work pertaining to the development of armor plate.

Air Service Observation School, Post Field, Fort Sill, Okla. June 24th-July 2.

The R.O.T.C. men gave a dance at the Officers' Club on Tuesday evening for the officers of the field. Thru the efforts of Lieut. Carroll, a number of charming young ladies from Lawton attended the dance thereby assuring its success. Nearly all of the Post Officers and their wives were present. The music, furnished by the Fort Sill Orchestra, was unusually good and the punch, although punchless, was refreshing. Tumultuous applause, demanding encore after encore, unmistakably attested that all present had a good time.

Mrs. Bradley, wife of the Acting Assistant Commandant, gave a unique party Wednesday evening in celebrating Major Bradley's completion of fifteen years military service. A party consisting of fifteen couples repaired to the popular Medicine Park, where they partook of various delicacies - including watermelon - and indulged in dancing. Everyone present enthusiastically congratulated Mrs. Bradley on her party and the Major on his successful completion of fifteen years' army service.

A very unfortunate accident happened at Puff Target #2 this week. During a small rain storm, a flash of lightning was caught on the radio antenna and transmitted to the powder cans standing nearby. A small explosion immediately ensued, painfully burning seven men. Three of the men are quite seriously burned, and the others, whose cases are not so serious, are also in the hospital.

On advice from the Office of the Chief of Air Service, the course in Observation School at this field has been extended five weeks. The course will now continue until about the 15th of September, instead of terminating in August as had previously been planned. Naturally, this action has been received by student officers with unanimous acclaim. Most of the additional time, however, except the extension of Photography and Military Law for another week, will be taken up with practical work of flying more problems of different kinds.

Outside work of the School has been very much interrupted by the weather man this week. It has only been possible to fly in between rain storms. Some problems of puff target ranges have been carried to successful conclusion, notwithstanding the weather. Many more, however, had to be abandoned just as all of the various agencies, - such as radio, panel details, ship, etc., - incident to an artillery shoot were functioning properly. The inside work, of course, is progressing in accordance with the schedule. The infantry liaison class has progressed to such a degree that they are now simulating Infantry and Cavalry contact work on the Miniature Range.

Three hundred enlisted men are to report here this week. Word has been received that they are en route from Rockwell Field, San Diego, California. This is the best news that has come thru for sometime to this field. There has been a shortage of enlisted men here for sometime past, but it was never felt so keenly as during the present course at the Observation School started in April. The handicap caused by the shortage of men has been very hard to overcome, and was only accomplished by the united and determined effort of officers and men. The personnel here is certainly to be congratulated on the accomplishment of operating a school of this size

Air Service Observation School, Post Field, Cont'd.

with approximately one-third the necessary enlisted men. The advent of the new men will certainly lighten the burden on all concerned, and will not be necessary henceforth to work day and night to keep the machinery of the field functioning efficiently.

The 9th week of the course of the Observation School has been brought to a successful conclusion. The weather has not interfered with the flying schedule this week - a thing mighty unusual these days.

The students proved very adept at precision fire problems on the puff target ranges. It is surprising how accurate some of their sensings are. Most of the time it is necessary to distort the corrections in order not to allow the observer to get on the target too soon and thereby not secure the desired experience.

Opening of the Air Service R.O.T.C. Camp at Post Field, Fort Sill, Oklahoma.

Major H. C. K. Muhlenberg, A.S., Commanding Officer of the Air Service Reserve Officers' Training Corps at Post Field, Fort Sill, Oklahoma, has addressed the following communication under date of July 2nd to the Chief of Air Service concerning the activities of this camp.

"The commissioned personnel of the Air Service Reserve Officers' Training Corps Camp at Fort Sill, since first hearing about the camp, have been receiving sympathy from their friends for the location of the camp at Fort Sill. With this in mind, we all came here with our belts tightened, ready for trouble in keeping the boys amused and exercised, which are items of great importance in the R.O.T.C. program.

"Fortunately, our number is small, only 30 students, so the problem of transportation in these piping times of peace, prosperity and paucity of gasoline is merely a question of obtaining on truck, and is easily solved; particularly as R.O.T.C. funds are available for payment of gasoline bills. Distances to all amusement at or near Fort Sill are so great that it would be next to impossible to comply with our orders to amuse the boys here if we had any considerable number of them to transport with the present and prospective status of gasoline transportation. The little town of Lawton is three miles away, the motion picture theater at Fort Sill is two miles from Camp, Medicine Park (Oklahoma's closest approach to a summer resort) is ten miles, and the Fort Sill swimming hole is three miles away. The only amusements within walking distance are the baseball diamonds and some very mediocre tennis courts. The small number of students that we have enables us to send them by truck daily at 4:30 P.M. to the swimming hole and to the Liberty Theatre at 8:00 P.M.

"It was really very fortunate that everyone painted such pessimistic pictures of Fort Sill, as the students came here prepared mentally for the worst, and when they discovered an excellent mess, barracks for quarters, a swimming hole, and a near summer resort, they decided that the camp might possibly be a success after all.

"Part of the students are camping over the 4th of July at Medicine Park, where there is swimming, fishing, and dancing, and the remainder are being trucked out and back daily.

"On Tuesday, June 28th, the Post Field Officers Club was turned over to the students for a dance that proved a surprise to the garrison in that all the available girls of Lawton were present, due to the efforts of Mrs. John Young and her daughter, Miss Margaret Young, of Lawton. Captain W. B. Wright, A.S., camp morale officer, and Lieut. J. B. Carroll, A.S., camp adjutant, did a quick, thorough job at introducing the students to the girls as soon as the bevy arrived at the club. It was so well done that the orthodox methods of becoming acquainted (the Paul Jones) was unnecessary. The Camp Commander has been busy receiving congratulations on having "pulled" the best party seen at Post Field for some time.

"Due to shortage of enlisted help, the students have had to service the five DH 4B's assigned to them, and have been getting valuable taste of real work in the hangars. It is at times rather expensive experience, however, as it frequently has to be acquired at the expense of the flying.

Opening of the Air Service R.O.T.C. Camp at Post Field, Cont'd.

"The work is really the easy part of the program, as purely military subjects have been reduced to a minimum, and the only thing in the program which is the least bit uninteresting to the students is the elementary instruction in electricity and radio. Orders have been received not to work the boys too hard, which orders we have interpreted to apply to military subjects principally as the special Air Service subjects are too interesting to be anything but play for college boys. A trip thru barracks at any time during leisure hours shows them busy making map boards, writing for the camp paper (the "Takeoff"), or working the buzzers.

"Athletics is a difficult problem to solve, except swimming. Several games of baseball have been played with the Post Field team and the 1st Field Artillery officer's team but picking much of a team from thirty men is something of a job, so our team has been consistently defeated. We find, too, that turning the boys out for baseball after a day of work in this sweltering Oklahoma sunshine is very much of a hardship if indulged in too often. Swimming is usually attended voluntarily by about half of the boys. The volley ball court is used occasionally; but the heat is so great that voluntary athletics is not well attended. Whenever the heat lets up, some form of athletic exercise is made compulsory from 4:30 to 6:00 P.M.

"This year's camp is going to be of greatest value to the Office of the Chief of Air Service, which has a representative on duty at the camp. The lessons learned from its successes and failures would result in a much improved camp next year, and should approve the curricula at the universities, as many weaknesses in the home instruction have shown up in such a way as to impress themselves forcibly on the instructing personnel.

"The officers on duty at the camp are: Major H.C.K. Muhlenberg, Air Service, Camp Commander; Major Clinton W. Russell, Air Service, Executive Officer; Major William A. Robertson, Air Service, Senior Instructor; Captain John G. Whitesides, Air Service, Supply Officer; Captain William B. Wright, Air Service, Morale Officer; and Lieutenant James B. Carroll, Air Service, Camp Adjutant."

Flight "B", 91st Squadron, Camp Lewis, Washington, June 18-July 2, 1921.

A thrilling escape from death, when the plane in which they were flying plunged into American Lake, was experienced by Cadet Hillman and Private Wilkinson on June 15th. Taking off in the direction of the Lake and while at an altitude of 300 feet the motor died almost instantly, and Cadet Hillman was faced with the alternative of plunging the plane into the Lake or the densely wooded area surrounding it. He chose the Lake, in consequence of which the plane now lies buried in 80 feet of water while the pilot and observer are uninjured. With the assistance of the 4th Engineers an attempt is being made to recover the plane by dragging the Lake, and it is expected that the plane will be brought to the surface in the course of the next few days.

An item in the Tacoma Daily Ledger of June 21st tends to illustrate the rapidity of action of the Air Service forest fire patrol service. The article reads as follows: "Capt. Martin, proprietor of the Log Cabin Hotel, Lake Crescent, is still scratching his head over quick action by the forest patrol planes. Martin was clearing a small patch of brush to make room for more cabins and had set fire to it, green boughs causing a flash fire. A plane, flying high overhead, circled three times, wirelessly Camp Lewis, relayed information by land wire to Olympia, and in just one hour a State fire warden was alongside Capt. Martin, asking him why the fire. Considering that the warden had to travel several miles to reach Lake Crescent, this is considered a wonderful feat."

A record flight from Sacramento, Calif., to Camp Lewis, Washington, is believed to have been made June 27th by 1st Lieutenant Robert S. Worthington of this Detachment. Leaving Sacramento at 8:30 A.M., and following a direct course, he arrived in Eugene, Oregon, at 12:30 P.M., and from there proceeded to Camp Lewis, arriving at 3:15 P.M. The total flying time for the trip was six hours and ten minutes, and the total elapsed time from start to finish was six hours and forty-five minutes. The distance from Sacramento to Camp Lewis is approximately 615 miles as the crow flies.

Carlstrom Field, Arcadia, Fla., June 24.

A pleasant trip to Crooked Lake was made by a number of officers and wives, including Major and Mrs. Naiden, Lieut. and Mrs. Chauncey, Lieut. and Mrs. McClellan, Lieut. and Mrs. Woodward, and Lieut. Patrick. Fishing, boating, swimming, etc. were indulged in, and all reported an enjoyable week end. On Friday evening a dance was given in the hotel at Crooked Lake, which was a magnificent affair and enjoyed by all.

The Post Quartermaster Detachment gave a banquet Thursday evening at the Hotel Gordon in Arcadia, in commemoration of the 146th Anniversary of the founding of the Military Stores Department of the U. S. Army. This was known as a long-distance dinner, as all of the Quartermaster detachments of the U.S. Army Quartermaster Corps participated in same.

Playing a loose game of ball, the Post Baseball team met defeat at the hands of Wauchula by the score of 11 to 10. They redeemed themselves, however, on Sunday, by playing a 17 inning game with Brewster. The game was full of flash, with superb pitching by Capt. Razor. Hardaker drove in the winning runs for Carlstrom.

Detachment Flight "A", 91st Squadron, Medford, Oregon, June 27.

Colonel Lawton, Corps Area Quartermaster, passed through this station on June 25th from Camp Lewis to San Francisco, in a DH-4B piloted by Lieut. Worthington of the 91st Squadron. Colonel Lawton seemed pleased with his mode of travel.

This station was visited June 21st by Captain Smith, commanding the 91st Squadron, Lieut. Liggett, Radio Officer of the California Forest Patrol, and Mr. Richard, Radio Engineer, who proceeded to Eugene on June 23rd after inspection of radio station.

Four fires were discovered this week, the number being small for this season on account of the unusually late rains.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field, informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE AUGUST 5, 1921.

RADIO CONTROLLED AUTOMOBILE DEVELOPED BY THE ENGINEERING DIVISION

Small Electrically Propelled Car Under Complete Wireless Control Has Been In Operation For Months.

Recent visitors at McCook Field, the home of the Engineering Division of the Air Service at Dayton, Ohio, have been astonished at the gyrations of a brightly painted 3-wheeled vehicle which has been dashing to and fro between the buildings and among the airplanes on the field under no visible means of control. It is often seen to approach a group of persons blowing its horn wildly, and then when apparently about to strike them, to stop short with screeching brakes, back up with loudly clanging blow, make a sharp turn to the right or left, and to start off in the opposite direction. Great mystification has been shown as to the method of operation of this car, some visitors even wondering if perhaps a combination of the heat and newly made home brew may not have had a deleterious effect upon their observation powers. They are oft times considerably relieved to learn that the car is actually performing as they have seen it, though the mystery is lessened but slightly when they learn that the movements of the car are controlled entirely by radio impulses, which are sent out from the radio station at the opposite end of the flying field. The fact that there is no aerial or antenna system visible merely adds to the mystification.

The car is of cigar shaped construction about 8 feet long, and runs on three pneumatic tired wheels. It travels at speed ranging from 4 miles per hour to 10 miles per hour and the controls are so finely adjusted that it may be easily steered along a narrow road-way.

An examination of the interior of the car shows an amazing and confusing collection of batteries, switches, wires, vacuum tubes, potentiometers, relays, magnetos, etc., all of which are, of course, necessary to the complete control of the apparatus. The most interesting part of the apparatus is the "selector" which is in reality the heart of the entire control system. Various combinations of dots and dashes are sent out by means of a specially constructed transmitter, each combination calling for the accomplishment of a certain operation of the control apparatus. It is the function of this selector to "Decode" these various combinations of dots and dashes which are sent out, and to close the circuits to the desired controls. So delicately is this selector constructed, and so rapidly will it operate, that it is possible to put into operation any one of 12 distinct controls in a period of less than one second. That is to say, less than one second elapses from the time any push button on the automatic transmitter at the distant radio station is pressed until the control on the car is in operation. Such speed of control has never before been accomplished. This car has been controlled equally well from an airplane and from a ground transmitting station.

The possibilities of radio control and its application to war time problems are almost without number. Radio control can be applied to any mechanical apparatus that moves, whether it be in the air, on the ground, on the surface of the water, or beneath the water. Huge land tanks may be constructed and filled with T.N.T. and driven to any desired point along the enemy's lines where the explosive can be fired by means of radio, or it can be applied in a similar manner to a boat, submarine, torpedo, or even an airplane and the explosive can be fired when and where desired. There is also an application in the commercial field, particularly in plants where long hauls between various parts of the factory are necessary.

JW

AERONAUTICAL COURSE AT THE UNIVERSITY OF DETROIT

Feeling confident that Detroit will eventually become an aircraft and an aircraft equipment center and that the demand for men trained in aerial science will become greater as time goes on, the University of Detroit is formulating plans for the establishment of a 5-year course in aeronautics. Commenting on this latest innovation of the University of Detroit, Mr. F. W. Hersey in an article in the "Michigan Manufacturer and Financial Record", raises the question as to whether or not it is possible to do the subject justice in that length of time. He feels, however, that the University of Detroit can produce aeronautical engineers of a caliber superior to any now known, judging by present standards of the University, adding that like medicine, law, chemistry, and the multitude of other sciences, theory in aeronautics is one thing and practice is quite another.

In the opinion of Lieut. Thomas F. Dunn, dean of the new Department of Aeronautics at the University, who was interviewed on the new course, there are two ways of getting an aeronautical education, one to go up in the air and gather some experience, and, if spared for future investigation, return to solid earth and tackle the theory. The other way is to tackle the theory first and then try it out on the air. To convey an idea as to the latitude of this course, the subjects to be taught in the aeronautical course are given, as follows: Higher mathematics, Communication, Mapping, Astronomy, Physics, Meteorology, weather calculations, theory of flight, Balloons, Aerodynamics, Aerostatics, Aircraft Mechanics, testing drawing, Administration, Chemistry, Electricity, Engineering Principles Metal Working, Working Design and Construction, Topography, Wireless Telephony and Telegraphy, Safety Devices, uses of Instruments, some Commercial Law, and all these is or will be on Aerial Navigation Laws, principles of law as it will be applied to the air, and Aerial Photography.

DEATH OF FIRST LIEUT. WILLARD S. CLARK

Piloting one of the new Orenco Scout Planes, 1st Lieut. Willard Shaw Clark, Air Service, was killed when his plane fell about 2,500 feet in a tail spin. The unfortunate accident happened at Ellington Field on June 19th.

Lieut. Clark specialized in night flying and was considered one of the most proficient night pilots and instructors in the Air Service. He participated in important searchlight tests conducted by the Air Service at Carlstrom Field in conjunction with the Corps of Engineers, and was highly praised for his meritorious work. Lieut. Clark was a native of Abingdon, Ill., and was 27 years of age. In August, 1917, he enlisted in the Aviation Section, Signal Enlisted Reserve Corps, as a Private, 1st Class, and was sent to the School of Military Aeronautics at the University of Illinois in November. He passed his R.M.A. test on May 8, 1918, and was commissioned a second lieutenant on June 1st following. After a little over two months' service at Love Field, Dallas, Texas, he was transferred to Payne Field, West Point, Miss., on July 24th, and the following month was sent to Carlstrom Field, Arcadia, Fla., for training as a pursuit pilot. Completing this course and also the aerial gunnery course at Dorr Field, he was assigned to duty as pilot instructor. On September 1st, 1920, he was commissioned a 2nd Lieutenant in the Air Service, Regular Army, effective July 1, 1920, and was immediately thereafter promoted to 1st Lieutenant. On May 9, 1921, he was relieved from duty at Carlstrom Field and ordered to Kelly Field, San Antonio, Texas, for duty with the First Pursuit Group.

The Air Service deeply regrets the loss of this valuable young officer.

SAFETY PRECAUTIONS FOR AIRPLANES

According to a report issued by the Safety and Economy Committee of the Royal Aeronautical Society of England, which has made an exhaustive study of the subject of airplane accidents, it appears that the primary cause of breakdown is due to faults in the installation of engines and oil, water and petrol systems rather than to failure in the engine itself. Among the various suggestions for improvements, attention is drawn to the need of eliminating leakage of oil, which, it appears, is a serious matter, owing to the currents of air which are set up round the engine in flight. The Committee recommends the development of pressure

tanks for petrol storage in commercial aircraft, and calls attention to the importance of the use of a sound petrol gauge. It further recommends that rubber connections should be discarded in petrol pipes and that soft steel tubing be substituted.

With regard to engines, the Committee urges more drastic tests than those at present made, reproducing as far as possible conditions met in actual use, and that aero engines be so constructed that they will "open out" to full throttle within a few minutes of starting, the practice of running an engine for a quarter of an hour or 20 minutes before opening up to full throttle being considered uneconomical. Evidence seemed to show that the practice was largely a matter of habit, and that the danger of "opening up" with the engine cold related chiefly to the oil gauges, an objection which could be overcome with suitable instrument devices.

Machines with a single central engine are given preference over those with power units installed in the wings, and the Committee recommends a twin-engined aeroplane with two central propellers, one in front of the other. Power installation testing with a machine in flight is also suggested.

The Committee urges that undercarriages should be readily detachable from the aeroplane, as under the present practice of building the undercarriage directly on to the aeroplane an accident to the former has meant an accident also to the latter.

HOW FAST DO BIRDS FLY

Under the above caption the Scientific American goes into an enlightening discussion on the speed attained by birds, and states that some of the feathered tribe, which are incapable even at full stretch of doing more than 40 to 50 miles an hour have been credited with 100 and over, and that the fact of the matter is that nothing is more difficult than to judge the speed of any object through the air than by mere human observation. Foreshortening due to perspective alone renders it impossible to tell just when a moving object passes above some fixed point on the ground, and almost invariably the estimated speed is far beyond the actual. At the present time the highest well-authenticated speed is that of homing pigeons, some of which have reached a speed of 60 miles an hour over comparatively short distances. The article goes on to say that Colonel A. Meinertzhagen, a noted ornithologist in Great Britain, who has recently published some data on this subject, states that during his anti-aircraft duties in the course of the war he trained his men in instrumental work by making them take observations of the flight of birds. These he collected and then confirmed their results by instrumental work himself. According to his calculations, the speed of birds is far below what is popularly believed to be, varying from 20 to 40 miles for the smaller passerines to from 40 to 50 miles an hour in the case of waders. Those speeds represent steady flight; but when a bird is frightened by an enemy, or when it is pouncing upon its prey, it can accelerate greatly for a limited time. He estimates that for a short distance the swift can reach a speed of 100 miles an hour.

Asserting that the airplane has greatly surpassed the swiftness of birds both in its power of sustained speed and in its maximum speed, the article states that where the birds still greatly surpass the human flying machines is in the matter of taking off and alighting. The seabirds, and all birds in fact, by changing the angle of incidence of their wings, are able to reduce their landing speed at a rate which the airplane and the seaplane cannot at present approach.

THE PLEASURE OF FLYING

"Icarus" in the London Sunday Express, says that the best recreation in the world both for body and mind is never to repeat your pleasures. In an aeroplane you needn't ever touch the same place twice. From Rome to Babylon, from Khartum to Timbuctoo, from Rapallo to Athens, you will flit as easily as in the old days you went to Bournemouth and Torquay. As you glide along imperceptibly at 130 miles an hour 10,000 feet above them you will laugh at the puny efforts of the landsman hurling himself round Brooklands or the destroyer ploughing through the sea at what is mere walking pace compared with yours. And if you tire of the uneventful highway of the air you can always climb towards the

sun or swoop down to scrape the tops of trees and houses. If you really want excitement there is no limit to the "stunting" you can indulge in, rolls and falling leaves, and things without a name, that leave your stomach cold and empty and your brow wet with perspiration. And if you do come a "cropper" while indulging your flights of fancy you have the consolation of knowing that it's your own fault and that you will be the only one to suffer. When you have accidents on the ground, you always feel that it was someone else's fault, and it is the unoffending who get hurt. That is one of the great advantages of flying; you can use your aeroplane as a bath-chair or a runaway horse; you can indulge your taste for danger or repress it. You are complete master of your fate.....and there are no policemen to stay you in your mad career.

"Icarus" evidently is of the belief that commercial aviation will make tremendous strides in the course of a year, for in starting off his "dissertation" he says that the only thing that has prevented us from deserting the motor car for the airplane is the expense; that civil aviation is in a bad way; and that until airplanes become cheaper they will never be popular; and in winding up he suggests that you'd better start at once; next year the air will be black with airplanes, and it is the early aviator who gets the fattest slice of space.

AND I LEARNED ABOUT FLYING FROM THAT

The great majority of men in this small world of ours can quite easily and without any great effort learn to ride a bicycle, steer a boat, manipulate the controls of a steam engine, or become a "driving fool" with an automobile. They may, and frequently do, break a leg or an arm, and often there are times when it takes from a day to a year in a hospital to "patch up" the more unlucky ones. But eventually these unfortunate novices, after recovering from their accidents and having learned a lesson from their mishaps, will try again and again until finally they become experts.

But do all men who endeavor to learn the art of "flying" become experts? No; because lucky is the man who can walk away from an airplane accident and say: "and I learned about flying from that". Usually it leaves both the man and plane such a wreck that they cannot try again.

The expert flyers of today become experts from the lesson taught them by the "would be experts of yesterday", and many tales and yarns such as the following he can relate, adding after each, "and I learned about flying from that":

"It was just about dark, when the few inhabitants of Maple Hill, Miss., heard what seemed to them a terrible commotion in the clouds. It was an unfamiliar and terrorizing noise, for they had never seen and perhaps read very little of airplanes, living as they did twenty miles from a railroad. Presently, out of the low clouds appeared three great dark objects which flew in no general direction, turning first to the right and then to the left, resembling three geese that had strayed from their flock. Bluish streaks of flame issued from the noses of the objects as their vital organs were running on a nearly exhausted supply of energy. Lower and lower they came and finally disappeared over the edge of a wooded section of land, about a half mile from the town.

Maple Hill that was standing still, awe stricken, a few seconds previous, was now alive with excitement. In less than two minutes every Ford in town was going in the same direction, for the whole town was bent on seeing its first airplane. Arriving at a field on the edge of the town they viewed again an awful sight. There stood erect and undamaged one Army JN4D airplane, but two others lay in a broken and twisted mass of wreckage. Two pilots, one with his arm broken, were frantically trying to extricate from the wreck of one of the planes the body of the third pilot, whose life was snuffed out when he fell.

That night one of the pilots called his Commanding Officer over long distance, and after having first told him of Jones' death, gave him the following account of the accidents: "We hopped off from Hunter's Field at four-thirty P.M. I was leading, as Jones and Thompson were without maps. I did not have a compass, but was intending to follow the railroad to Greenville and from there we all knew the route to Jackson Field. We ran into a rainstorm when over Mosen, Ala., but as we were then nearer Jackson Field than Hunter's Field, I decided to climb above the rainstorm which was quite low. The storm covered more territory than I expected and it took twenty minutes of flying before we were able to get away from it.

When we passed over the rain clouds and the ground again was visible, I consulted my map to determine our location, but was unable to distinguish any familiar landmarks. Wondering whether Jones or Thompson was still with me, and thinking that they might possibly know in which direction the railroad lay, I turned around in the cock-pit, waved my map and pointed to the ground in an endeavor to make them understand, when the wind caught in the folds of my map and tore it from my grip. I was then without either map or compass. With the sun as a guide, but which was getting quite low, I decided to fly a course that I believed would take us to Jackson Field, or some point near it. We flew and flew until we were forced to attempt a landing here, as our gas supply was about exhausted.

I picked out what seemed from the air a fair field and landed toward the sun as I knew the general direction of the wind was from the west. The field upon landing developed into a cotton field which had a deep ditch running through its center, but I was lucky enough to avoid it. Jones attempted to land after I had gotten down without any great difficulty, but he came in a direction opposite to me and with the wind. His motor was missing badly. He came down in a steep dive at the edge of the field, and with the wind with him and on account of his excess speed he overshot the small field. Trusting his motor, although it was missing, he gave it the "gun" to go around again. Just as he was about to clear three tall pine trees at the edge of the field, the motor quit entirely, and he crashed into the top of the tallest one. Before I got to his wreck, Thompson came down against the wind and would have landed safely but for the ditch. He hit the ditch just as his wheels touched the ground and wiped off the lower wings and landing gear, breaking his left arm. Thompson, who was unhurt except for his broken arm, pulled himself from the wreck and we both ran to help Jones, but he was no doubt killed instantly when he crashed.

Several days later at Jackson Field, all the officers and cadets stationed there were called to the assembly hall to listen to a lengthy lecture on the dangers encountered when a pilot puts too much trust in his motor, flying without maps and compasses, landing after dark, flying over strange country when the gas supply is about exhausted, and landing with the wind."

SECRETARY OF WAR AND GENERAL PERSHING VISIT LANGLEY FIELD

Secretary of War, John W. Weeks, and General Pershing, Chief of Staff, recently made the first general inspection of Langley Field since taking up their duties in the War Department.

After making an inspection of the field, which included the hundreds of planes, their crews and equipment, the party was given an exhibition of the planes in flight; pursuit, observation and combat formations being flown. A special demonstration of the efficiency of the new T.M. Scout plane was given by Lieut. Carl Cover, Engineer Officer of Langley Field. To an observer on the ground this little bird seems to climb a thousand feet as straight as an elevator and, apparently, with the same ease.

The distinguished visitors expressed themselves as greatly pleased with the work of Langley Field, much interest being shown in the enviable record of the aviators in the bombing project of the Provisional Air Brigade.-Langley Field Times.

AIRPLANE GORED BY A BULL

We have heard instances of a bull goring animals, human and otherwise, but here appears to be the first case on record of a bull goring an airplane. It seems that, much like human beings, animals sometimes resent with the utmost violence the intrusion of others in their love affairs, and this particular tale deals with a belligerent bull who, "uncowed" by the likes of any such thing as an airplane, proceeded to obtain sweet revenge on the plane as a balm to his ruffled feelings.

Recently, Lieut. Fred C. Nelson, who was on a cross-country trip to Missouri, had a weird experience with the denizens of a cow pasture wherein he happened to land. The pilot had quite a strenuous time of it attempting to "shoo" a huge bull and his harem from the field before he could land. Upon finally evicting the bovine colony and making a landing, he considered the matter closed

and repaired to the nearby town where elusive romance and festivity awaited him. A sad surprise, however, was in store for said pilot when he returned to the cow pasture to hop in his plane and return home. It appears that the bull, instead of acting as a perfectly good, law abiding citizen, and telling his troubles to the Judge, decided to take matters into his own hands and took it upon himself to wreak vengeance on the ship that had caused him so much woe and distress. The pilot found, to his great chagrin, that the plane was damaged to such an extent that considerable repairs had to be made thereon before it was in fit condition to fly again. The tail skid had been ripped off some way, some of the horizontal stabilizer brace wires had been broken, and numerous holes had been poked through several places on the empennage by the bull's horns.

All of this goes to show, if there is to be a moral to this story, that we must learn to respect even the feelings of dumb animals.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England

The "Z.R.2" ("R.38"), the largest airship in the world, took the air for the first time on the night of June 23rd. Built at the Royal Airship Works, Cardington, Bedford, and sold to the American Navy, she has, during the past fortnight satisfactorily undergone her airborne and engine trials in the construction shed. The trial was her first flight test, and was entirely satisfactory. Altogether 48 persons, including the crew, were carried. After further trials at Cardington and Howden to test thoroughly the reliability and general airworthiness of the airship, she will be handed over to the American crew, who will carry out such flights as they consider necessary to accustom themselves to the handling of the ship, before her departure on the trans-Atlantic flight to the base, which has been constructed recently at Lakehurst, N.J.

A new air route has been opened up across the desert between Palestine and Mesopotamia, it is announced by the British Air Ministry, and notification has been received of the arrival at Bagdad of three aeroplanes of the Royal Air Force which have flown over this route. These machines formed part of a reconnaissance party that set out from Palestine on June 1, with the object of establishing a more direct line of connection between the existing airdromes at Ramleh in Palestine, and Bagdad in Mesopotamia. The length of the new route is about 590 miles.

A Franco-Swiss Company, it is stated, will shortly inaugurate a regular express air service from London to Constantinople, by the way of Paris, Lausanne, Milan, Rome, and Salonika, about 1,560 miles. Goliath Farman machines, able to carry 12 passengers, will likely be used. Although it is expected that concessions for carrying mails will be granted by the French and Swiss Governments, the object of the venture is primarily to link up English and Italian ports and so to enable business men traveling to the East to remain several days longer in London or Paris and catch their steamers at one of the Italian ports.

France.

Georges Kirsch created a new altitude record on June 14th last, when, flying a 300 h.p. Nieuport (Hispano), he reached an altitude of 32,153 feet, thus beating the previous record held by Casale of 31,216 feet.

A famous war flight is recalled in the death announced from Paris of Captain Anselme Marchal as the result of a motoring accident. Captain Marchal flew over Berlin in June, 1916, and dropped pamphlets over the German capital. He attempted on that occasion to continue his long flight from Nancy across Germany to the Russian lines, but was obliged to land in Germany and was taken prisoner. Subsequently he escaped with the airman Garros.

Holland.

Amsterdam is becoming quite a busy airport. During the last fortnight for which figures are available, 270 passengers passed in and out of the Schipol aerodrome. There are now services of monoplanes running from Amsterdam to London and Hamburg, while to Brussels and Paris there is a double service, one being run with "Goliaths" and the other with Spads and Breguets.

Argentine.

Aviation activity in the Argentine is increasing steadily, both in the capital and in the provinces. This country has received recently numerous shipments of flying machines, which will be used to develop school flying and in the organization of regular flights between the principal cities in the interior. It is estimated that the number of planes bought since March, 1921, amounts to over 150. This number is demonstrative of the progress of aviation in Argentina, and this Republic is one of the leading countries of South America in aerial activities.

SQUADRON NEWS

Kindley Field, Fort Mills, P. I., May 28.

The Fort Mills Baseball team under the management of Captain Ervin traveled to Camp Stotsenburg this week end to play a series of games with the "Big Boys" of the 9th Cavalry, whose game fight with the 4th Philippine Infantry last season put them on the baseball map.

Two additional H.S.2L Flying Boats are being assembled at this station. Considerable difficulty is being experienced by the riggers for the reason that these planes have been lying crated under all sorts of weather conditions for some time and many parts have been ruined, making it necessary to select parts from other planes to fit the needs of those that are being set up and causing a good deal of abnormal readjustment.

Due to the rough sea on the hangar side of the island, quite consistent with the season, there has been very little flying done. A plane returning from Manila was obliged to land on the leeward side of the island, but due to the precipitous nature of the shores the plane was anchored to a buoy. Several flights have been made from there, but it is necessary to row pilots and passengers to and from the plane, and consequently a lot of time is spent taxiing the plane around to meet the small boat and also in caring properly for the plane.

Lieut. Norman R. Wood has been appointed Q.M., Supply and V.T.S. Officer at Kindley Field during the absence of Captain Cole in China.

Clark Field, Pampanga, P.I., May 28.

An inspection of Clark Field was made on May 28th by the Commanding General of Camp Stotsenburg, accompanied by his staff. Seven ships were on the line at 7:30 A.M., all fully equipped with Marlin and Lewis guns and radio. After the General had looked over the ships, the flight took off and remained in the air about 30 minutes. They crossed and recrossed the field and did reversements and turns, much to the delight of the large crowd assembled for the event. After the formation the General inspected the hangars, shops, garage and radio station.

Hqs. Detachment, 4th Group (Obs.) Paranaque Beach, Manila, P.I. May 28.

Of the Air Service officers who arrived June 2nd on the Transport THOMAS, Captain Lloyd N. Keesling and 1st Lieut. Willis R. Taylor have been assigned to Clark Field and Captain I. H. Edwards and 1st Lieutenants Raphael Baez, Cyrus Bettis and Neal Creighton to Kindley Field.

An H.S.2.L. with Lieut. Richter, pilot, and Lieut. Gray, C.O. 27th Balloon Company and Sgt. Diamond, 2d Squadron, came over from Corregidor on Wednesday afternoon. They added Lieut. Patrick to their passenger list on their return trip Thursday morning.

Extension of foreign service tour in the Islands is apparently not popular with the commissioned personnel of the Air Service, as up to the present time none have applied for an extension. Twenty per cent of the enlisted personnel, however, have asked for one year's extension.

24th Balloon Company, Fort Baker, Calif., June 25.

The entire company was called out last Monday and Tuesday to fight grass fires which raged on with the high winds. The fire made good headway and covered about three miles before it was gotten under control. No serious damage resulted.

A club for the enlisted personnel and company officers, named the 24th Balloon Company Club, was recently organized.

The class in Balloon Fabric work and Rigging is proving very successful, and all men are taking considerable interest in it.

The bowling team won its fifth game of the season on Friday.

Due to grass fires and weather conditions, the company did not fly during the past week.

Flight "B", 91st Squadron, Camp Lewis, Wash., July 9.

That the people of the Olympic Peninsula are very enthusiastic for the success of the Forest Patrol and appreciate the efforts made to protect their interests was made evident by the royal reception given the pilots of this Detachment at the Fourth of July Celebration held at Humptulips, Grays Harbor County. Entertainment of every description, including an elk barbecue, was in order, and at the conclusion of the day's sport each pilot was presented with an aviation helmet, neatly and gorgeously covered with the hides of wild cats. The hides used were donated by the people of Humptulips.

Ross Field, Arcadia, Calif., July 8, 1921.

After a stay of ten days at Martin's Camp near the top of Mount Wilson, Captain Raymond E. O'Neill and Captain Harold E. Weeks, with the student officers comprising Sections 22 and 23, came back to the post. During the entire time on the mountain, the visibility was exceptionally good, and a great deal was learned about observation and orientation. At the completion of the ground course, all the students will be ready to go into the air and begin actual observation of active hostile batteries and artillery fire.

On Wednesday evening, July 6th, a large party of officers with their families and friends motored to Fish Canyon and enjoyed dinner and dancing in the new pavilion recently opened.

The Officers' Club gave an informal dance on July 8th at the Santa Anita Club. On account of warm weather, all dances during the months of July, August and September will be informal.

While flying in Balloon No. 1 on July 1st, Major Roy M. Jones, pilot, and Master Sergeant John H. Hoepfel, passenger, discovered a fire in a home just outside the post. Major Jones telephoned the garage at once upon sighting the fire and instructed 1st Lieut. Joseph P. Bailey to call out the chemical truck and send it over to the fire. Lieut. Bailey made a record run to the fire and was able to give valuable assistance in extinguishing the flames. Had it not been for the timely arrival of the chemical truck the house would have been a total ruin.

Three student officers have qualified as free balloon pilots during the past week, - 1st Lieutenants Asa J. Etheridge, Alfred I. Puryear and William J. Flood.

Student officers of Section 23 began taking solo free balloon flights on July 8th. 1st Lieut. Asa J. Etheridge was the first officer to solo. He left Ross Field at 10:30 A.M. and landed at Azusa, twelve miles from the post, at 11:52 A.M. On July 7th, Captain Hawthorne C. Gray left in a 35,000 cubic foot balloon at 3:00 A.M. and finally landed at 11:30 A.M., thirty miles east of the post after making four flights. On July 8th Captain Raymond E. O'Neill left in a 35,000 cubic foot balloon and landed near Santa Monica.

On June 15th a baby girl, Mary Buttler Miller, was born to Captain and Mrs. Lester T. Miller. Both mother and baby are doing well.

Carlstrom Field, Arcadia, Fla., July 7.

The 4th of July Celebration was a grand success and "a good time was had by all" with the exception of Lieut. Gottschalk, who went up in a Nieuport to thrill the crowd and, while trying to avoid a collision with a T.M., came down in a spin in front of the crowd, losing control of his machine after making a wild turn. He was bruised about the face and his leg and upper jaw were broken. The parachute jumpers created the most interest. In the afternoon the baseball team, after a desperate struggle, defeated Wachulla, driving in the winning run in the 9th inning.

While soloing in a JN6-H, Lieut. Tsiang Kwie of China, a student officer at this station, made a bad turn over the hangars and fell on the main road near hangar #3. Lieut. Kwie scrambled rapidly out of the plane as it ignited, and crawled into the ditch by the road to cool his blisters. Apparently he was not seriously injured.

Lieut. and Mrs. Howard Trefery are the proud parents of a fine young aviator. Both mother and child are doing well.

Carlstrom Field, Arcadia, Fla., July 7, Cont'd.

Lieuts. Tinsley and Packard are now evidently convinced that it is safer to pilot an airplane than a ground "flivver". While motoring to Daytona to spend the 4th of July, they were the victims of an automobile accident, their steering gear becoming loose and being unable to hold the car to the road they crashed into a tree. Lieut. Tinsley suffered many bruises and a wrenched back, while Lieut. Packard sustained a compound fracture of the leg above the knee. According to last reports they are resting easily, and will recover. Both of these officers were students at the field and had just completed their course and were waiting orders to their new station.

The enlisted personnel at this field was augmented by the arrival of 60 men from the Montgomery Repair Depot and nine men from Chanute Field.

Detachment 91st Squadron, Medford, Oregon, July 2.

The detachment was entertained by the ladies of the Baptist Church of Medford on Monday evening at the home of Mrs. Ralph Penoyar. A musical program, games, a speech of welcome by the Mayor and refreshments constituted the evening's entertainment.

Continued cloudy weather in the mountains prevented most patrols this week, as well as removing the fire hazard.

Fairfield Air Intermediate Depot, Fairfield, O., July 9.

Lieut. G. E. Ballard just returned from a flight to Langley Field in a Martin Bomber. He experienced bad weather and owing to the fog flew by compass most of the time.

Major Ira A. Longanecker and 1st Lieut. Charles McK. Robinson and their families were visitors at this station during the week end. While at this station these officers took the '609 examination. They were the guests of Major E. A. Reinburg and Lieut. Charles M. Leonard.

A Breguet Bombing Plane has been given its initial test.

The Radio Department has turned out a Radio Compass and Direction Finder, and a complete transmitting and receiving set for a Breguet. It has also equipped four DH-4B's with transmitting and receiving sets. Production work has been started on 1,000 special radio helmets, and 300 remodeled SCR-73 generators.

A.S. Observation School, Post Field, Fort Sill, Okla. July 8.

Mrs. Wm. E. Lynd entertained in honor of Mrs. Follett Bradley on Wednesday afternoon with a bridge party. Nearly all the ladies of the post were present. Refreshments were served after the games and prizes given to the lady at each table holding the highest score. A prize was also given to the guest of honor, Mrs. Bradley.

Much consternation was caused on the field last week when Flight Surgeon, Captain Milleau, announced that the ladies would have to be inoculated. Scenes in revolutionary Mexico were mild in comparison to some enacted here by the ladies in remonstrance against this edict. After due persuasion, however, some of the braver ones were induced to take the shot in the arm, following which no more trouble was experienced with the remainder, all being willing to follow.

Three JN6-D airplanes were piloted up from Kelly Field to be used in tow target work in connection with the Gunnery course. The three officers who piloted these planes claim it is quite a novel experience flying cross country with such a slow type of plane after having become accustomed to the D.H.'s. Four landings for gas were made on the trip.

Class room work in Lewis Machine guns was started in the school this week. The preliminary work in this subject consists of stripping and assembling the gun and learning the nomenclature of the different parts. Flying of photographic and infantry and cavalry contact missions was initiated this week with good results. In flying the infantry and cavalry contact problems, a panel detail of some 20 men in size is used. This detail simulates the advance of a division or regiment, as the case may be, putting out the different panels at the different cross-roads or other points along the advance. Panels are picked up by the infantry airplane and the coordinates of its location are wirelessly to Division Headquarters, together with the message interpreted from the panel.

A. S. Observation School, Post Field, Fort Sill, Okla. July 8., Cont'd.

The arrival of the 300 enlisted men from Rockwell Field is very noticeable, and with these additional men to service them it is possible to keep more ships in condition.

Mather Field, Sacramento, Calif., July 9.

Early on the morning of June 27th, telegraphic report of the deaths at Visalia, Calif., of Flying Cadets Harold E. Page and Joseph Weatherby was received at Mather Field. The fatal accident occurred immediately after they took off at Visalia, and the plane caught fire upon striking the ground. Cadet Page was a former member of the 9th Squadron before taking training at March Field. He and Cadet Weatherby had reported at this station for forest patrol duty only about two weeks previous to their deaths. Because of the meager information possible to receive by wire, Lieut. F. D. Hackett, Accident Investigation Officer, and Lieut. W. S. Sullivan with an enlisted mechanic were immediately dispatched by plane to Visalia, accompanied by Captain T. H. Miller, surgeon, to obtain all details possible in connection with the crash. Staff Sergeant Hemmerl and Sergeant West were detailed to escort the bodies of Cadets Weatherby and Page to their respective homes in Fort Davis, Texas, and Union City, Mich. Very beautiful and appropriate floral pieces were purchased by members of the enlisted personnel of the 9th Squadron and commissioned personnel of the post, endeavoring in this way to give tangible evidence of their respect and love for these two splendid young men.

Civilian Aviator Frank Clark arrived at Mather Field at 8:00 P.M., July 4th, with a precious cargo - the Dempsey-Carpentier fight picture films. The pilot, flying a Fokker plane, was en route from Chicago to Los Angeles. He remained over night and left in the morning for Venice, Calif.

Captain R. L. Walsh, A.S., left early Saturday morning to spend the week end with his family at DeJ Monte.

Captain A. W. Smith, M.C., as pilot, flew Mr. Marx of the Forestry Service to San Francisco on June 29th for a conference in connection with forest patrol work, returning to the field the following day.

Captain W. A. Boyce, M.C., who has been on temporary duty at this station, was transferred on June 30th to Visalia for duty as Flight Surgeon of the patrol detachment there.

Flying Cadets Dales and Means arrived on July 2nd from March Field for duty on forest patrol.

Pursuant to instructions of The Adjutant General of the Army directing the transfer of a detachment of enlisted men to Ellington Field, 114 men from the A.S. Supply Detachment, 19 from the 9th Squadron and 3 men from detached service at Crissy Field left Mather on the morning of the 30th, with Lieut. Wm. S. Sullivan, A.S., in charge, and Capt. A. W. Smith, M.C., accompanying the troops as sanitary officer.

Since starting forest fire patrol on June 23rd, 27 patrols have been flown from this station. Approximately 608,735 square miles of area was covered, and 40 fires were reported. The flying time was about 128 hours.

Hqrs, 91st Squadron (Observation) Eugene, Oregon, July 8.

The American Legion held their State Convention at Eugene during the week of July 2nd. A number of reserve officers visited the field and were pleased with its fine condition.

Sergeant Helpman and Observer Bain made a sensational forced landing southwest of Medford on July 6th while on forest patrol. The motor conked when the throttle became disconnected and closed, forcing them to land in a burnt out area. The ship was a total wreck but the two passengers escaped without a scratch, their escape being nothing short of miraculous.

On June 25th Chief Bahe, the Indian twirler of the 91st Squadron Baseball team, pitched regular league ball, shutting out the Goshen nine in a ten-inning game by the score of 2 to 0.

On July 6th the Squadron team defeated the Noti Bearcats in an exciting 10-inning struggle by the score of 4 to 3.

Hqrs. 91st Squadron (Observation) Eugene, Cont'd.

The big deForrest Radio Set was up and in good working order on the 2nd, and all hands received the fight news by wireless. Being four hours ahead of New Jersey, news of Carpentier's downfall was received at the dinner table.

Crissy Field, Presidio of San Francisco, California, July 11, 1921.

The new buildings at Crissy Field have been completed and turned over to the Air Service. Major H. H. Arnold, 9th Corps Area Air Officer, with his staff have moved from the Santa Fe Building, San Francisco, Calif., to the new Headquarters building at this field and are occupying the second floor, the first floor being taken over by the field. Major Arnold has assumed command of the new post. The new buildings are all modern concrete structures, with electric lighting, and gas cooking facilities for the officers, noncommissioned officers and enlisted men. They are so situated that they overlook the waterfront, and the offices are very desirable, being light and airy with lots of room. The field itself is in excellent condition, and is being enlarged as rapidly as the old cantonment buildings are being torn down. The ground surrounding the new buildings is being prepared for sodding, and as soon as this is completed, shrubs and flowers will be planted.

Cooperation with the Coast Defense has ceased for the time being, and the next Artillery practice will take place on or about August 1, 1921, when it is contemplated carrying out further experiments in night firing with the cooperation of the planes. For this work, 200 mark I 850,000 candle-power flares will be used. These flares are dropped on the target at intervals of five minutes. At the last practice of this kind the success of night artillery firing by this method was assured.

The liaison with the R.O.T.C. will start July 11, 1921, and will be carried on until August 5, 1921. In connection with this, the 24th Balloon Company on duty at Fort Barry, has moved to Fort Scott on temporary duty, and is occupying quarters at Crissy Field.

First Lieutenant H. A. Halverson, Air Service, has just returned from a tour of inspection of the forest patrol bases, covering northern California and southern Oregon. He reports everything in excellent condition.

In connection with the recent order allowing discharges to enlisted men desiring same, less than ten per cent of the enlisted personnel applied for discharge.

Balloon Company Number 31, Camp Knox, Kentucky, July 9, 1921.

On Friday and Saturday the whole Company was very busy painting and polishing all its equipment for the tactical inspection and demonstration Tuesday afternoon.

On that afternoon the entire Company was lined up for inspection before General Lassiter and his staff. On completion of the inspection, "Balloon Call" was sounded and the company rushed the Balloon out of the hangar and into the Air. Lieutenant Farnum took the General up and spent about a half hour looking over the camp and range, while the company demonstrated machine gun drill and maneuvering drill on the ground for the spectators. During this flight a parachute was dropped from the Balloon. After the balloon was put away and the area and hangar inspected, all technical equipment was layed out for inspection in the hangar. General Lassiter expressed himself as very well pleased with the appearance of the men and of the equipment.

The company is now busy preparing for the Barbacue and Dance to be held on Saturday night. The beef and shoat are both sizzling and cooking deliciously.

Air Service R.O.T.C., Fort Sill, Oklahoma, July 19.

There seems to be a tendency among some personnel in the Army to paint Fort Sill, Oklahoma, in colors of a decidedly sombre hue and to shake their heads sadly and express their profound sympathy whenever they are confronted by a comrade who is under orders to go to that station for a tour of duty. The following interesting diary, taken from a college paper written by Mr. W. L. Vaughan, an Air Service R.O.T.C. student at Fort Sill, tends to show that that post is not as black as it is wont to be painted, also that the R.O.T.C. students are very enthusiastic about the Air Service and will undoubtedly do more than their share to boost the Air Service R.O.T.C. along:

"After a tiresome ride on the Rock Island Limited headed in the general direction of Oklahoma City, we took the Frisco south, and upon arrival at Fort Sill we were met by Captain Wright, officer in charge of the Air Service Unit at Boston Tech.

Instead of finding a sand-stormy, cactus-covered, alkali country, our tired eyes were treated with a vision of a beautifully arranged and well kept Army post. We whizzed past Medicine Creek, a crystal clear mountain stream rising in the Wichita Mountains. Then after speeding along a beautiful concrete road, we reached Post Field. By then we were waxing enthusiastic; the first sight of the field made us realize that we had found an oasis in what we expected to be a desert.

Following a good "chow" which we were quite ready for, we drew our squeaky shoes and "Oversize" uniforms. Later we were issued helmets, goggles and other flying equipment.

We rested until Monday, this is, the older heads did. The rest of us who were foolish tried volley-ball, baseball, tennis and swimming, until we were blistered all over except where our B.V.D.'s or bathing suits offered protection. During the week the evening air was burdened with groans.

On Monday we were given our initial rides in the DH4B's, "Jass Riders" as they were called. For some this was the first time aloft, but no one returned from the trips without added enthusiasm for the work promised for the future.

Our day is divided into two parts. In the forenoon we fly on observation missions, attend classes in Gunnery, photography, Artillery Liaison, study and practice Radio and observation on the miniature range. Besides this, we have had some excellent trap shooting, horseback riding and topography. In the afternoons we have time to service the ships of the four Flights composing our squadron, play tennis, baseball, volley-ball and swim. After supper and until taps we are free. Generally most of us take in the movies at Fort Sill or Lawton.

So far we have had three reconnaissance missions, one over Lawton, one cross country and the third over a five line system of trenches. In the future we will take photographs, practice with the machine guns, observe Artillery fire and take up Infantry Liaison.

All of our officers are splendid men who know the flying game from hangar to twenty thousand feet. They show us every consideration.

The squadron consists of 12 men from Boston Tech, 8 from Illinois, 5 from Georgia Tech, 4 from Washington State, and 1 from Texas A & M. The thirty fellows comprising the unit are most congenial and pleasant, and are keenly interested in the game.

All of us are boosters for the R.O.T.C. especially the Air Service Unit."

France Field, Cristobal, Canal Zone, June 25.

The second of the monthly smokers held by the enlisted men's club of the post took place Monday evening at the Service Club, and was attended by practically every officer and enlisted man on the field. The speakers included Major Walsh, commanding officer, who explained the changes and promotions in the enlisted personnel accompanying the peace-time reorganization, and Master Sergt. Joe Grant, who spoke on the workings and plans of the Service Club. Following the talks, several vaudeville acts by post talent, wrestling matches, boxing, and songs made the evening pass enjoyably. Refreshments were served at the close of the program.

The discrepancies between the altimeters of the different ships in commission at the field led to the testing of the instruments the past week to locate the trouble. A dozen meters were mounted on a panel and checked at varying altitudes and of that number but two were correct. An examination of the mechanism showed that the tiny chains controlling the indicating needles had badly rusted in this climate and their failure to operate beyond two or three hundred feet explained the variances.

A number of changes now being instituted in the post Service Club promise to make the clubhouse as comfortable as any on the zone. With the addition of a set of wicker furniture, a cabinet victrola, chintz draperies, an attractive floor lamp for the reading tables, and the re-arrangement of the club house interior, the place will be greatly improved. A large addition to house the post exchange and a new lunch room are being rapidly completed, and within a month the canteen will be in its new location, a roomy store with a broad veranda on three sides.

France Field, Cristobal, Canal Zone, June 25, Cont'd.

Two five-plane camera obscura formations went over the targets on Thursday and made an excellent score of 33 out of a possible 42. Steady practice over the camera obscura has continued now for over a month and the scores of the six teams engaged in the training are bringing their averages to a high mark.

Three DeH4-B planes under the leadership of Lieut. R. C. W. Blessley, officer in charge of flying, made a cross-country flight to Chorrera from France Field on Monday. The other two ships were piloted by Lieuts. A. L. Foster and J. D. Barker with Capt. O. H. Quinn as photographer. The formation followed the canal across Gatun Lake, whereupon a course was taken to the right over the jungles to the landing field, a couple of miles west of Chorrera. The field at this place is a long narrow strip through a pasture, and is quite smooth and hard.

Within a few minutes from the time the planes landed the natives began to appear, coming from all directions. Some were on foot, while others came riding on the small ponies so common in this country. The belles of Chorrera were of this latter class and were all riding sideways. The children wore very few clothes. In fact most of the younger boys looked as if they had hurriedly slipped on a pair of trousers or a shirt especially for the occasion. It was seldom that one boy possessed both of these articles.

Lieut. Barker took off first, in order that Capt. Quinn might get some pictures of the field and the other planes followed shortly afterwards. The return route was over approximately the same route. Some heavy clouds had formed during the stop at Chorrera and it was necessary to fly much higher to avoid them. There are practically no landing places along this route, and in case of a forced landing it would be necessary to land in the canal or in the jungles, the former being the most desirable.

With the sailing of the transport "Cantigny" on Tuesday, 1st Lieuts. Kenneth Garrett and S. M. Connell left for furloughs to be spent at their respective homes in the States. A schedule of the transport sailings for the remainder of the calendar year has changed the trips from one a month to one every six weeks.

Langley Field, Va., July 23.

General Mitchell was host to a large party at the supper dance given at the Officers Club Thursday evening. The dance coming at the close of the highly successful bombing program found everyone in the mood for a merry party. Three ladies from General Mitchell's party, Mrs. Hanley, Mrs. Johnson, and Miss Campbell, added zest to the evening with an ingenious stunt when they appeared in costumes representing bombs and sang an original ditty which explained the fate of the "Ostfriesland" and other targets. Mrs. Davenport Johnson, who originated the idea, designed the costumes.

Lieut. and Mrs. C. A. Cover entertained at dinner complimentary to his sister, Miss Cover, of Harrisburg, Pa. Covers were laid for twelve, and the table was daintily decorated in orange and white. In honor of her guest, Mrs. Cover also entertained a number of ladies of the post at tea on Friday afternoon.

Chaplain and Mrs. Boyd have as their house guests the Rev. A. E. Husted, the Misses Coulter, Grube and Orbell, all of Brownsville, Pa.

Mrs. A. E. Easterbrook is spending the week in Washington, the guest of friends.

Major and Mrs. Miller are occupying the quarters lately vacated by Captain Granger.

Captain and Mrs. E. J. House have as their guest Miss Campbell of Washington.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE AUGUST 13, 1921.

AIRPLANE BOMBING

The following article in the July-August issue of "Army Ordnance" by E. J. Loring, Member of the Army Ordnance Association, is of timely interest, following, as it does, the recent Bombing Maneuvers held at Langley Field, Va.

"Ten years ago, when airplane meets were first held in this country, one of the usual events on the program was a "bombing" exhibition in which "bombs" - oranges or paper bags filled with flour - were dropped overboard by hand from a few hundred feet altitude against a target outlined on the ground. Shortly before the Great War a prize offered by Michelin in France for best bombing was won by a former officer of our Army. In 1914 our Army made its first bombing tests at San Diego, and later dropped some bombs at the Mexican border. In the early days of the War, the offensive use of the airplane was in dropping small bombs, launched overboard by hand and smaller objects, such as steel darts, released in quantities and incendiary grenades. From these minor offensive weapons, bombing has grown in the past five years until today it has the most powerfully destructive unit weapon of any branch.

With the increase of size and power of the airplane and of the bombs, there have continually arisen new problems in stowing, slinging and releasing the bombs. Yet, through it all, there remains the fact that the object of all this development and of every bombing expedition is to register a destructive hit upon a desired target and except as affecting morale, all the time and expense of production and transportation of bombs and planes, of training of personnel, and the risks of the expedition, are wasted in proportion as the bombs fail to reach the target.

From the few hundred feet altitude of the early airplane flights the bombing level for land planes has been pushed higher and higher, so that at present the normal altitude for day bombing is around fifteen thousand feet, for night bombing about one-half of that, and naval bombing usually from one thousand to two thousand five hundred feet, running somewhat higher against strongly defended ships. The head of an ordinary pin held at arms' length covers a circle of 50 feet diameter, as seen from 15,000 feet, a circle which will enclose the ordinary farm house and which is about the size of the crater in soft soil from a 500-pound bomb, and thus represents about the area of full destructive effect which should touch the target. The bomber is taking his aim from a rolling airplane, while traveling toward such a target at a speed of from 60 to 150 miles per hour, traversing that limited area in from one-fifth to three-fifths of a second.

Still worse for accuracy if we think of the bomber as shooting at a moving target with a gun fixed vertically while he himself is fixed in space - and this is the way it looks to him - he cannot point his gun, but can only await the proper time ahead of the target for release. True, he can determine the actual direction of travel of the plane in relation to the ground, and if it is not correct he can communicate by signal with the pilot so that the actual direction - not the apparent direction, the axis of the plane - may be toward the target. But he has no direct control whatever of the direction for line and further, both for line and range, he must make constant reference to the vertical, since the bomb when released has only the forward motion of the plane to which is gradually added a vertical motion through the action of gravity, so that the path of the bomb in falling is a curve in a vertical plane through the path of the airplane at the point of release. Now the sense of vertical is nearly lost in an airplane; no pendulum or spirit level can give it, but will only indicate an apparent vertical, which departs from the true vertical on every turn, bump pitch or side slip of the

airplane. Whether on automobile, bicycle, ship or airplane, no course is ever held true and straight, but at best is a succession of curved paths on which an error of direction is accumulated until observable and then corrected. Every curved path means an error in the apparent vertical; for instance, if an airplane be traveling at 100 miles an hour and its path is curving slowly at a rate of one degree in $4\frac{1}{2}$ seconds, or 700 feet, which is a radius of about seven miles, the airplane taking a half hour to turn a full circle, centrifugal force will throw the apparent vertical one degree off from the true, giving an error of 260 feet on the ground from 15,000 feet. So far, there has been but one true vertical observed from an airplane, the reflection of the airplane itself in still water, as found by Major F. C. Brown, and used by the Aircraft Armament Division for its trajectory tests.

So the bomber, shooting from his swinging platform at the rapidly moving target, unable to direct his shot except in part by directing the plane itself through the pilot, cannot, by his own senses or by any ordinary apparatus, determine precisely the path of the bomb or the point it will reach, and is in effect shooting with a gun fixed vertically, which he can neither see nor sight.

With so serious a difficulty barring the way toward efficient bombing, our development at present is toward the use of the gyroscope to give a vertical reference line or to position the sighting apparatus, not because the gyroscope has done this, or can readily do it, for it has its own troubles, but because it offers the most, if not the only promise at present. These are almost invariably driven by a high speed electric motor incorporated in the gyroscope wheel, usually by three-phase alternating current from a special generator. Our present developments propose taking power from low voltage direct current from a storage battery, and include also improvements in the manner of holding the gyroscope to the vertical and of positioning the sighting apparatus without disturbing the gyroscope, which is very sensitive. Much has already been done, and a satisfactory stabilizer is a prospect of the very near future.

In addition, there is the sighting apparatus itself - the bomb sight - which has a multiplicity of functions. The fundamental purpose is to indicate at all times the point on the ground which would be hit by a bomb released at that instant, assuming that the apparatus is held in the true vertical. If the desired target lies to one side of the point indicated, the bomber is helpless; if it lies ahead, but off the course, the course of the plane can be changed; if it lies ahead on the actual path of the plane - usually at an angle with the axis of the plane due to wind - the bomber can only await that instant when it will arrive at the point indicated.

The bomb at the instant of release has only the forward horizontal motion of the airplane, which determines the direction of its path, and if there were no air resistance the bomb throughout its fall would be always directly under the airplane and the forward travel of the bomb in falling would be precisely the same as that of the plane for the same time. Due to the resistance of the air, the bomb usually lags both vertically and horizontally, so that it gradually falls behind the position of the airplane, this distance at the ground being called the "Trail".

The complete bomb sight is required to determine the speed and direction of the airplane and of the wind in relation to the ground; to show the proper apparent direction of flying to reach a given target; to communicate this direction to the pilot, and to indicate to the bomber, as stated above, the point on the ground which would be hit by a bomb released at that instant, taking account of ground speed, wind speed and direction, air speed, altitude and the bomb's characteristics and air resistance.

The bomb itself is an elongated body with vanes at the rear end to prevent the bomb from setting itself across its path with greater resistance. But the path is a curve, turning from a horizontal motion at the start to a direction nearly vertical at the ground, and the bomb is thus compelled to change its position in the air. This tends to introduce oscillations in the path, and in many cases the bomb lags behind the curvature of its path so that it "skids" or actually travels at times ahead of the vertical from the airplane, though greatly retarded vertically; or, on the other hand, the bomb may swing until it noses downward from the curve of its path, so that its forward velocity tends to push it down faster at the expense of its forward travel. These variations are a source

of great difficulty as they cannot be predicted, but fortunately these effects are much reduced with increase of size. Accurate bombing does not require that the bomb follow a certain path, but rather that a given type of bomb will always take the same path, so that its point of hit may be predicted. The study of the behavior of the bomb while in the air is full of great difficulties, and we have not yet determined all the conditions which are necessary to give it the greatest possible regularity in flight.

It is hoped that these remarks may make clear, that while it is a very simple matter to drop a bomb from an airplane, just as it is simple to pull the trigger of a gun, it is by no means so simple a matter to do so in a manner to register a hit upon the target. It requires good training and steady nerves, personnel of an entirely different nature from that of a chasse pilot, sighting apparatus of a very special nature, steady airplanes, and a very careful proportioning of the bombs for steady flight; for a given destructive effect, good bombing means conservation of planes, supplies and personnel."

PROPELLER TORN OFF IN FLIGHT ✓

Lieut. John A. Macready and his observer Roy Langham had a narrow escape from death or serious injury at McCook Field on July 22nd when, flying in a DH4 at an altitude of about 26,000 feet in order to make a test of the Moss Super-charger at this altitude, the propeller tore itself loose from the ship. Lieut. Macready succeeded in reducing the speed of the motor, which was exceptionally great because of the supercharger attachment, and made a landing without difficulty. The propeller, which was manufactured for high altitude speed flights and was made of a composition of canvas and bakelite, had been in use for some time and in the past had performed satisfactorily. An effort is being made to locate the propeller in order that a study may be made of it to ascertain the cause of its being torn from the plane.

THE BAT AS AN AID TO AVIATION ✓

The uninitiated sometimes wonder, when deliberating upon the strange works of nature, why certain birds, animals, insects, etc., were created, and ask what possible benefit mankind derives from them. Instead of a benefit they are oftentimes just the reverse. Take the bat, for instance. One can hardly justify the existence of this flying rodent unless, perhaps, for its insect-eating proclivities, and yet scientists have recently found it of considerable use in conducting some experiments, as a result of which the hazards of flying may be considerably reduced.

Experiments are continually being made with a view to eliminating accidents in airplane flights. Statistics show that a considerable number of airplane accidents were due to collisions in the air, due either to carelessness or because of the inability of the pilot to see the other plane which happened to be located at a blind angle. Recently experiments made in England with several bats furnished some very interesting results. Knowing that bats can avoid objects they cannot see, the experimenters blindfolded several bats and released them in a room which was crossed with many wires and divided from another room by a grid containing holes just large enough for the bat to fly through. These nocturnal mammal never touched the wires in their flight and were able to fly through the holes with ease.

The experiment revealed the bat's secret. He emits a note, often inaudible to man's ears. This sound bounces back from any barrier, conveying such accurate information to his sensitive ears that he can map out the space in front of him without any uncertainty. Aeronautical experts believe that the airplane may do the same thing. Instruments are being devised which are so sensitive that they will record visibly and before the airman's eyes the progressive increase of such sounds as the ground or some object that is approached. It is said that information would be supplied equally in the dark or in mist, and since sound travels faster than the fastest plane, the warning would come in plenty of time to avert a crash. The fact that important radio experiments are now being conducted in devising warning signal instruments indicates that some progress along this line is being made.

ROUND THE WORLD FLIGHT

"Preliminary arrangements for the proposed prize competition flight round the planet are still incomplete, but there is little doubt that in the near future such a flight will be attempted," writes Major C. C. Turner in the London DAILY TELEGRAPH. "Proposed by the Aero Club of America, it is being considered by the Federation Aeronautique Internationale, and the various national aero clubs are making suggestions. A list of eight entrants, including two British, was recently published in America; but apparently these are not yet definite engagements to take part. There is no doubt that the unsettled political and industrial situation has delayed matters, but in a very little while, it is hoped, the project will be brought to a head. And although success would not prove anything that was not demonstrated by the trans-Atlantic, the Cairo-Cape, the London-Australia, and the Rome-Tokio flights, it would possess an undeniable interest. It may be argued that a round-the-world flight would never enter the domain of regular commercial transport or, at this stage, throw new light on the possibilities of commercial air transport; that it would add nothing to our knowledge of the capabilities of the airplane, and would be simply a tour de force. On the other hand, it will be attempted and, sooner or later, accomplished; and it will involve consideration of many climatic and geographical problems.

According to present plans the flight must be in a zone lying between 60 deg. N. lat. and 15 deg. S. lat., and the period allotted for the journey will not be less than six months and may be more. Any type of aircraft may be used, and competitors may use different types at different stages. Very large sums of money have been mentioned in connection with the prizes, but a definite list has not yet been drawn up.

Flying across the Pacific will be the greatest difficulty. It has so far never been attempted; and when the distances and climatic conditions of this section are taken into account, and an attempt is made to fit in the season of the year when it might be possible with the seasons for the trans-Atlantic and London-India-China sections, it will be seen that any six months would be all too little, and that to accomplish the complete round in any one year would call for a nice adjustment of times, to say nothing of separate flights of unprecedented length. Taking the Pacific section, it is true that the shortest distance between the American and Asiatic continents is no more than twenty-five miles. This, of course, is in the extreme north, which the weather and the impossible terrain rule out. From Astoria, Oregon, to Yokohama the distance is 4,200 nautical miles, which is far beyond the capacity of any existing airplane in one flight, except with a hurricane of wind blowing in the same direction all the way across! This fact obviously suggests the airship as the likeliest craft first to achieve success, but no airship could undertake a circuit of the earth without provision of sheds or mooring masts at various points.

South of the direct line between Astoria and Yokohama lie a large number of islands, such as Honolulu, Jaluit, Guam, and many smaller islands between and north and south of them. Very few of these, however, provide suitable landing ground; and the small islands of the Pacific are, as a rule, only coral reefs, whilst those of volcanic origin are mountainous and rugged. At Guam, Manila, and Honolulu, there are suitable landing places.

Apart from the crossing in the extreme north, there is a route south of the Behring Sea where the greatest separate stage would be between Unalaska and Petropavlovsk, a distance of 1,260 miles, and thence to Yokohama, 1380 miles. It is, however, impracticable for climatic reasons. Taking the San Francisco-Honolulu-Jaluit-Guam-Manila line, the greatest distances are 2,090, 2,130, 1,490 and 1,380 nautical miles. On another route, from San Francisco to Honolulu, the Midway Islands, Wake, and Guam, the greatest distances are 2,090, 1,140, 1,050 and 1,200 nautical miles. The greatest separate distance hitherto covered by a land aeroplane was the 1,680 nautical miles by Alcock and Brown in the trans-Atlantic crossing; and, by a flying boat, the 1,200 miles by the N.C. 4 on a trans-Atlantic voyage. It will be seen, therefore, that to cross the Pacific would call for the accomplishment (and more than once) of a far greater distance than any yet made; and the best hitherto done were extremely lucky and very exceptional. The question of providing mid-ocean halts must therefore be raised, and in that event either amphibians or flying boats would have to be used in the Pacific section, if nowhere else.

For the trans-Atlantic flights westerly winds were necessary, and favorable conditions for the west to east crossing of the Atlantic occur chiefly in April, May and June. But if the round-the-world flight be from West to East it will involve the passage of the Pacific at the wide crossing of 4,200 miles, or else by a shorter way, but in the teeth of the North-East trades, which continue practically throughout the year, extending from the United States almost to the Philippines. In winter and spring they merge into the monsoon along the South Asiatic. Below the equator the South-East trades are met, and between the North-East and South-East trades is a narrow zone around 10 deg. N. lat. where the winds are variable and usually light. But even if the air navigator selected this region he would still be faced by the long flight from Honolulu to San Francisco, the alternative being an even longer one; and between Honolulu and San Francisco the North-East trades prevail.

The winter monsoons along the Asiatic coast are often violent storms, and the period in which these are prevalent must be ruled out. The airman would almost certainly have to choose May, June, July, and August for this part of the circuit, when the summer monsoons prevail, during which advantage could often be taken of fair weather. The South Asiatic Coast and the Philippines are subject to typhoons, which are most frequent in July, August, and September, and least frequent in February.

The most northerly crossings of the Pacific are too commonly fog-bound to be considered, besides being almost hopeless for other reasons. But the fog diminishes towards the Midway islands; and between 28 deg. N. lat. and the Equator there is scarcely any fog except near the American coast. So far as the present writer can ascertain, these coast fogs are the rule rather than the exception; but it must not be imagined that comparatively narrow bands of fog would be a serious deterrent.

It will be seen from these general considerations that the extreme northern routes are impossible, and that the routes taking in San Francisco and Honolulu would, if flown by aeroplane or flying boats, call for mid-ocean refueling depots. On the route Guam-Manila-Hong Kong, February would probably be the most favorable month. But how would the successful accomplishment of the Pacific section from east to west in February fit in with the other parts of a round-the-world flight? The answer is extremely difficult to find, but it is very rarely that an airplane could cross the Atlantic about 40 deg. N. latitude, from east to west; that is, until we get machines that will carry heavy loads at a speed of 150 miles per hour for upwards of twenty hours at a stretch. Speaking generally, the first half of the year is the most favorable for a flight from England to the East; and if one began in January, and reached Hong Kong or the Philippines about May, with luck the American continent and the Atlantic might be crossed by the end of July! But this would involve flying (against the trade wind) from Honolulu to San Francisco, and, as already said, would almost certainly demand a mid-ocean depot.

It is fairly safe to forecast, therefore, that the first round-the-world flight will be from East to West, and that the most northerly points touched will be San Francisco and Lisbon, there being no reason for calling at the British Isles.

To fix a minimum of six months for the flight is to take an optimistic view. Unexpected good as well as bad fortune would be encountered en route. There would be long and irritating delays; and a large number of local meteorological conditions, which cannot be referred to in a short article, would have to be considered. Indeed, the meteorology of the Pacific and the Asiatic coast is very little known. No doubt the flight would provide many interesting proofs of the existence of regions where the prevailing winds could be utilized for regular seasonal air services."

PULITZER RACE TO BE ABANDONED THIS YEAR

The Pulitzer Race scheduled to be held in Detroit, Michigan, in September, under the auspices of the Detroit Aviation Society, Inc., has been postponed for the reason that neither the Army nor the Navy will be able to participate in these races this year, due to the urgent necessity for economies in all branches of the government and the shortage of certain appropriations effecting the Army Air Service.

FOKKER TO BUILD AMERICAN PLANES

The Netherlands Aircraft Manufacturing Company announces that it will shortly commence the manufacturing of Fokker machines of all types in this country. Anthony H. G. Fokker, whose machines are now carrying passengers on every airway in Europe, said when he visited this country recently that he regarded the United States as the most fertile field for aircraft exploitation, and signified his intention of invading the American field as soon as his European contracts would allow. The Fokker limousine, 5-passenger monoplane, is the first of the ships he has sent here to make good his promise. The fact that the limousine is a monoplane, with the wing high above the carriage, allows passengers an uninterrupted view when in flight. The wing, which is more than two feet thick, is built on the cantilever principle and needs no struts or guys to support the carriage. This limousine is the most advanced type of passenger carrying airplane. Arrangements have been made by the officials of the Netherlands Company for a series of flights out of New York. One of the first of these will be a non-stop trip to Washington, where the machine will be demonstrated for the benefit of government officials.

AIRPLANE LANDING IN CRATER OF VOLCANO

The first landing by an airplane at Crater Lake, in the Cascade Mountains, was made by Cadet Raymond C. Fisher, attached to the 91st Squadron at Medford, Oregon, on July 14th when, encountering motor trouble while on forest patrol from Medford to Eugene, Oregon, he set his DH4B-1 neatly down on a bed of natural volcanic rock bordering the lake, which lies in an extinct crater, at an altitude of about 7,000 feet. No damage resulted to either pilot or plane. Despite the fact that the ground on which the plane landed was very soft, causing the wheels to sink in badly, Lieut. Eugene Batten four days later performed the unusual feat of taking off this ship from its unusual position.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England.

THE R.A.F. PAGEANT

The R.A.F. Pageant recently held at the London Airdrome, Hendon, was a brilliant success. The receipts are estimated at about £9,000 representing an attendance of about 80,000 people in the grounds. Including the people who were congregated outside of the Airdrome, it is estimated that nearly 150,000 people witnessed the Pageant. The King and Queen, Queen Alexandra, the Duke of York, and Prince Henry were among those present.

The day was an excellent one for flying, particularly from the point of view of the spectator, for although no rain fell the sky was often overcast, a state of affairs which makes it far easier to witness the evolutions of aircraft than when they are performing in the dazzling sunshine.

There were 16 events in all, and everyone was well executed. The handicap race was a good lesson in the matter of speed of present-day planes, for a Handley-Page with five minutes' start was a bad last over a course of 12 miles against a field of eight starters. The winner, on a Snipe, with one minute start, was five seconds ahead of the scratch Nighthawk, which came in third.

A very good exhibition of crazy flying was given by Flight Lieut. J. Noakes, A.F.C., M.M., on a vivid red Avro. He did just about everything on his machine that was guaranteed to be dangerous. He twisted and turned about near the ground, practically stopped in the air, fell sideways, backwards, and, in fact, it was hard to find anything crazy he could not do.

Perfect realism was furnished in the destruction of a kite balloon. From a formation of five Snipes far overhead, one came tumbling down, as if by accident, and then with a wild swoop it darted towards the balloon. There was a crackle of firing, and out from the balloon came the observer in his parachute - a dummy, he it said. Another assault on the balloon, and it burst into red flames that licked its sides and spread until 50,000 cubic feet of hydrogen were ablaze, and falling, with a long trail of dense black smoke behind.

England (Cont'd)

The bombing of an enemy village was the best item for excitement. The village had been built up of Handley Page's "scrap", and a very cleverly contrived village it was, houses of different sizes, streets, and a big church, and real men and women walking about. On the approach of the bombing squadron the people fled, some of them falling victims to the bombs. Heavy bombs fell in the village and blew up some of the buildings, starting fires. Then the formation returned and completed its work, and the whole village was in a blaze.

Two remarkable and impressive displays of close formation flying were also among the most beautiful performances of the day. First came a formation of five Sopwith "Snipes" from the Central Flying School, and the first point they scored was the extraordinary quick get-off. No sooner had they started than they were in the air, climbing steeply together and maintaining a perfect V formation throughout. Attaining a sufficient height, and wheeling round past the Royal Box they looped the loop all together. Changing from V to line, and from line to column, and displaying perfect discipline and machine control, the leader zoomed up as if to loop again, but remained at the top of the loop and flew upside down in the direction they had come. One after another followed suit, until all had their landing wheels uppermost. Then, with one accord, they rolled half over to the normal flying position. The other formation flying was by nine Bristols which left the ground in one perfect line, and suddenly at a signal formed into a column of threes past the King. Then they gave a beautifully executed series of maneuvers, the formation taking up one after another of the accepted orders of aerial battle, groups of three, each a small wedge, finally one big V, in which order the whole formation landed faultlessly. It was a revelation of what can be done by a squadron of accomplished pilots confident in their mounts and in each other.

France.

On returning from a trial flight on the new fast machine with which he was to take part in the Aerial Derby in London, M. Sadi Lecointe met with an accident which might have had serious consequences. A tire of one of the landing wheels burst and the wheel collapsed, the machine falling on its nose and standing on end. The pilot was thrown forward, receiving slight cuts on the face and two slight fractures of the left arm below the elbow.

A military airman named Leboucher flew to an altitude of 24,000 feet, carrying a load of 5 cwt. This feat was controlled by a representative of the French Aero Club and registered. It thus beats the record set up by the airman Thierry, who reached an altitude of 22,500 feet.

Australia.

The first flying boat in Australia, the privately-owned Seagull, piloted by Captain Lang, of the Australian Air Force, has returned to Sydney after a four months' cruise of the south-eastern coast of Australia. All the bays and inlets have been photographed, and the flying conditions up to 2,000 feet between Sydney and Tasmania have been tested, with especial attention to the islands of Bass Strait. The Seagull carried on most of the cruise three men, an anchor, and an amount of small equipment, and was accompanied by a motor schooner fitted out with a dark room. The Seagull remained the whole time absolutely unsheltered, took off from all sorts of seas, and outrode several gales (one lasting six days) on her own anchor. Almost constant high winds were found at 2,000 feet, although at the same time it was often dead calm at sea level.

I LEARNED ABOUT FLYING FROM THAT ✓

It was while I was giving exhibition flights at Evansville, Indiana, that I had the occasion to experience a good soaking in an airplane in the Ohio River. The engine had been acting badly the whole afternoon. A few minutes prior to the accident the engine was observed by me to be loading up with oil and throwing out immense quantities of smoke. It choked up and failed to respond properly. When the call for more power was given it choked completely and the plane dropped. When the wheels hit the water the momentum of the machine turned it over on its nose and I went under upside down.

I LEARNED ABOUT FLYING FROM THAT, Cont'd.

I learned from that experience not to try to run on top of the water and make a landing, but stall the plane on top and let it settle, therefore possibly avoiding the machine turning over.

DEATH OF FIRST LIEUT. JOHN BRANDON WRIGHT

First Lieutenant John Brandon Wright died at Fitzsimmons General Hospital, United States Army, Denver, Colorado, on July 28, 1921.

Lieutenant Wright was born January 27, 1895, in Portsmouth, N.H., where he spent most of his childhood, graduating from Tilton Seminary in 1916. He enlisted at Boston, Mass., Nov. 10, 1917, in the Aviation Section, Signal Enlisted Reserve Corps, and entered the School of Military Aeronautics, Massachusetts Institute of Technology, Cambridge, Mass., graduating therefrom March 9, 1918. He was then transferred to Kelly Field for flying training, where he passed the Reserve Military Aviator's test on June 4, 1918.

Lieutenant Wright was commissioned a Second Lieutenant in the Aviation Section, Signal Reserve Corps, on June 25, 1918, and ordered overseas, arriving in France September 19, 1918. On October 12th he began his training for Pursuit at the Third Aviation Instruction Center at Issoudun, France, and completed this training in November, after which he was detailed for duty with the 141st Aero Squadron of the Fourth Pursuit Group, stationed at Toul, France. He remained with this organization during its service in the Army of Occupation, and returned with it to the United States in July of 1919.

After returning to the United States, the 141st Aero Squadron was demobilized, and Lieutenant Wright remained on permanent duty at Hazelhurst and Mitchel Fields, Long Island, New York. He took a prominent part in the Transcontinental Race, and was one of those officers who completed the entire course. He was commissioned in the Regular Army as a First Lieutenant, July 1, 1920.

During his service at Mitchel Field, Lieutenant Wright took a very active and important part in the work of the field, and piloted one of the winning planes in the Pulitzer Race on Thanksgiving Day, 1920.

During the latter part of March, 1921, Lieutenant Wright became dangerously ill and, on April 16th, was sent to the Fitzsimmons General Hospital at Denver, Colorado, where he died on July 28th, after a long illness.

The loss of this young officer is deeply felt by his service, and his character and ability have reserved for him a permanent place in the memories of his fellow-officers and friends as an example of all that is fine.

SQUADRON NEWS

Mather Field, Sacramento, Calif., July 18.

Mr. Jack Sharpnack, a former Air Service Officer, accompanied by Mrs. Sharpnack, arrived at Mather Field by plane on the 13th. They had made the flight from Washington, stopping at municipal and government fields on the way down. After making some minor repairs on his JN4D, the pilot and his wife "hopped" off for Reno on Saturday morning.

Lieuts. Schramm, Catlin and McHenry, Cadet Hedrick and Sergeant Fisher left for Rockwell Field by rail on the 13th to ferry ships to this field for use in forest patrol work. They returned on the 15th with four planes, Lieut. McHenry remaining at San Diego for a few days, planning to fly a plane back to Mather at a later date.

Capt. Walsh, accompanied by Private Upchurch, made a trip to Visalia by plane on the 14th in connection with forest patrol work, and returned the same day. Captain Walsh left for Del Monte, Calif., on the 15th by automobile for the purpose of spending the week end with his mother who is visiting there.

A telephone message from Modesto on the 14th asked for assistance from this field in investigating an accident which happened to a civilian monoplane that morning, when four people met their death in a crash. Lieuts. Hackett and Gullet made the flight to Modesto. The civilian authorities were at a loss to account for the accident due to the unusual features thereof, and these two officers assisted in conducting the investigation. The ship was a six-passenger monoplane of special construction, flying between Oakland and Yosemite Valley. The pilot, Harold (Bud) Coffey, was a former officer in the Air Service, attended Ground School at Berkeley, and later was an instructor at Rockwell Field.

Ross Field, Arcadia, Calif., July 14.

Major and Mrs. R. M. Jones entertained Lieut. and Mrs. Robert Burnett at dinner on Monday evening. Lieut. Burnett is stationed at the San Pedro Naval Base.

Captain L. F. Stone and his mother were entertained at dinner by Captain and Mrs. C. M. Savage at their home in Monrovia on Wednesday evening.

The afternoon of July 13th was set apart for athletics, and both students and instructors tried trap shooting first and bowling later on. First Lieut. Asa J. Etheridge with a score of 15 breaks out of a possible 20 had the highest score, and in bowling ~~such~~ ~~ping~~ Lieut. Walter Williams, Major M. F. Davis and Captain Edgar P. Sorenson had high scores of 117, 114 and 107 respectively. In ten pins Major Reardan made the highest score - 204. Several of the officers who were not attracted by the sports spent the afternoon at the beach near Santa Monica.

Captain Gordon G. Noble, formerly in charge of transportation matters in the Office of the Chief of Air Service and now in the railroad business, arrived in Los Angeles on Saturday in charge of the Philadelphia delegation of Elks. Captain Noble entertained a number of the officers from this field Thursday evening at the Electrical Parade.

In a short but snappy boxing bout, Private Malcolm Miller defeated Private Sod Dolihite in the third round for the heavyweight championship of the post.

On Tuesday evening Colonel T. A. Baldwin, Major R. M. Jones, Major M. F. Davis and Captain H. W. Mooney, of this post, together with five officers from Fort MacArthur, acted as judges for the contest between the crack drill teams of the Elks Convention.

The Pony Blimp from this field is to fly at the Aerial Circus at the Speedway on Saturday, July 16th. There will be live parachute jumps, and many other interesting events, some of the enlisted personnel from this post participating. Lieut. Bruce N. Martin will be in charge of the Blimp.

Extensive improvements have been taking place at Ross Field during the past few weeks, especially in the matter of adding lawns and flowers. The post is now attractive with newly started lawns and many flower gardens. A great many quarters have also been opened up for officers and their wives. Old buildings have been repaired and remodeled for officers quarters, and these are now being occupied. About fifty officers are stationed at the post at the present time, and it is estimated that fully half of this number are now making their homes at the field.

Ross Field, Arcadia, Calif., July 14, Cont'd.

Major John D. Reardan and Major M. F. Davis will complete their Ground Course on July 16th. From two to three weeks in the air will then qualify them for their Balloon Observers' rating. The new officers' class which began on July 20th is now on its fourth week's schedule of the Ground Course, and all of the student officers in attendance are enthusiastic over the Lighter-than-Air Division of the Air Service.

Carlstrom Field, Arcadia, Fla., July 14-20.

Lieuts. Tinsley and Packard, who were seriously injured in an automobile accident, two weeks ago, are reported as much improved.

Although Wood, the new pitcher from Montgomery, allowed Wauchula only one hit, Carlstrom Field lost a close game by the score of 1 to 0. The Carlstrom team made six hits, but poor base running lost them opportunities to score.

Due to the fact that the present class has completed the course, almost all flying has been discontinued.

Lieut. Gottschalk, who crashed on July 4th, is reported to be doing very nicely.

The orders for the reduction in the size of the Army will seriously affect this field, as a great number of the most capable men have applied for discharge.

The total flying time for the week ending July 14th was 72 hours and 35 minutes.

Lieuts. Eaton, Amberg, Mallory and Nowland have been ordered to Camp Douglas, Wisconsin, for temporary duty for the purpose of participating in artillery practice, upon completion of which they will proceed to Camp Knox, Stithton, Ky., for permanent station.

91st Squadron, Eugene, Oregon, July 16.

Forest fires are steadily becoming more numerous as the season advances, and the patrols are working at regular schedules every day. Radio is very successful now, and with the big DeForrest set messages can be sent and received over a distance of 100 miles or more.

The baseball team defeated the Harrisburg "Giants" last Sunday by the score of 10 to 8. Next Sunday the team will cross bats with one of the fastest teams in the State, the "Coyotes" at Noti, Oregon. The second team played the "Regulars" on Thursday afternoon, and in a game of thrills almost defeated them.

Flight B, 91st Squadron, Camp Lewis, Wash., July 16.

Remarkable success is being achieved with the radio station here. Not only is the patrol plane distinctly heard during the entire line of flight, under favorable conditions, but the apparatus has been rigged up to receive musical concerts, and the men of this detachment enjoy nightly the songs of Caruso, Gluck, McCormack and others, being played on the phonograph of the 16th Field Artillery a mile away.

The pilots of this detachment enjoy the famous fishing and hunting at Forks, the patrol stop, on days when the patrol is held up there because of low clouds or storms.

Fairfield Air Intermediate Depot (Wilbur Wright Field) July 16.

On Friday, July 15th, the bachelor officers of the post entertained the married officers and their families with a dance, which proved to be a great success.

Major George E. A. Reinburg, Commanding Officer, and 1st Lieut. Chas. Wm. Steinmetz, Depot Adjutant, are laughing at the rest of the officers of the post who are frantically trying to comply with Circular No. 178 in regard to Sam Browne belts. Major Reinburg and Lieut. Steinmetz played a "hunch" and saved their belts when they returned from overseas.

Mrs. Chas. Wm. Steinmetz, wife of 1st Lieut. Steinmetz, had as her guest for the past ten days her sister, Miss Floryne Hennes of Columbus, Ohio.

Fairfield Air Intermediate Depot (Wilbur Wright Field) July 16, Cont'd.

Captain E. E. Adler, Air Service, has been ordered to report to this station on August 1st, from Washington, D.C.

Lieut. Merrill D. Mann has wished his Flivver off on another member of the post and is now sporting around in a brand new Buick.

Mrs. P. R. Turpin, wife of 1st Lieut. Turpin, has returned from her annual leave and reports as having spent a very enjoyable vacation at her home in Missouri.

Captain Charles O. Thrasher, Quartermaster at this Depot, has taken advantage of a ten-day leave, which he will spend at his home in Paxton, Illinois.

First Lieut. Charles M. Leonard, Depot Adjutant, has also taken advantage of a ten-day leave, which he will spend in Cleveland, Ohio.

Two D.H.4B's left this field Friday, July 15th, for Camp Knox, Ky., where they will be used in spotting artillery. They were piloted by Captain Thomas Boland and 1st Lieut. George V. McPike. These ships were rebuilt and completely equipped with radio at this station.

One J. N. 4-H which was rebuilt at this field for Fifth Corps Area Air Officer, was delivered to Fort Benjamin Harrison July 15th by Lieut. Merrill D. Mann.

Two D.H.4B's are at present time being flight tested, and one Spad, one Breguet and five SE-5's are now on their way through the shops.

The Radio Department has recently assembled twenty-five SCR-73 Sets.

Air Service Mechanics School, Chanute Field, Rantoul, Ill. Aug. 1.

Thursday, July 28th, marked the arrival of Major Frederick L. Martin to take command of Chanute Field, relieving Major George E. Stratemeyer. Major Martin recently completed a course in bombing at Kelly Field and reported to Chanute Field from that station.

Major and Mrs. George E. Stratemeyer left Sunday, July 31st, for Chicago, Illinois, to visit Major William C. McChord, Air Officer of the Sixth Corps Area. This marks the beginning of the two months' leave of absence granted Major Stratemeyer prior to his departure for Luke Field, Hawaii, where he will assume command. Major and Mrs. Stratemeyer intend to visit Chicago, Ill.; Peru, Indiana; Chattanooga, Tenn.; Miami, Florida; San Antonio, Texas; Los Angeles and San Francisco, California, before leaving for Hawaii in October.

The personnel of Chanute Field now go about their accustomed tasks with their faces expressing entire satisfaction. No matter how high the mercury may rise or how blistering the beams of the sun may become, they refuse to worry, for relief in the shape of the big swimming pool, which was opened July 20th, is always at hand. It is safe to say that every person on the post splashes noisily in the big tank at least once a day. The water in the pool is kept absolutely pure at all times by means of a motor operated filtering plant, which runs constantly.

It was with the deepest regret that the entire personnel of Chanute Field bade their former Commandant farewell at the train. Major Stratemeyer has commanded the Air Service Mechanics School for the past three years.

Balloon Company Number 31, Camp Knox, Kentucky, July 25.

On Saturday July 9, 1921, there was "Some Party" at the Post. On the six o'clock train there arrived as guests fifty charming young ladies from Louisville, well chaperoned. At the big Barbecue at six thirty, each man gave his girl his "War Set" Mess kit and every one got busy with the feed. General Lassiter, Colonel Binford, Major McDonald, Captain Flounders, Lieutenant Bell and Lieutenant Brown, were guests of honor. After the "feed", dancing to one of the "jazziest" bands in Dixie started in the Balloon Hangar which had been all "slicked up" for the occasion. Next morning at eight the young ladies, who had been "bunked" in an unused building had a regular Army Breakfast. After church, a baseball game was played with the Heavier-than-Air team of Godman Field. A big chicken dinner at noon finished the party, and the young ladies left Sunday afternoon, all expressing the desire to come back to another party.

Balloon Company Number 31, Camp Knox, Kentucky, July 25, Cont'd.

Saturday July 16th the Company out of bed at 3:30 A.M., took the Balloon across country to Roosevelt Ridge to have the final dress rehearsal for the Demonstration which took place on Monday the 18th, and got back at ten-thirty that morning, everything going well. Monday afternoon at 1:30 the Demonstration took place. This was a Battalion of Infantry attack. The 40th Infantry were the "Star Performers". There were 37 M.M. guns, Stokes Mortars and Machine Guns. A 75 acted as accompanying gun. They were supported by two batteries of the 83rd Field Artillery. The Balloon ascended for observation at H hour minus 35 minutes and at H minus 20 was attacked by a flight of enemy airplanes. Our machine guns opened fire and a flight of our own airplanes drove off the enemy but not, however, until the observers had to jump in parachutes. It was a pretty spectacle and worked out nicely. Then the Artillery opened fire on the enemy positions. The Infantry came forward until they were halted by enemy fire when they deployed and advanced by squad rushes, finally gaining superiority of fire by machine guns, Howitzers and Stokes Mortars, assisted by the Artillery and Airplanes. They organized for attack and assaulted by marching fire, taking the position and organizing for defense. This was the end of the problem. The demonstration was for the R.O.T.C. students and the student officers of the Basic School. Guests of honor were General Read, Commanding General, 5th Corps Area, and Staff, and Presidents of the colleges, the students of which were attending the R.O.T.C. camps.

The Civilian Military Training Camp started with 1350 students, a fine looking lot of young men.

The Company is now busy on preliminary rifle training, sighting, aiming and position drills.

France Field, Cristobal, Canal Zone, July 2.

Mr. James Otis, President of the San Francisco Aero Club and a pioneer California aeronautical enthusiast, was a visitor at the field the first of the week and was given the interesting ocean to ocean flight over the canal by 1st Lieut. R.C.W. Blessley. Early in May Mr. Otis left San Francisco on a proposed overland flight from California to South America, the route to cover Mexico, Central American countries, the Canal Zone and Panama. The 3-passenger Ansaldo, with which the attempted flight was started, only reached New Mexico where three forced landings and continued hard luck ended with the crashing of the plane. Had the trip been successful it would surely have been an epoch-making flight, for the proposed route covered stretches of hundreds of miles where a forced landing would mean descent into jungle or country where repair facilities and supplies are few.

The post basketball team met the 14th Infantry quintette at Fort Davis Wednesday evening in one of several practice games preparatory to the start of the Army and Navy League season later in the month. Steady practice has developed a fast team, and the France Field players swamped the Infantrymen 38 to 6 by consistent basket shooting and speedy work on the floor.

Extensive repairs, necessitated by the rapid deterioration of metal sheathing in this climate, are being made on the three steel hangars on the flying field before the wettest part of the rainy season starts. With less than two years' service the metal roofing has been fairly well eaten out by rust and the replacing of the metal by asbestos shingles promises longer life. Structural steel on hand is being painted and stored pending plans for the contemplated construction of more steel hangars on the flying field.

Flight B, 12th Squadron, Nogales, Ariz, July 30.

On Monday and Tuesday of this week the baseball team of this flight added two more victories to its credit by defeating two of the fastest company teams in the 25th Infantry. Seven games were scheduled for the week but, due to rain, only two were played. A total of 32 games have been played during the season, the team only having lost six games.

Air Service Observation School, Post Field, Fort Sill, Okla., July 15.

A formal dance and reception was given Thursday evening at the Officers' Club, welcoming the new Assistant Commandant, Lieut.-Colonel Paul W. Beck, and bidding farewell to the retiring Assistant Commandant, Major Follett Bradley. In the receiving line were Brigadier General Hinds, Lieut.-Colonel Paul W. Beck, Major and Mrs. Bradley, Major Thomas G. Lanphier and Mrs. Lanphier, Captain Wm. E. Lynd and Mrs. Lynd, and Lieut. Kenneth N. Walker. The dance, in spite of very high temperature, was quite a success. Refreshments were served the latter part of the evening, consisting of sherbet, and cake.

Lieut. Russell L. Williamson added a DeHaviland to his list of scalps this week. It is the old, old story of "motor cutting" out while he was taking off from the J.M.A. field near Elgin. He was forced to land into a tree, thereby wrecking the plane. Fortunately, he escaped personal injury.

The School schedule for this week has been abandoned. All the theoretical work has been postponed and the time devoted to flying, which met with the approval of all concerned. All student officers seem to be particularly anxious to get much more flying than it has been possible to give them so far; accordingly it was decided to postpone the theoretical work for a time and get in more flying.

It seems that the three hundred enlisted men who have just reported at this field are not going to solve the shortage of personnel problem, for since the discharge instructions came through approximately 300 men have requested their separation from the service. When these men go, at a very early date, it will be impossible to operate the school here with a comprehensive training program as previously planned.

It is with regret that the command bids farewell to Major Bradley and Mrs. Bradley. Major Bradley has been in command for the last year, and during that time all the officers have learned to like him personally and to have great respect for him as a commanding officer.

Clark Field, Pampanga, P.I., June 4.

Two new officers arrived on the transport THOMAS to take the place of the officers who are leaving for the States on or about August 15th next. Captain Lloyd N. Keesling has come direct from the Office of the Chief of Air Service in Washington to relieve Captain Charles T. Phillips, who is due to return to the States soon. Captain Keesling has been acting as Assistant to the Chief of Operations in Washington, D.C. Lieutenant W. R. Taylor, who had been on duty with the Photographic School at Langley Field, Va., is to assume command of the Sixth Aerial Photographic Section. His advent will mean that Major Chester C. Staples, Infantry, who has been acting as Photographic Officer since December 3, 1920, will now be given a leave to visit Borneo, Java, Sumatra and India, after which he will return to the States. Both Captain Keesling and Lieut. Taylor are married, which fact is a welcome one to both bachelors and married officers, as each new addition tends to drive dull care away.

Kindley Field, Fort Mills, P.I., June 4.

"Who will win the Trophy" is the clarion call of the Field these days. The company winning the greatest number of games in the Indoor Baseball and Horse Shoe contest series carries away the silver cup. Each company has a conspicuous shelf already made for its coming.

A garrison school for officers has been formed, and Lieut. Bolling commenced the school with instructions on the Manual of Courts Martial. Instructions are held one hour daily, excepting Saturdays and Sundays.

Captain and Mrs. Cole have returned from a month's leave spent in visiting China. They report having had an excellent time.

For the fourth time since the arrival of the 2nd Squadron, selections have been made for enlisted men to make a trip to China on what is commonly known as "The China Excursion". The men who have proved themselves worthy of this consideration this time are Privates Reed, Redus and Karr. The trip usually consumes about a month's time and is well worth getting up and hustling for according to the claims of the lucky ones.

Hqrs. Detachment, 4th Group (Obs.) Paranaque Beach, Manila, P.I., June 4.

Colonel McManus, General Staff, made a trip in an H.S. 2 L. around Manila Bay in an effort to locate a site for a landing field. Captains Ervin and Eaker were pilots.

Captain Eaker and Lieut. Blaney, with Sergeant Wright and Private McDaniel as passengers, gave the new Air Service officers on the THOMAS a jazz as she was plowing through the south channel into Manila Bay.

Captain Ervin, with Lieut. Franklin as assistant pilot and Colonel Casey, Q.M.C. as passenger, came over from Corregidor in an H.S. 2 L. On the way over they added Lieut. Wood, Air Service, to their passenger list, taking him off the large harbor boat "Engineer". Captain Ervin taxied his seaplane up behind the big boat, holding the nose of the plane against the stern while Lieut. Wood was removing himself and baggage from the "Engineer". The harbor boat moved during the transfer at its usual cruising speed.

Rains have put the Headquarters Flying Field in excellent shape.

Captain Phillips and Lieutenants Hurd, Longfellow, Webber and Johnson came down from Stotsenburg during the week.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field, informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE AUGUST 20, 1921.

FLYING THE EARTHQUAKE RIFT

As time goes on we are becoming more and more convinced that the invention of the airplane was a great boon to mankind. Eliminating from discussion the supreme position the airplane has taken as an effective weapon in modern warfare, its utility in peaceful pursuits appears to be without limit. In mapping and surveying the airplane has supplanted the more laborious and time-consuming methods; by its use agricultural experts have been enabled to locate various areas infested by insect pests which have caused unlimited damage to crops; regions hitherto inaccessible have been successfully explored from the air and photographed and the results shown to the world; and now the airplane has been used to photograph earthquake rifts, so that the time may not be far distant when, through intensive study and research, seismological experts may be able to foretell the coming of the next earthquake and prepare the people in time to avert serious loss of life, such as characterized the San Francisco earthquake of 1906 and many other volcanic disasters of the past.

Prof. Bailey Willis, President of the Seismological Society of America, has prepared an interesting report of an airplane flight undertaken on June 9th to 11th, 1921, to observe and photograph the San Andreas Rift, the line of the earthquakes of 1857 and 1906 in the Coast Range of California. Prof. Willis states that flying over the earthquake Rift to photograph it is an item in an intensive study of earthquakes and their effects which is being conducted by the Seismological Society of America. The San Andreas Rift was made conspicuous by the movement which is known as the San Francisco earthquake of April 18, 1906. A still more violent earthquake occurred along the southern portion of the Rift in 1857, and minor displacements occurred on that part of the crack which traverses the Santa Cruz Mountains in 1865 and 1890. The San Andreas Rift as a whole extends from Humboldt County through the State of California roughly along the trend of the Coast Range to Tejon Pass, and thence southeastward into the Mohave Desert. Its known length exceeds 600 miles, and its probable extent is much greater. It is a major feature of the structure of the continent.

The San Andreas Rift is a very old feature of the Pacific Coast. Even as geologists measure time, by millions of years, it is ancient. It has been the scene of earthquakes from its beginning, and there is no end to them that man can foresee. If we remain ignorant of them, disregarding their signs, we shall from time to time be overwhelmed by sudden disaster, the more appalling because unsuspected. If we observe those features of the surface by which an active earthquake may be identified, we shall be able to take intelligent precautions against damage. If we study the elastic strain which accumulates along the Rift until it is released by the earthquake shock, we may come to understand and possibly be able to eventually foretell the coming of the next earthquake.

Photographing the San Andreas Rift will not give us any new information regarding that particular fault. It has been mapped in detail by more laborious methods. But by photographing the known rift we hope to establish criteria that may enable us to recognize similar rifts in the regions that may be mapped by airplane surveys. There are extensive areas which are believed to be traversed by active earthquake faults, that is by cracks which may at any time be the scene of movement, in California and adjacent parts of the Southwestern United States. These faults are difficult to identify by ordinary methods of survey, and it is hoped that helpful results may be obtained by airplane.

These flights which were made for observation of the Earthquake Rift comprised a preliminary trip over Mt. Tamalpais and Bolinas Bay, the outward trip from San Francisco to Los Angeles over the Coast Ranges and the return trip from

Los Angeles to San Francisco over the San Joaquin Valley, and stops were made at Bakersfield on both of the latter trips.

In describing his interesting flight, Prof. Willis goes on to say:

"On the morning of June 9th there was no sea fog. A brisk breeze blew the smoke of San Francisco inland, partially obscuring the Bay and the hills beyond, but the western and northern skies were clear to the horizon. From an altitude of 5,000 feet over the Presidio I noted that the visibility directly down on the Golden Gate and shores was excellent. Small rocks and ripples in a sheltered cove were sharply distinct. At 5,500 feet a man and his shadow on the sidewalk were recognizable, but the man could not be distinguished from his shadow. The shadows of lamp posts lay like fine black threads across the sidewalk.

During the flight southward the same clearness persisted in the upper atmosphere, but in the arid valleys south of Latitude $36^{\circ} 30'$ the dust haze somewhat obscured the view. This dust haze occasioned a peculiar halo effect. Looking straight down through 5,000 to 8,000 feet of air the ground immediately beneath the plane looked quite distinct, the dust being the color of the plain and not sufficient to obscure any of its features, but in the line of view directly out from the plane to a distance of three or four miles to one side the haziness increased with the distance and produced the effect of a halo encircling the plane.

The temperature of the air from San Francisco to Bakersfield I estimated at about 50° Fahrenheit at altitudes of from 8,000 to 10,000 feet. Descending into Bakersfield was like dropping into a furnace. The temperature of the field in the sunlight was in the neighborhood of 110° . On rising from Bakersfield at an altitude of 7,000 feet we met a southwest monsoon wind which brought a refreshing tang of the sea. At 5 p.m., as we passed over the San Fernando Valley, a sea fog was drifting in, and already covered the ocean and the coastal strip as far as the suburbs of Los Angeles. It had not, however, at that time, obscured the flying field.

On June 11th, the day of the return trip from Los Angeles to San Francisco, a very dense fog covered Los Angeles. There was no wind and no prospect of clearing. We waited at the flying field until 11 A. M., but then having ascertained by telephone that the skies were clear 15 miles inland, the pilot agreed that we should go up. At 1,000 feet we lost sight of the ground. At 1,500 feet our speed had increased from 80 to 120 miles, as we had lost our sense of direction and were falling, but the pilot recognized the fact and we rose again. At 1,800 feet the sunlight shone through the fog with a beautiful golden radiance, and at 2,000 feet we passed above it into the clear air. There being no wind, the cloud mass lay white and still, with here and there a darker spot which like a sun-spot marked a small cyclonic hollow. As we approached the inner margin these holes became more numerous and the ground became visible. The conditions of the air appeared to remain the same as long as we were south of San Emigdio and the Tehachapi Mountains. During the afternoon, however, as we flew from Bakersfield over the Valley we bucked a strong head wind, and occasionally the heat-waves rising from the plain produced bumps at our altitude of 5,000 feet.

The purposes of the flight were two-fold; first, to observe the earthquake Rift, as a feature of the topography, and to determine to what extent it might be recognizable in its true character; and second, to photograph the strip of country traversed by the Rift, in order to determine to what extent it might be distinguished in such photographs. So far as the first object is concerned, the trip was eminently satisfactory. The photography, on the other hand, is a failure, partly because of inexperience with that kind of camera, and partly because of mechanical defects in the instrument itself.

Primarily the interest centered in the recognition of the earthquake Rift. The Rift is a line, and features peculiar to it must fall into line. The general position and course of this rift being known, the observer was constantly noting valleys, lakes and ponds, ravines, washes, or scars on the surface, which lined up with one another. From over Mussell Rock, where the rift cuts the shore, the range along the Rift was plainly that of the axis of San Andreas and Crystal Springs Lakes, and was continued in the valley through Searles Lake and beyond to Black Mountain. Stevens Creek heads in that summit on the rift, and flows for six miles along it. Thus for a distance of 33 miles the earthquake line is marked by major features of the topography, by valleys which are due to the cooperation of displacement and erosion. Similar valleys might be produced by erosion alone, and since the rocks are hidden by water, soil and vegetation, the aerial observer could not see the displacement. In this section the observer could infer, but could not demonstrate the existence of the rift.

Continuing southeastward beyond Wright's Station on the Santa Cruz branch of the Southern Pacific, the Rift traverses the western slope of the Santa Cruz Mountains near the summit, and determines the course of numerous small valleys which are the head-valleys of streams that flow south to Monterey Bay but which, contrary to what would be expected, range themselves into line parallel with the crest of the mountains. Along this same line there are numerous landslide scars and small ponds. No one or small group of these features would necessarily indicate the existence of the Rift, but their alignment over a distance of 25 miles would be strong presumptive evidence of its existence, and that alignment can be seen from the airplane. The only other way in which it can be demonstrated is by a study of an accurate topographic map, which is in itself, as it were, an airplane view. Thus, for any section of an earthquake crack which might be indicated by features similar to those occurring on the western slopes of the Santa Cruz Mountains observation by airplane would constitute a valuable method of investigation.

Passing to the middle section of the earthquake Rift, where the aridity of the climate prevents the growth of vegetation and limits the destructive work of erosion, the marks of the earthquake became more distinct and more continuous. Thus my notes read: "Mustang Ridge and Peach Tree Valley, Rift shows in serpentine slides in the ridge. Temblor Range, the line of the Rift shows like a slight soil streak for miles ahead. Over Carrizo Plains at Wolforts, Rift shows up in a line of white washes easily lined up," and a little further along: "Rift shows plainly like a canal ditch."

It is desirable to note here that the character of the Rift in the Carrizo Plains is somewhat extraordinary. The last movement which took place there was in 1957, yet the disturbance is still clearly marked. From the point where the last observation was noted the crack is marked by two embankments with a depression between. The floor of the latter looks comparatively smooth, but there are stretches where it suggests that quantities of earth had been dumped into the canal. The feature could be seen as far as the dust haze permitted, probably to a distance of 10 or 15 miles. These effects are the result of a horizontal displacement of unusual magnitude.

In the extreme southern section the Rift is marked by the Cuddy Valley, which encircles San Emigdio Peak, and is there recognizable by washes, patches of white alkali which are due to springs which rise along the crack, and also by green meadows which are produced by more copious or permanent springs. None of these features in themselves would constitute evidence of the earthquake crack, but in their alignment they serve clearly to locate its position.

We may conclude then that the airplane affords a means of recognizing the existence of an earthquake rift, because it gives an opportunity to get into the line of the crack, and to look along it in a way that is otherwise impossible. The interpretation of the facts is, however, not so facile that it could be safely entrusted to an untrained observer. As a rule the valleys, ponds, swamps, washes or land-slides that constitute the superficial features of a rift may be due to a variety of causes, and only an observer who has been trained in the interpretation of such features could safely be trusted to read them correctly.

The Seismological Society of America, which is the organization primarily interested in the investigation of which this is a report, was organized shortly after the great San Francisco Earthquake to pursue studies in both the scientific and practical aspects of the subject. Its work is directed to the development of an understanding of the causes of earthquakes, in order that we may be able to observe the conditions which indicate their approach. It is hoped that eventually we may predict their coming, as we now foretell the passage of storms. Among the scientific problems involved is the study of the geologic structures among the mountains, and to that study the tracing of earthquake rifts, by airplane or otherwise, belongs.

On the practical side there are many conditions of engineering and architecture which demand that the public recognize earthquakes as inevitable in certain districts. The apathy of the public invites disaster. It is therefore a contribution to public welfare to pursue our studies in a way which will attract attention, as has been the case in flying the Earthquake Rift."

AIRPLANE LANDING ON MONT BLANC

The difficult feat of landing on the top of Mont Blanc was accomplished by a French aviator. Lieut. Durefour of the French Army started on July 30th at 6:15 o'clock from a field near Lausanne, and at 7:05 landed on the top of the peak, at an altitude of 15,782 feet. Lieut. Durefour alighted from his machine, and after walking around for ten minutes took to the air again, landing twenty minutes later near Chamounix.

LIEUT. DOOLITTLE'S NARROW ESCAPE

Piloting a fast scout plane at Mitchel Field on July 30th, in the presence of several hundred spectators, including General Wm. Mitchell, and several other officers, Lieut. J.H. Doolittle saved himself from what appeared certain death by the skillful maneuvering of his plane. While coming out of a loop about 300 feet from the ground he discovered that the trailing edge of the plane had collapsed, causing it to wobble. Almost immediately thereafter one wing collapsed. Unable to turn the plane, he nevertheless remained cool and managed to land on an even keel in soft dirt. The plane was wrecked, but Lieut. Doolittle fortunately escaped injury. He made another flight immediately thereafter in a machine of the same type.

CONCORDIA, KANSAS AVIATION MEET

An aviation Meet and Show is scheduled to take place at Concordia, Kansas, on August 11th, 12th, and 13th. Twenty pilots have indicated their intention of competing in the various events. Free gas, oil and hotel accommodations are to be supplied to all participating pilots, and a banquet for all of the contestants will be a feature of the closing night.

NEGRO AVIATOR COMES TO THE FRONT

There are other things besides "Home Brew" that have a "kick" to them, as a man of color in the Sunny South has discovered. George Fisher, claiming to be the only Negro aviator, has come forth into the aeronautical world with a home-made airplane, intending to startle the natives down in New Orleans with his prowess as a pilot. In all likelihood George carries in his hip pocket two left hind feet of rabbits said to have been killed by the light of the moon in a country graveyard, and a slicked up dime amongst his spending change, for in his first trial flight the propeller of his machine flew off, tearing a hole in a house and hurling itself into a player piano. Not to be deterred, however, by this trifling incident, George, it is said, claims to know what he is about and intend to fly his "flivver" again. Nothing has been heard thus far as to the result of his second venture, but if the hind pedal extremities of the two deceased rabbits aforementioned still bear their mystic charm, it is quite likely that an irate tenant will be after George's scalp and make him "dig up" for house repairs and a new player piano.

SPRAYING TREES FROM AN AIRPLANE

The novel experiment of spraying a grove of trees from an airplane, the first ever attempted in the United States, was made on August 4th over the farm of Harry A. Carver, near Troy, Ohio, to prevent further ravages of worms which have twice practically defoliated this grove of 5000 Catalpa trees. The plane, piloted by Lieut. John A. Macready, Air Service, and carrying E. Dormoy, McCook Field, designer, who constructed the sifter used to spray the arsenate of lead powder, flew within 20 or 25 feet of the top of the trees, releasing the powder which was carried by the wind and air currents from the ship's propeller into every part of the grove. Treatment of trees in this manner saves much time and labor, as an airplane in a few minutes can do work which would require a number of men and many pump sprays several days. The effect of this experiment will be watched with interest by entomologists and forestry experts in many parts of the

country, especially in the east, where a similar scourge is working havoc with many magnificent elm trees. The idea of utilizing an airplane for this purpose originated with Mr. C. R. Neillie, of Cleveland, who came to Troy to witness the first trial. Mr. H. A. Gossard, Chief of the State's Department of Entomology, also came to witness and assist in the experiment.

Mr. Dormoy is understood to be working on a new hopper which will simplify spraying of the powder, and McCook Field officials have indicated their willingness to cooperate with farmers and with the Department of Agriculture in combating insects and tree infection.

THE LONDON AERIAL DERBY

According to "FLIGHT", the official organ of the Royal Aero Club of the United Kingdom, the Aerial Derby held at Hendon, the London Aerodrome, on July 16th, presented a sort of tameness compared with previous Aerial Derbys, due to the fact that out of a representative entry of 20 machines, 8 scratched, the majority of which were favorites or "dark horses". Of the 12 starters, only one, the Napier-Lion-Mars I, and the winner, claimed special interest, inasmuch as it was the only really new machine which entered the Derby. Seven planes completed the full course, which consisted of one circuit of 100 miles. John Herbert James, who piloted the Mars I airplane, completed the course in 1 hour, 13 minutes and 28 seconds, his speed being 163.34 miles per hour, and he won a trophy and £400. This machine also won first place in the handicap race, the first prize for that event being a trophy and £200.

The dimensions of the Mars I airplane are as follows: Length 23'; span 22'; chord 4' -9", gap 4' -9", area 205 sq. feet. The undercarriage struts are of spruce and are attached to the lower longerons by links, so that a slight discrepancy in alignment does not matter. To reduce resistance the shock absorbers are partly enclosed in streamline casings. The wings do not present any unusual features. The section is normal and is not a specially thin racing section, there being ample room for spars of reasonable depth. The spars and ribs are of normal construction also, and the only feature which calls for comment is the use of single I struts in a machine with staggered wings. The wing tips of the top plane are rounded off, as no ailerons are fitted to the top plane. The lower wing tips on account of the ailerons are square, with just the corners rounded off. The ailerons are easily get-at-able, and the absence of the ailerons on the top plane allows of thinning down the wing tips, and thus improves the efficiency of the wing which most affects the performance. The weight of the Mars I, fully loaded, is 2,500 lbs.

A WARNING TO PILOTS FLYING AT MITCHEL, ROOSEVELT OR CURTISS FIELDS

The Curtiss Aeroplane & Motor Corporation advises that the Air Mail have erected two wireless poles 150 feet high, about 100 yards north of the Curtiss factory at Garden City. Electric lights will be placed on these poles to avoid danger of collision at night.

Pilots using Mitchel, Roosevelt or Curtiss Fields at Garden City should take care in landing that they do not come so low as to collide with these poles.

AND I LEARNED ABOUT FLYING FROM THAT

Readers of the AIR SERVICE NEWS LETTER have no doubt been following closely the stories published therein from time to time under the above caption. It has come to our attention that these stories have been reprinted in various aeronautical periodicals, service journals, etc., indicating that they were of timely interest and value to the flying fraternity. Our primary aim in publishing these stories is to bring to the attention of airmen helpful hints that may enable them to avoid the accidents experienced by others, some of whom have fortunately survived and learned the lesson while others to our great regret have departed into the Great Beyond, giving their lives in the line of duty.

Every pilot has at one time or another during his flying career undoubtedly had a mishap, a narrow escape, a thrilling experience, from which he learned a lesson and which has served to make him more careful and to firmly resolve not to

"stick his hand in the fire" again. The air pilot is practically certain sooner or later to be confronted with the necessity of making a forced landing, due to motor trouble or other causes, and in such an emergency he uses his utmost endeavor to make as safe a landing as possible. Every hint or suggestion that may be offered to prevent accidents is well worth publishing broadcast.

The AIR SERVICE NEWS LETTER gladly welcomes any contributions from Army and civilian pilots which would serve to aid us in our endeavor to make flying safer. Do not hesitate to write us of your experiences, for yours may serve to prevent others from making the same mistake and save them from death or serious injury.

MORE ABOUT THE RADIO CONTROLLED CAR ✓

In a previous issue of the News Letter we gave a description of the radio controlled car at McCook Field, the mystifying gyrations of which caused so much wonderment and comment amongst spectators who witnessed its performance. Just recently the citizens of Dayton were given an opportunity to witness the performance of this vehicle, which was operated through the downtown traffic directed by Captain R. E. Vaughn, of McCook Field, who designed and perfected the device.

Just at the hour when morning traffic is the heaviest, a little three-wheeled car, about eight feet long of cigar-shaped construction, left the monument on North Main Street and made its way south, blowing its horn and observing all traffic rules. Vaughn guided the car solely by means of a wireless set installed in an automobile in which he followed the car at a distance of 50 feet.

At Fifth and Main Streets the car turned east to Jefferson and North to Monument Avenue. Here motion pictures were taken.

The entire control of the car was brought about through the wireless antennae and outfit with which both machines were equipped.

THE VERSATILE AIRPLANE ✓

Under the above heading the "Dayton Journal" of August 6th, makes the following editorial comment on the many varied uses in which the airplane is employed at the present time.

"The airplane had first to prove its possibility. Then it had to prove its practicability. Now it is demonstrating its versatility. With this established the airplane, just as its predecessor, the automobile, can settle down to the quiet task of meeting man's needs.

We have small, fleet airplanes to-day that travel faster than any other contrivance man has fashioned. We have larger, more cumbersome planes that carry great loads successfully for long distances. We have planes that operate over land or sea at will and with ease; planes, too, that can land in the sea even when the water is rough. We have planes that ascend to terrific heights in search of scientific data, and planes that engage in something as prosaic as the spreading of arsenate of lead over catalpa trees suffering ravages of insects.

Think of the versatility of the planes to-day - man's new toy is but partially understood and barely developed! Airplanes serve to deliver important mail to ships far at sea, the planes reaching the ship in a few hours from the same port the ships sailed many hours before. Airplanes are used to cut tedious hours from the delivery time of trans-continental mail. Airplanes are used by a rancher to speed him in a few hours over all his vast acres, giving him information it formerly took many cowboys days to gather for him.

Recently, when engineers were undecided as to which of three routes would be best for the construction of a railroad through certain mountains, airplanes took the engineers over the three routes in a few hours and showed them beyond question which was the most practical, whereas old-fashioned surveys would have taken months and cost thousands of dollars. Airplanes have been used in rushing persons critically ill to specialists or special hospitals many miles away. Airplanes are the surest, strongest weapon of national defense, as witness the recent bombing tests over the Virginia Capes, and the theoretical bombing of Washington, New York and Philadelphia.

New uses to which airplanes may be put are being found each day. Who dreamed, in 1899 or even in 1904, of the uses to which the automobile would be put? Who dreamed in 1909 or even in 1914, at the outbreak of the world war of the uses to which the airplane would be put in 1921? Who can place any limitations on the possibilities of the airplane 10 years from now? The airplane is in its first stages of development and its versatility is only now beginning to be appreciated. Ten years from now what may we not see!"

NAVY AIRSHIP A BUCKING BRUNCO

A rather unusual incident occurred on August 6th during a test flight of the Naval towing dirigible H-1, carrying Lieut. Charles Bauch, pilot; Machinist E.A. Sullivan; and Chief Aviation Rigger D.A. Kennedy. Soon after starting the flight from Rockaway, it was noticed that the engine was not acting properly, and although repairs were attempted the engine "went to pieces", as the crew expressed it. Precipitously dropping to Barren Island in Jamaica Bay and unceremoniously dropping her crew on a marsh on that island, the ship rose swiftly to a high altitude, became a prey of prevailing breezes and ended an unpiloted journey of about 50 miles by settling unharmed into a field near Scarsdale, N.Y., narrowly missing a church steeple as she drifted down to earth. The crew who were thrown from the craft when she struck the island with a crash floundered about the swamp, watched the unruly airship dart away, and were picked up later and taken to a hospital where it was said their injuries were not serious. During the aimless flight of this craft she drifted over Brooklyn, a part of Manhattan and then roamed over Westchester county before finally settling to the ground. A score of men made her fast to a stump, and motor trucks from the air station arrived soon afterwards with aviation mechanics who began dismantling the ship to take her back to her hangar.

PHILIPPINE GOVERNMENT TO RELINQUISH ITS AIR SERVICE

There is a possibility that the Philippine Air Service will be taken over by the Army or by a private enterprise, as the Insular Government is desirous of being relieved of the expense of maintaining the service. A conference between officials of the Army and the Philippine Government was held on July 8th with regard to the proposed transfer, but no decision was reached in the matter. A private company, of which E.J. Hamilton Stevenot is the head, is said to be making a bid for the aeronautical property of the Philippine Government, but until a proposition in writing is submitted no action can be taken thereon. Further meetings will be held between the Military and Insular authorities with a view to the ultimate settlement of this matter.

ARRIVAL OF THE AIRSHIP "ROMA".

The semi-rigid airship "Roma", purchased by the United States from the Italian government, recently arrived at Norfolk, Va., on board the U.S.S. MARS. Major Fisher, Commanding Officer of the Lighter-than-Air Division, Langley Field, is making the necessary arrangements for the transfer of the ship to its home base, Langley Field. It is said that some time will be required in the work of assembling and setting up the mammoth dirigible.

AIRSHIP MAKES TRIP TO CAMP DIX

One of Langley Field's big blimps, the C-2, under the command of Major Pagelow, who was accompanied by Major Strauss, Lieuts. Reed and Anderson and Sergeants Ryan and Gabriell, sailed into Camp Dix recently for the purpose of giving the West Pointers encamped at that place practical instruction in this branch of the service. During the time spent at Camp Dix, seventy cadets were taken up on flights.

RADIO

Langley Field

Communication was established with Bolling Field and tests are being carried on in an effort to determine the best working wave lengths. While using 450 meters, undamped, Bolling Field comes in at this station loud enough to be read all over the room without keeping phones on, although this wave length is unsatisfactory for regular work with them as there is quite a bit of commercial traffic and, consequently, the interference is very bad. While using 830 meters undamped they are not so strong as on 450 meters, but there is less interference. As a result of the test, it has been decided that 350 meters is the most practicable wave for them to use. The 109 set was used in this test. In a later test, Bolling Field changed its wave to 750 meters, which makes reception of signals much easier, eliminating much of the interference made by ships in Hampton Roads.

At the request of the Air Mail Station at College Park, Md., this station is furnishing local weather reports twice daily. They report the successful reception of the same.

A report was published in "QST", the foremost Radio Amateur magazine in America, showing that CW signals from this station have been received with good intensity by the Canadian Station 3FE located at Napanee, Ontario.

Panama

Successful results with radiophones were obtained in a series of problems for the observation of fire for the coast defenses of Cristobal. Excellent one way communication was maintained throughout the majority of problems. As a preliminary to the firing of these problems an officer from each of the defenses firing was detailed at France Field for a short period of instruction. Many difficulties were encountered by both the Air Service and the Coast Artillery and practical demonstrations were given as to just how communication should be handled.

Development

A central power plant is being developed with the generator directly connected to the engine. The results of test show that it is satisfactory as a source of electrical power for radio transmitting sets, but with the present apparatus cannot be used as a source of power for radio receiving sets. Until suitable apparatus is developed, a small storage battery will be used for the radio receiver.

DEATH OF LIEUT. GUENTHER IN GERMANY

On July 27th a cablegram was received from the Commanding General of the American Forces in Germany reporting the death of Lieut. Karl D. Guenther, Air Service, as the result of an airplane crash at Weissenthurm, due to motor trouble.

Lieut. Guenther was one of the best cross country pilots in the Air Service and an excellent engineer officer as well, his work at McCook Field receiving high commendation from the Chief of the Engineering Division.

Lieut. Guenther was born in Frankfort, Indiana, on April 25, 1889. He received his education in that State, and graduated from the Wabash College, Crawfordsville, Ind., in 1911. Prior to joining the army he was a school instructor for four years, and for two years he was principal of the Wm. Warren School in Indiana, which he helped to organize.

Entering the military service on November 20, 1917, he was sent to Camp Lewis, Washington. On December 19, 1917, he was transferred from the Infantry to the Aviation Section, Signal Corps, reporting at Kelly Field on December 26th. He entered the Ground School at Austin, Texas on February 19, 1918, graduated therefrom April 20, 1918, and was sent to Camp Dick, Dallas, Texas, on April 26th. On June 5th he entered the flying school at Chanute Field, Rantoul, Ill., where he passed his R.M.A. test, and was commissioned a 2nd Lieut., Air Service, on August 30, 1918. On September 16th he was sent to the Instructors School at Brooks Field, San Antonio, Texas, from which he graduated on October 28, 1918, whereupon he was ordered to Taylor Field, Montgomery, Ala., for duty.

On May 15, 1919, he was transferred to the Engineering Division of the Air Service at McCook Field, Dayton, Ohio, and in view of his considerable experience in cross country flying he was assigned to duty with the All American Pathfinders Recruiting and Mapping Expedition on its transcontinental tour. During this tour he was the victim of a number of airplane crashes, but fortunately escaped serious injury. While at McCook Field he had over 400 hours in the air in seven different types of ships.

Lieut. Guenther was commissioned a 2nd Lieutenant in the Regular Army on July 1, 1920, and immediately promoted to 1st Lieutenant. In September, 1920, he was assigned for duty with the American Forces in Germany, and left New York for this duty on October 5th. On March 14th, while piloting a DH4B at Weissen-thurm the motor backfired and his plane caught fire in the air, turning turtle in landing. He miraculously escaped injury. Unhappily, his good fortune deserted him on his last crash, and the Air Service thereby lost a valuable officer, an excellent pilot, and a man who proved himself a credit to the Army in every way.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England.

A new commercial monoplane will shortly be used on the London-Paris service. This machine, designed by DeHaviland, will have accommodations for 8 passengers, and a 450 h.p. Napier engine will give it a speed of about 130 miles per hour.

Arrangements have been made whereby certain post offices in London and some of the more important towns in the provinces are prepared to receive daily parcels intended for dispatch by airplane to Paris. An airplane will leave the Croydon airdrome daily at 10:30 A.M. and will reach Paris about 2½ hours later. Under present arrangements several days usually elapse between the dispatch of a parcel from London and its delivery in Paris.

France.

The French Minister of War has just published a statement of the casualties of military aviation in the first five months of this year. From January 1 to May 31, 1921, 35 airmen were killed and 34 injured. These figures do not include airmen killed or wounded by the enemy in the Levant or Morocco. Nineteen of the accidents are described as being due to "pilot's error".

Belgium.

Belgian airmen have formed a committee under the patronage of King Albert with the object of erecting a monument on Belgian soil to the famous French "Ace of Aces" Guynemer who was killed in the later stages of the war.

Egypt.

Direct aerial communication between Egypt and Mesopotamia is now established. Three airplanes having left Bagdad at 04.30 on June 30 with three stops, reaching Cairo at 19:45 the same day. In the other direction there has been an even better flight, for Air Vice-Marshal Sir G. Salmond left Heliopolis at dawn on July 9th, and with two stops for refueling landed in Bagdad 12 hours later. The aerial route via Amman and Ramadi to Bagdad, which the Middle East Air Force has been surveying for some time, may now be considered open. This renders unnecessary any further British traffic by way of the Damascus-Palmyra-Abu Kemal route which has hitherto been followed. The possibilities of this new route are indicated by the fact that Sir G. Salmond took with him official correspondence which was delivered in Bagdad the same day instead of a month later, as has hitherto been necessary.

Australia.

Details of the arrangements for a trial contract for an aeroplane service, including the carriage of mails, from Geraldton to Derby (W.A.), a distance of 1,195 miles, were recently announced by the Minister of Defence. Tenders will be invited from private firms. There will be one trip each way every week, and persons employed must be enrolled and remain as members of the Australian Air Force. The service is to commence about October 29, 1921, or on such subsequent date as may be approved. A ground survey of the route has been arranged.

SQUADRON NEWS

8th Airship Company, Camp Biene, El Paso, Texas, July 24.

This Company has been reduced to less than one-half of its former strength by the discharge of 65 men on account of reduction of the Army. A number of the best men in the company took advantage of the opportunity afforded to sever their connection with the service, after making sure of their future plans and securing satisfactory positions in civil life.

The Company gave a farewell picnic and outing to its members who were discharged recently. This outing was a very pleasant event and was held on the banks of the Rio Grande near Canutillo, N.M. on July 16th. Fishing, swimming races in the stream, athletic games, etc., with plenty of ice cream, watermelons and other good eats composed the program of the day, which will always be remembered with much pleasure by all who participated.

Carlstrom Field, Arcadia, Fla., July 30.

On Thursday, July 21st, a big celebration was held in Wauchula, when the Commercial Club of that place entertained the Florida State Swine Growers Association. Carlstrom Field played an important part in the success of the day. The Fliers' Band from Carlstrom played throughout the day and furnished the music for a street dance in the evening. The baseball team added to the interest of the day by trimming Zolfo 12 to 2. Three planes piloted by Major Royce, Lieut. Williams and Lieut. Claude transported part of the ball team to Wauchula, an added feature to the events of the day.

The Business Men's Association of Arcadia held a get-together picnic at Boca Grande on Thursday, July 28th, and duties were suspended at the field in order that the men might attend. The Fliers' Band provided music, and the baseball team journeyed to Boca Grande expecting to win further laurels in a contest with Wauchula, but due to a slip somewhere no diamond was available and the game had to be called off.

The "ole" swimming hole, which has been fixed up by the E & R Department with the assistance of others has proved to be one of the most attractive features of camp recreation. Crowds of officers and soldiers have been wending their way in that direction, also many of the fair sex.

Lieutenant and Mrs. Arthur I. Ennis gave a dinner and dance in honor of Mrs. James Ennis and Miss Marjorie Ennis. Many officers and ladies of the field were present, including Major and Mrs. Ralph Royce.

Lieutenant Carl H. Barrett, who mysteriously disappeared Saturday, July 23rd, has come back to our midst with the request that the name of his beneficiary be changed. This is a considerable surprise to everyone.

Captain L. E. Appleby, Assistant Air Officer, Fourth Corps Area, is at present paying Carlstrom Field a visit for the purpose of finishing his test in connection with re-rating as Airplane pilot.

1st Lieuts. George C. Tinsley and Harold A. Packard, who were injured in an automobile accident on July 4th, are recovering from their injuries in the Orange General Hospital of Orlando, Fla. It is expected they will continue their pilot training to a completion in the next class.

Lieut. Oliver A. Gottschalk, who was seriously injured in an airplane crash on July 4th, is improving rapidly.

Major Thomas E. Harwood, Medical Corps, post surgeon, has been ordered to Carlisle Barracks, Tenn.

Captain Alfred M. Bidwell, Medical Corps, reported at this station and has been assigned to the post hospital for duty.

Lieut. Kwei Tsiang, Chinese Navy, who has been under the care of the surgeon, has recovered from his burns which he received when his plane crashed on July 7th, and is back on flying status little the worse for his experience.

Captain Clinton F. Woolsey has been granted two months' and fifteen days' leave for the purpose of visiting Mrs. Woolsey's parents in Belgium.

The last two weeks have been rather uneventful, as the previous class completed its training July 15th and is at present awaiting orders. The training of the new class will commence on Monday, August 1st.

Carlstrom Field, Arcadia, Fla., July 30, Cont'd.

The funeral of the late Lieutenant Willard S. Clark, who was killed in an airplane accident at Ellington Field, Texas, was held at DeLand, Florida, on Friday, July 22d. Funeral services were held by Chaplain Maurice W. Reynolds, and the pallbearers were 1st Lieutenants John D. Corkille, John G. Williams, Russell C. McDonald, Charles C. Chauncey, Stanley M. Umstead and Lowell W. Tassett. Captain Clinton F. Woolsey and Lieut. Hez McClellan flew over the procession in a D.H. 4. Lieutenant Clark was formerly on duty at Carlstrom Field for about two years and held many responsible positions, including that of Commandant of Cadets. The personnel of this field extend most sincere sympathy to Mrs. Clark and family.

The following officers of the Marine Corps, under the command of Captain Ralph Mitchell, have reported at this station for a course in land planes: Captain Harvey H. Shepherd and 1st Lieuts. Walter G. Farrell, Earle M. Randall and Ivan W. Miller.

The following officers have reported for the class beginning August 1st:

Major Floyd C. Hecox, A.S. (Inf.)	1st Lt. Aubrey C. Strickland, A.S. (Inf.)
Capt. Richard Derby, A.S. (C.A.C.)	1st Lt. John D. Barrigar, A.S. (F.A.)
Capt. Ray M. House, A.S. (Inf.)	1st Lt. Walter R. Peck, A.S. (Inf.)
Capt. Earl H. DeFord, A.S. (Cav.)	1st Lt. Merwyn C. Randall, A.S.
Capt. Richard H. Ballard, A.S. (Cav.)	1st Lt. Edward G. Schracler, A.S. (C.E.)
1st Lt. Harry S. Fuller, A.S. (QMC)	1st Lt. Eugene L. Vidal, A.S. (C.E.)

In this group there are several football and baseball players who will help to strengthen the post teams. Prospects look good for another State championship team, as several well known football men have been secured.

As a result of the recent discharge order, 129 men have been discharged from Carlstrom Field, including six from the Medical Corps and one from the Quartermaster Corps.

Captains Christopher W. Ford and Charles R. Rust and 1st Lieutenants Julian B. Haddon, Fred Woodward, Laurens Claude, Victor H. Strahm, William H. Bleakley, Willard S. Wade and Wendell B. McCoy left Carlstrom Field on Friday, July 22nd, for the Montgomery Air Intermediate Depot for the purpose of ferrying nine DH4B airplanes to be used in transformation work with the next class of students at this field. Seven ships returned Wednesday, July 27th, leaving Lieuts. McCoy and Wade at Pablo Beach on account of minor motor troubles, they returning safely on Friday, July 29th. The entire flight of over 600 miles was completed in seven hours and forty-five minutes flying time.

Mather Field, Sacramento, Calif., July 23.

Captain L. M. Field, Flight Surgeon and Mrs. Field; 1st Lieut. A.G. Liggett and Mrs. Liggett and Miss M. V. Handerson are spending the week end at the Rest Camp which was recently established on Gold Lake, near Balirsden, Plumas County, California.

Major H. H. Arnold, Air Officer of the 9th Corps Area, arrived at Mather Field by plane from San Francisco on the 19th, and left by auto for the Air Service Rest Camp.

Major Gilkenson, pilot, and Captain Durrsmith, passenger, arrived from Crissy Field by plane on the 19th, returning the same afternoon. Major Gilkenson is en route for a detail in the Philippine Islands.

Under instructions received governing the reduction of the Army, 247 of the 476 enlisted men assigned and attached to Mather Field have submitted applications for discharge.

Due to the present shortage of gasoline at this field and sub-stations, forest patrols were suspended on July 23rd. Enough gasoline has been held in reserve to allow a few patrols to be flown in case of emergency, but regular patrols will not be resumed until shipment of gas is received.

Captain Lowell H. Smith, C.O. of the 91st Squadron, and an enlisted mechanic, arrived from Eugene, Oregon, on the 18th by plane, for a conference regarding forest patrol activities. He returned to Eugene on the 20th.

Hqs. Detachment, 91st Squadron, Medford, Oregon, July 23rd.

Reduction of squadron strength will necessitate the return of this detachment to its organization at Eugene, Oregon, in the near future. This station will be continued as a radio station and supply station for gas and oil only, the forest patrols being carried on the same schedule from Eugene.

Ross Field, Arcadia, California, July 25.

Wednesday, July 20th, was a real free balloon red letter day for the U.S. Army Balloon School. Three balloons were sent from this station and nightfall saw nine new qualified pilots tucking away the big gas bags into their respective containers. A total of ten flights were made under the direction of the following instructors: Captain L. F. Stone, 1st Lieut. J. T. Neely, and 1st Lieut. C. H. Welch. To date the following officers have received their training as free balloon pilots; Major J. D. Reardan, Major M. F. Davis, Captain H. C. White, Captain H. V. Hopkins, Captain E. P. Sorensen, Captain E. W. Hill, Captain G. Haddock, 1st Lieut. J. P. Powell, 1st Lieut. W. S. Schofield, 1st Lieut. A. J. Etheridge, 1st Lieut. W. Flood, 1st Lieut. W. D. Williams, 1st Lieut. A. I. Puryear, 1st Lieut. G. Cressey, 1st Lieut. H. McCormick, and 1st Lieut. H. Montgomery.

The interest of the officers at this field is centered on the probability of the Balloon School being enlarged to give airship training. Board Proceedings covering recommendations for the course of instruction have been mailed to Washington, and it is expected that something definite will be known of this activity as soon as the Chief of Air Service looks over the work of this Board. The Board of Officers was composed of Major R. M. Jones, President; Captain L. F. Stone; 1st Lieut. W. M. Clare; and 1st Lieut. Bruce N. Martin. In the absence of Major Jones who has left for Washington, Captain L. F. Stone now becomes President of the Board. The Board is now occupied with the preparation of an outline for a course of instruction for enlisted specialists of the Balloon Company. Although it is yet early to announce just what the scope of the new course will be, it is probable that a minimum of six months will be necessary before a student is qualified as an enlisted specialist. The Post is looking forward to the reception of a large airship as a starter for the work of the airship training. In order to take advantage of the present amount of the time and study put into the balloon game by the officers now taking the Balloon Observers' Course, it is planned to have a student take four additional weeks of ground instruction, when he will be ready to enter upon the air course with the airship. Airship pilots are few and far between in the United States to-day, thus one who obtains a rating as an airship pilot will have reason to feel somewhat proud of himself as well as know that such a rating from a school of the calibre of the United States Army Balloon School will stand in the minds of aeronauts in much the same fashion that a degree from Boston Tech. stands in the minds of the Scientific world.

Wednesday afternoon, July 27th, will probably see much joy and a corresponding amount of grief on the part of the Post and School Officers. A dire threat to "lick 'em" has gone forth from the School to the Post Personnel contained in a challenge to a trap shoot, tennis meet, and bowling. Many clay birds will probably die on the eventful day, while just as many will also probably live until a later time. Tennis balls will whiz over the net and Babe Ruth stunts with the sphere will undoubtedly be a popular pastime. The tennis team Captains are asserting their respective prowesses, but that is something that time alone can spell the merit of.

Under the progressive encouragement of the Commanding Officer, Colonel T. Baldwin, Jr., athletics and regulated recreation has assumed a large part in the affairs of the post life. Friendly, healthy rivalry has sprung up between the School and Post Officers. Aside from the keen spirit of competition engendered by the sassy defy received from the School Officers, it is expected that all officers will yet remain on speaking terms after the School has bagged the honors of Wednesday afternoon.

Majors M. F. Davis and J. D. Reardan, A.S., have completed their first weeks' work in the Air with unexcelled visibility at their command and a splendid communication service to tell them what the man at the battery is thinking about. It is expected that both these officers will receive their wings and ratings within the next two weeks. Both Majors Reardan and Davis have scored higher than any student who has yet taken the air course.

In two more weeks the Field Officers' Class, which started their course of instruction on June 20th, will go to the top of Mt. Wilson for ten days of ozone and artillery shoots. This section is composed of Majors J. A. Mars, Archie Be R. B. Lincoln, Robert Coker, and Walter Vautsmaier. This class is now edging

Ross Field, Arcadia, California, July 25, Cont'd.

into the mysteries of Panoramic Perspective Drawing, Aerial photography and work on the big relief map of the School. The relief map, by the way, is the only one of its kind in the United States. It covers the terrain of Belgium, known popularly as the "Kemmel Hill Sector". Thousands of British soldiers paid the supreme sacrifice at this point to hold this position from the grasp of the Germans. It was taken and retaken, but finally "Heinie" was forced to admit that he was not quite the man to hold it. The present classes of student officers are, of course, enabled to hold this ground in a more peaceable manner than were the Tommies in the dark years of the World War.

The junior officers, who commenced the course of instruction on May 16th, will enter the balloon basket for their air course some time within the next two weeks. Following their excellent preparation at the Mt. Wilson Camp, it is expected that this section of officers will have a high average for their air work. All are intensely interested in the coming air test, since this phase of the course represents the pinnacle of many hard weeks of effort.

Major Roy M. Jones and wife left Wednesday for Washington, where Major Jones will take up his new duties in the Office of the Chief of Air Service. Major and Mrs. Jones leave many friends who regret this departure.

Many of the officers from this post with their wives and friends took advantage of the Aviation Meet held by the Elks at the Speedway and enjoyed the activities, in which the Blimp from this School participated.

1st Lieut. Bruce N. Martin leaves on August 1st for a 20-day leave of absence. He expects to tour Northern California, making San Francisco his headquarters during his leave.

Mrs. Puryear, mother of Lieut. Alfred I. Puryear, arrived during the past week from Tennessee, and expects to remain in California for the remainder of Lieut. Puryear's course of instruction.

Friday evening the Officers Club gave an informal dance at the Santa Anita Officers and Enlisted Men's Club. The Club-house was beautifully decorated for the occasion, and a most enjoyable time was had.

Headquarters Detachment, Fourth Group (Observation)
Paranaque Beach, Manila, P.I., June 11, 1921.

The Philippine Department has issued a training memorandum for all Air Service units in the Islands. The memorandum outlines a course of training to be followed from June 1, 1921 to October 31, 1921. The program covers five hours instruction per day, five days per week, a variety of subjects, pertaining to Air Service work, being included in the course.

A few heavy rains have put the flying field in excellent condition, the soil being a sandy loam. The grass is kept neatly trimmed by a herd of native cariboas, which are turned on the field after their days work is done.

The two pilots of the Detachment made nineteen flights during the week.

2nd Squadron (Obs) Fort Mills, P.I., June 11, 1921.

Lieutenant J. P. Richter left the early part of this week on a leave of absence to China. He is making the trip aboard the U.S.S. Destroyer "HART".

Captain Edwards and Lieutenant Bettis and Baez who recently arrived from the States aboard the "Thomas" have been assigned to the Second Squadron for duty.

The pistol range has been turned over for the use of the Second Squadron, and each day a number of men are selected to take the preliminary firing practice. Those qualifying in the preliminary practice will be allowed to shoot for record at a later date.

Observation was made and sensings reported by radio of a mobile Artillery Firing Practice held here this week. The Los Cochos Islands, located off the shores of Mariveles Harbor, were used as targets. Exceptionally good communication was had between plane and ground stations. All sensings were recorded and found without error by a later check made by the Observer. Similar observations were to have been made on subsequent days but due to a heavy sea the launching of the planes was impractical.

17th Balloon Company, Fort Mills, P.I., June 11.

On June 7th this Company regulated the fire of a battery of 155's, Mobile Artillery, located at Fort Mills. This is the first time since the company has been in this department that there has been any adjustment on stationary targets. The highest altitude attained by the balloon during the adjustment was twenty-four hundred feet. Adjustment was made for the same battery the following day, but a low haze, common here during the rainy season, made it impossible for the observers to see the target from the balloon.

The Seventeenth Balloon Company has been awarded the "General Efficiency Guidon" for the month of May for having the best inspections during the month.

Indoor baseball and horseshoe tournaments are becoming quite popular with the men of the Company. A number of games have been played with the other organizations of the Garrison which proved to be quite exciting and interesting.

The men have been busy for the past month learning the art of shooting the army rifle, preparatory to going on the range. Men were sent to the pits to man the targets this week. All the members of this company are looking forward to the practice with big expectations, this being their first time on the range since the company has been organized.

Clark Field, Pampanga, P.I., June 12th.

Lieutenant Charles L. Webber of the 11th Air Park had an interesting flight on June 8th. Accompanied by Major Mortenson, Infantry, he left Clark Field in a DH4 at 8:00 a.m., and climbed to 5,000 feet before crossing the mountains. He circled over Mount Pinatubo, which it is stated has never been climbed by a white man, and reports Negrito villages on the sides and likewise on the top. His altimeter showed a trifle more than 5100 feet as he barely skimmed the dense growth on top of the mountain. The coast was picked up at Olongapo, from whence he traveled along Luzon to Balingasag Point and Lingayen. After flying about over the Hundred Islands in the Lingayen Gulf, the ship returned to the field at 10:40 p.m. Lieut. Webber reports two large lumber camps at Masinloc, also a field which could be used in an emergency for landing. He also reports the coast quite rugged but with frequent sandy beached coves that could be used for landing. More than half the time he flew over unsurveyed regions of dense tropical growth. He states that in the region over which he flew there are very few places where a plane could land with any degree of safety, save on the beaches.

Fairfield Air Intermediate Depot (Wilbur Wright Field) Aug. 1.

Major Geo. E. A. Reinburg, Commanding Officer of this Depot, is at present on an inspection trip to Chanute Field, Rantoul, Ill., for the purpose of informing himself as to the Air Service property on hand at that station.

Mrs. George E. A. Reinburg with her sons George Reinburg and Hunter Reinburg, is visiting her father, Chaplain Hunter, at Camp Grant, Ill.

Annual leaves being the order of the day, various officers of this station are preparing to go fishing and engage in other vacation activities as rapidly as they can be spared from their duties.

The Engineering Department is enlarging its plating-room, machine shop, and final assembly by adding sections of hangars to the buildings.

First Lieut. Gerald E. Ballard took off July 23rd in a DH Hospital Ship for a solo flight to Kelly Field, Texas. Another one, after some changes, will follow soon.

Three DH4B's, completely equipped with radio, were ferried to Camp Knox, and four more to Chanute Field. These ships were built with many changes throughout, and are the first of their kind. Everyone who has flown them is enthusiastic over them, and it has been recommended that they be called the "F.A.I.D." type.

Fokkers for the Philippines are nearing completion. They have a new design of gas tank and separate oil tanks. A large number of quantity production orders for nuts, bolts, wrenches, motor parts, and tools have been completed. There are still a large number of quantity production orders, but they are nearing completion.

Fairfield Air Intermediate Depot (Wilbur Wright Field) Aug. 1, Cont'd.

The Radio Department is installing a 5-K.W. set for radio direction finding and communication with other posts. Fifty radio phone helmets are completed and ready for shipment, also 250 SCR-73A sets are completed and awaiting shipment. Parts for 1700 sets have been completed and sent to the Supply Department.

First Lieut. George V. McPike, in addition to his duties as Utilities Officer and Quartermaster, found time to rebuild an SE-5, and has tested it himself. Three other SE-5's have been flight-tested, one of them to be ferried to Selfridge Field and two to Chanute Field.

Hqrs. Flight B, 91st Squadron, Camp Lewis, Wash., July 23.

Flying Cadet Charles W. Hillman gave an hour's lecture on the theory of flight, airplane construction, and the work of the Air Service, both in peace and war, before the Citizens' Military Training Camp on Thursday of this week. Immediately following the lecture, a 20-minute demonstration flight was given by Staff Sergeant Cecil B. Guile.

A new aerial station has been erected at the Forks patrol stop, and that station is now able to hear the patrol plane during the entire line of flight, under favorable conditions.

Hqrs. 91st Squadron, Municipal Flying Field, Eugene, Oregon, July 23.

The Medford Forest Patrol Base of this command is now under orders to move their personnel and property to Eugene, and the former base will hereafter be used as a gas and radio station. The same patrols will be flown, but from this station.

Fifty-one fires were reported last week, which is the record so far this summer, and as the season advances a still greater number is expected to be recorded. With radio working almost to perfection at all bases, if sufficient gas and oil is supplied to keep the ships in action, it will be possible to prevent fires from assuming large proportions.

Captain L. H. Smith and Private Winters made a cross-country trip last week to San Francisco, via Mather Field and Medford, for the purpose of conferring with Major Arnold, Air Officer of the 9th Corps Area, concerning routine matters of forest patrol. They returned Friday; total flying time 10½ hours.

It is contemplated to move forest patrol activities from the Municipal Flying Field, in Portland, Oregon, to a new field recently completed at Vancouver Barracks, Washington. If this latter field proves satisfactory, patrols will be operated from that base instead of Portland.

Last Sunday the 91st played the "Coyotes", a fast team east of town, and took them into camp by the score of 3 to 2 in an eleven inning contest of high class baseball. This is the fourth of a series of extra inning struggles in which the squadron team has come out on top.



The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE AUGUST 25, 1921.

FOREST FIRE PATROL WORK

What the Air Service is accomplishing along the line of forest fire patrol work and the method of operation is partly shown by the following outline of the work carried on during the months of May, June and July by Flight B of the 12th Observation Squadron, the headquarters of which is at Nogales, Arizona:

Geographical survey maps marked off into coordinate sections were used; on spotting the fire the observer communicated with the nearest radio station. Radio stations were located at Tucson and Nogales landing fields. In making the radio report the following method was used.

- (a) Station call, three times.
- (b) Key letter for route and observer.
- (c) Fire - FFF
- (d) Old fire - O. New fire - N.
- (e) Location by coordinates.

The maps were coordinated into five mile squares, which were further subdivided into one mile squares. In reporting a fire its location in the five mile block was first given as, for example, I-K. It was further located in the one mile square by the additional coordinates of the one mile square in which the fire was located. The one mile squares were divided usually into four quarters. The upper left hand corner numbered 1; the upper right hand corner 2; the lower right hand corner 4; and the lower left hand corner 3; thus placing the fire within one quarter of a mile of its location. A typical location might be "7 K 3 A 2". This would locate a fire in the five mile block, 7 K; in the one mile block 3 A, and in the upper right hand quarter mile section. The system of coordinating was a very simple one, as follows: each five mile block was numbered from left to right and lettered with capital letters from top to bottom, the one mile squares were similarly numbered from left to right and lettered from top to bottom with small letters.

- (f) Area in acres - A15 (fifteen acres) AS (less than one acre.)
- (g) Cover - CT (Timber)
CB (Brush)
CO (Open)
CX (Burned or cut over)
- (h) Slope - SL (Level)
SG (Gentle)
SS (Steep)

Report on slope was followed by direction letter, N.S.E.W. Thus a typical report under (h) would be "S G N", indicating sloping gently to the north.

(i) Ground wind velocity and direction as, for example, "15 N" would indicate north wind of 15 miles per hour. If there was no wind the observer reported "No." under (i). Thus a typical fire report would be "ZD, ZD, ZD, XY, FFF N, 7K 3B1, AS, CB, SGS, 15N."

Immediately upon receiving the radio report, the operator relayed the report to Forestry Headquarters by telephone.

The observer made record of all information sent by radio and turned this information in at the radio station immediately upon landing. This information was telephoned to Forestry Headquarters to act as a check on the radio communication. The observer while patrolling, if there are no fires to report, nevertheless communicated with the radio station every ten minutes as follows:

- (a) Station call repeated three times.
- (b) Key letter for route and observer.
- (c) RAS - signifying nothing to report.

The observer was required to check out with the radio station by a system of panels before leaving the vicinity of the airdrome to insure that his radio set was properly functioning. For this purpose each observer has a key letter, also a key letter for the route he is patrolling and a corresponding panel for key letter.

A coordinated map is kept in the flight operations room. All forest fires were marked on the map. Active fires known and located were marked with red-headed pins, old fires extinguished were marked with black-headed pins. New fires discovered by the observer and not notified by Foresters were marked with yellow-headed pins. The pilot and observer were required to report to the operations room and carefully study the map, verify the location of all fires on their maps, and receive such other information and instructions that might pertain to the day's patrol. Immediately upon landing the pilot and observer again proceed to the operations room, reporting all information they have gained.

During the time of this patrol Forestry officials were permitted to ride over the forest areas patrolled, in order to assist them in fighting fires. In each case the Forestry officials were required to apply in writing to the camp commander. The usual release form was used in every case, and a report of each such flight made with the name of the Forestry official, was submitted to Corps Area Headquarters.

FLYING VERY POPULAR IN ENGLAND

Taking flights in airplanes in Great Britain appears to be no more thought of than taking a ride in an automobile or a street car. Messrs. J.V. Holmes and O.R. Jones, two veterans of the World War, in charge of an Avro airplane, have visited various towns and cities in England and Scotland, and judging from the large number of people they have taken up for flights they are doing a land office business and will soon be rolling in wealth. At Dumfries, the first place visited in Scotland, no fewer than 1,050 persons went up in the ten days of their visit. At Annan where they stayed five days 400 people took flights, and at Lanimer 300 people sailed heavenwards for a brief space. Upwards of 15,000 people have been taken up at one time and another by these airmen, and no untoward mishap has occurred.

TRANSATLANTIC FLYING SHIPS

According to the London "Daily Mail" the Fairey Company, builders for the British Air Ministry of the great Titania flying boats, have in hand plans for giant Transatlantic flying ships, driven by specially designed 4,000 horse-power engines, which will have luxurious accommodation for as many as 100 passengers, in addition to fuel, crew, and stores. They will, in fact, be air liners, with great hulls which, seen without their wings, one might mistake for some specially designed craft for use on the surface of the water. Starting from the lower reaches of the Thames, such vessels will be able to make a non-stop flight to New York in very little more than 40 hours; while calculations which have just been made show that with a sufficient fleet, well patronized, the fare by flying ship should be little, if any, more than by steamship. Conditions in the flying ships will approximate almost exactly to those of first-class steamship travel. Guided on their course by directional wireless, informed in advance of weather changes, and with a motive plant which is practically immune from the risk of breakdown, they will offer not only speed and comfort but also safety.

TO FORT NORMAN AT EXPRESS SPEED

The Imperial Oil Company of Canada has adopted up-to-date methods in "beating others to it" to the oil fields in the vicinity of Fort Norman. A party of four, consisting of the pilot, mechanic, a surveyor and a geologist, flying over miles upon miles of untenanted and practically unexplored sub-arctic lands, recently made a journey in a J.L. 6 all-metal airplane owned by this company, from Peace River, Alberta, to Fort Norman, Mackenzie River District, N.W.T., a distance of approximately 1400 miles by river and lake, in 13 hours and 40 minutes actual flying time. The machine flew on the average around 80 miles an hour,

although on occasions with wind on her tail it made bursts of speed reaching to 100 miles per hour. When the aircraft began approaching the foothills of the Rocky Mountains which run down to the Mackenzie River at the mouth of the Nehami, the scenery from aloft was impressive beyond description. Prior to this a snow storm was encountered at Wrigley Harbor, but the plane shot through it without pausing. The tributaries of the Mackenzie River, winding away up into their sources in the mountains, thousands of lakes large and small, and streams were spread out before the vision of the airmen like a map.

By the time the site of Old Fort Norman was reached the plane was flying at an altitude of 4,000 feet, and through the clear atmosphere could be seen the ice shining on the surface of Great Bear Lake, 75 miles to the northeast, and the gorge of the Great Bear River through the Franklin Mountains.

One notable feature of the journey was the making of a forced landing between the far North Forts of Simpson and Wrigley on the surface of the Mackenzie River. The only one around to help the crew in departing was an Indian who had been attracted by the descent of the great bird. It would be difficult to imagine the amazement of this aborigine at seeing this plane hurtling down the river and then rising aloft into the air again.

On landing at Fort Norman the machine crashed, shattering one of its pontoons and one wing. This accident, it was explained, was due to the extremely smooth and mirror-like surface of the water, which made it impossible to calculate accurately the height of the machine above the river.

The surveyor and geologist, immediately upon landing, proceeded with a party of men to stake claims.

NEW SOUTH AMERICAN ALTITUDE MARK

Eduardo Olivero, an Argentine airman, who served in the Italian Army during the war where he attained the rank of Captain and won five medals, has just set a new South American flying record for altitude by attaining a height of 26,240 feet. He may have gone higher, for 8,000 meters was the most the instrument would register, and Olivero lost consciousness for some time on reaching this height. The record height was reached in one hour and fifteen minutes. The flight was made in exceptionally cold weather.

AIR MEET IN COLORADO

Colorado's first aero meet was held by the Colorado Aero Club July 30, 31st, August 1st and 2nd, on the Curtiss-Humphreys Field at Denver. The meet was a distinct success, the attendance being close to three hundred thousand. There were presented eight cups and \$2,500 in cash prizes. Almost every type of plane manufactured in America was represented. The Laird Swallow, piloted by "Buck" Weaver, proved to be the most popular ship on the drome, its performance being a revelation. The tone of the meet throughout was safety. Stunting, when performed, usually prevailed at a safe altitude.

A banquet was held at the Brown Palace Hotel on August 1st, Mr. C.A. Johnson, president of the Colorado Aero Club, presiding.

AERIAL REGULATION OF HEAVY FIELD ARTILLERY FIRE

The U.S. Army Balloon School at Lee Hall, Va., adjoins Camp Eustis, the home of the Heavy Railroad Artillery, and as considerable firing was done this summer, the observers had excellent practice in regulating the shots. Whenever the weather permitted, the balloon was in ascension, although owing to the shortage of personnel it was necessary to call the cooks from the kitchen, and get out every other available man on the ropes, and it was only when lightning appeared that the balloon was hauled down.

The artillerymen had a number of ground O.P.'s in tall towers for terrestrial observation, and employed the usual method of having observers report the impact on the Observation-Target Line. The balloon was about nine kilometers from the target, and invariably gave readings on the Battery-Target Line, though

on several occasions the angle between Balloon-Target and Battery-Target was large. During the course of a shoot, the balloon was frequently complimented by the battery on the accuracy of the observations, as the greater height of the Observer's Position enable the actual point of impact to be reported.

At the various artillery critiques following the shoots, the accuracy of balloon observation was brought out, and that from the balloon observations alone the guns are regulated efficiently. The results were very gratifying, as it was recognized that in the presence of an enemy ground observation would be difficult and often impossible, especially for the Railroad Artillery, firing at long ranges. Under these conditions, balloons are of immense assistance. The cost of firing 8" and 12" guns from railroad mounts is very large, and accurate fire, regulated from actual observation of the effect of the fire, is a necessity.

The growing importance of heavy artillery has increased the necessity for aerial observation. Before the war, only a few 8" guns were mounted on railroad mounts, but now all sizes up to 14" are mobile. It is expected in the future that most of the counter-battery work will be done by railroad guns.

In the last two months the observers at Lee Hall have regulated about 1,000 3" shots, 200 8", and 200 12" mortar. The balloon is especially valuable for calibrating a piece, as very accurate observation is essential. Also the use of the balloon demonstrates in the regulation of several batteries at once the rapidity with which observation may be reported by direct telephone communication furnished by the balloon.

The cooperation between the artillery and the balloon was excellent, and in this connection the following letter from the Commanding Officer of the 42nd Regiment, Coast Artillery Corps, is quoted:

HEADQUARTERS FORTY SECOND ARTILLERY,
Camp Eustis, Va., June 10, 1921.

From: The Commanding Officer.
To: The Commanding Officer, Balloon School, Lee Hall, Va.
Subject: Balloon Observation of 3" Gun Practice.

1. Having completed the three-inch gun practice, it is my desire to express to you my appreciation of the cooperation and results obtained by the balloon observations made by your command during our practice.

2. The data was invariably correct and checked without terrestrial observation.

3. I wish to mention the following officers of your command who took especial interest in this observation and who were at various times in the basket sending data:

1st Lieut. Clarence B. Lober
1st Lieut. Clyde Kuntz
1st Lieut. William H. Carthy
1st Lieut. Frederick W. Evans
1st Lieut. Dache M. Reeves
1st Lieut. Ira Koenig
1st Lieut. M. W. McHugo
1st Lieut. R. S. Heald

(Signed) G. SEVIER,
Lieut. Colonel, C.A.C."

AERONAUTIC POWERPLANT DEVELOPMENT

In the July issue of the "Journal of the Society of Automotive Engineers" appears an interesting paper on the subject of the requirements of aeronautic powerplant development, written by Messrs. G.J. Mead and L.E. Pierce, Aeronautical Engineers with the Wright Aeronautical Corporation of Patterson, N.J. This paper discusses the probable trend of development of aviation engines, showing the reasons for the types which are likely to become more or less standard.

After reviewing the development of the various types of engines and analyzing the effect of their characteristics on airplane performance, the authors, in summarizing the situation, state that we have not reached the limiting size for any type of engine as regards the maximum power available.

No increase in engine performance can be expected unless new materials of construction, new fuels or new cycles of operation are made available. Continued development will refine the practices of the art and result in bettering the life of the engine and the service it renders, rather than its performance. Therefore, increased airplane performance must be secured mainly by improvement in airplane design. Great advance seems to be possible in this direction. One reason for the tremendous powerplants available for airplanes has been the effort to secure performance by brute strength. Absurdities can soon be reached if this trend of development continues. It is certainly worth while to consider what can be done with a reasonable-sized power-unit, by altering the design of the airplane. As shown in the last Pulitzer Race, excessive horsepower is not necessary to secure high speeds. The next few years should see a reduction in the power demanded of pursuit engines.

It is high time that attention be given to a most important problem, the fuel mileage obtainable from a given airplane. It is unquestionably true that the average person could not afford to operate some airplanes, even though he might be able to purchase one, because of the poor mileage secured from a gallon of fuel. This is an essential consideration for commercial work, due to its effect on the profits of an operating company, and should be given study by the military authorities also, on account of the effect it has upon the quantities of fuel required in case of hostilities. This is, to our minds, the best and most obvious reason why the power requirements for aeronautical powerplants should be reduced rather than increased. It is not commercially possible to build so many power units within a given range. Airplane designers must be satisfied with fewer units, if we are to commercialize the business.

It is believed that the effect of engine dimensions on maneuverability is largely overestimated. The reason that popular comment is so often to the effect that the engine is the most important factor is the fact that there is no ready means by which the aerodynamic qualities of the airplane affecting maneuverability can be thoroughly analyzed and visualized. For similar horsepower engine type rather than overall size will have the greatest effect on the parasite drag of the fuselage group. The efficiency of the cooling-element design for water-cooled engines is considerably better than that for air-cooled engines. Between practical limits, the effects on the performance of the airplane of variations in the values of engine weight per horsepower, of cooling efficiency, of fuel economy and of altitude performance of the engine are very pronounced. The demands of super-performance in military designs and greatest operating efficiency in commercial designs will require the development of engine types which are most favorable in these respects. The relative importance of the factors involved is governed by the particular service for which the airplane is designed.

Problems of powerplant installation are centered about the need of a close cooperation between the builders of airplanes and engines. The requirements of each system of installation can be met only by acquiring a correct knowledge of what these requirements are and satisfying them fully. A study of the engine mounting in complete detail, developing the truss system to accommodate all of the engine forces involved, both static and dynamic, is a most important requirement in insuring a successful installation. Simplicity and practicality of design and the suitability of the accessory equipment used are most essential in the development of the several powerplant systems. The development of the complete powerplant installation must be made with a view to permitting the greatest possible degree of service accessibility. Only in such a way can the proper mechanical attention be assured for the powerplant. The fact must not be lost sight of that the industry is in a formative period and for this reason we must expect to spend a tremendous amount of time and money in research. We cannot standardize without the necessary knowledge, and we cannot obtain that knowledge without research.

NEW SYSTEM OF DETERMINING GROUND SPEED OF AN AIRPLANE IN FLIGHT

A mathematical system for determining the ground speed of an airplane during flight, as well as wind direction and velocity at any altitude, which shows considerable promise of proving an interesting and highly useful solution of these heretofore difficult problems in the longer cross-country, photographic, and bombing operations, has recently been evolved by Major Junius W. Jones, A.S.,

who has just completed a series of tests in these subjects incidental to his routine air missions as a student pilot at the Air Service Observation School, Post Field.

The system devolves upon the known geometric relationship between three factors, all of which may be readily determined by the pilot whilst in flight; namely, air speed, drift angle, and time each way between any two nearby points on the ground. An exact mathematical height above the earth, independent of the data given at the moment by the aneroid instrument, may also be determined by the system worked out by Major Jones, and would doubtless prove of great advantage over the altimeter, which is necessarily limited in accuracy by zero orientation at the home landing field, in cases where exact scale photography were to be carried out over distant objectives of varying elevation above sea level, or when, in artillery work the Battery Commander is requested to lay his guns on the plane, the exact altitude of the ship above the designated target forming the base line of triangulation by which accurate range may be determined.

To reduce the application of his system to a practical basis so that the pilot's attention need not be absorbed in calculation, which the inventor modestly admits must lead to realms somewhat abstruse before the integrations employed may be directly applied, Major Jones has resolved all formulae into a single simple chart, consisting of a series of arcs with their intersecting and correlated curves, a photostat copy of which has already been published in practical scale for use in the cockpit. By this chart it is necessary only for the pilot to adapt the simple arithmetical factors of time, airspeed and drift angle to a base line of the chart, which is then followed through its various intersections graphically to obtain the desired information concerning ground speed, wind direction and velocity, compass course, or altitude, etc.

DEATH OF CAPTAIN JOHN McRAE AND LT. FRANCIS W. NUNENMACHER

That the Grim Reaper had exacted his toll from amongst the present student class of this Field was learned on Monday, August first when the plane in which Captain John McRae and Lieutenant Francis W. Nunenmacher took off to carry out an aerial gunnery practice shortly after eleven A.M. failed to return as scheduled, and searching planes which soon landed beside a wrecked DeH4F near the aerial target ranges on the Fort Sill Military Reservation made the sad discovery that both officers had been killed, the condition of the plane indicating that it had struck the ground in a tail spin from an altitude of about 500 feet, the death of both having apparently been instantaneous.

Both the deceased officers were experienced pilots, splendidly efficient soldiers, and gentlemen of such forceful and reserved yet lovable character that the memory of each will live forever in the hearts of each and every member of the present staff and student personnel who have been so closely associated with them as comrades during the advanced training period at this Field.

Captain John McRae of the Air Service received his commission in 1917, shortly after the commencement of the War, after long and faithful service in the rank of Master Signal-Electrician in the Regular Army. He served with distinction as an officer of the United States Air Service in France during the War. He completed primary training as an airplane pilot at March Field, California, and was ordered to Post Field for advanced training in Observation work in April of this year. He is survived by his wife, who was visiting relatives at San Diego, California, at the time of his death, and who is now en route to Fort Sill to accompany the remains of her husband to his paternal home in New York, where interment will be made.

Lieutenant Nunenmacher's service as a soldier of the United States during the recent War included a lengthy tour of duty with the American Expeditionary Force to Siberia, where he was a member of the defensive guard against the Bolshevik bandit forces in the region behind Vladivostok. He later served as an airplane pilot at Mather Field and at March Field, California, being ordered from the latter point to Post Field in January of this year as a student at the Field Artillery School of Fire, Fort Sill, from which he graduated with high honors last April. He is survived by his father and a sister, who reside at Berkeley, California.

Funeral services, in which the entire command participated, were held last Thursday morning in the historic little chapel of the Old Post at Fort Sill,

after which the remains were embarked for Berkeley, California, for interment. A close formation of airplanes from Post Field passed over the station to crop flowers as "last post" was sounded whilst the casket was being placed aboard the train. Lieutenant Francis B. Valentine of Post Field accompanied the remains on the journey to Berkeley.

PREVENTION OF ACCIDENTS TO SPECTATORS

There have been several instances in the past where loss of life has ensued on occasions when airplane exhibitions were given at flying fields, because some of the spectators foolishly ran out into the open field and unfortunately happened to be right in the path of a plane gliding in for a landing or taking off. Children have been the principal offenders in this respect. Thoughtless action of this kind not only endangers the life of the spectator but of the occupant of the plane as well, and several pilots have purposely crashed their machines at great risk to their own safety rather than to hit curious people who had no business to leave the roped off area.

Captain W. C. Ocker, Air Service, offers some timely suggestions with the view to the prevention of accidents to spectators and damage to property during cross country trips. He believes that accidents to spectators can be prevented if pilots would form an organization among the natives in the locality where they have landed, selecting a dozen or more of the prominent citizens, explaining your program, and requesting them to take charge of the crowd and assemble them at a safe place, generally in the vicinity of the trees on the edge of the flying field. These citizens should explain to the visitors or spectators the necessity for keeping clear of the field when the machine takes off and impress them with the fact that the machine would probably return to the starting place in case of motor trouble, or even after flying several miles and developing motor trouble. Captain Ocker states that experience in the past convinces him that it is impossible for an individual to handle and manage a curious crowd of spectators. He has found that the citizens you generally call on to do this work are willing and can perform these duties very efficiently. Children should be assembled and placed under the charge of a number of elderly ladies. If it is necessary for the pilot to leave the machine to secure supplies, some responsible person should be left in charge.

Approaches to the field should be guarded and persons should not be allowed to cross the field, but should be directed by some member of the native organization to walk along the edges of the field, explaining the reason therefor. The same applies to vehicles approaching the field. It has been found that automobiles will drive across the field when a pilot is just ready to take off.

AERONAUTICAL NEWS FROM OTHER COUNTRIES.

England.

Invention of a system of steam propulsion for airships is claimed by Captain W. P. Durtnall, who was a British naval officer during the war, and up to a year ago staff captain in the chief mechanical and electrical engineers' department of the Royal Air Force.

It is maintained that the new system will function at altitudes hitherto unattainable with the ordinary type of internal combustion engine.

The invention is said to do away completely with the ordinary boiler, the steam being generated by means of internal combustion power or heat energy. The superheated steam heat energy is supplied to special steam motors which are reversible and can be controlled from a central control station. Only heavy oil is used as fuel, and it is claimed that the driving machinery can be safely placed inside the frame of the airship instead of in separate gondolas outside, thus bringing about a great reduction in air resistance and consequently reducing the power required for propulsion.

The engines or "steam motors", as Captain Durtnall calls them, are of the double-acting type, requiring no flywheels.

AERONAUTICAL NEWS FROM OTHER COUNTRIES (Cont'd)

Germany.

There is not the slightest doubt that Germany intends by every means in her power to encourage the development of civil aviation. Not only does the German Government take all and every measure possible to develop the movement, but it would seem that the German people are quick to realize and take advantage of the facilities afforded by the numerous aerial services which are being established for the carriage of passengers and mails. So well are the mail services patronized by the public that it has been found necessary to establish a chief aerial post office in Berlin in order to deal with the mass of correspondence which leaves the capital daily in connection with the regular air services which are now running.

France.

It is reported that airplanes are doing useful and most unusual work in France in dealing with the plague of grasshoppers on the Crau Plateau (northwest of Marseilles) which is far more serious than it was last year, crops of all kinds being destroyed over some 100,000 acres. Pilots report breeding grounds and scatter poisoned bran.

Holland.

It is reported that a regular air service is to be inaugurated between London and Amsterdam, with connections to Hamburg, Copenhagen and Berlin, with a fleet of Fokker commercial monoplanes which are now being built in the works of the Fokker Company at Amsterdam. The service will, by means of the interior German lines, connect with all the principal German cities; while the route to Copenhagen will be extended by a seaplane service to connect with Sweden. These Dutch-built machines will be equipped with Siddeley Puma engines, which was the make used by Lieuts. Parer and McIntosh on their flight from London to Australia.

SQUADRON NEWS

Langley Field, Va., August 13.

The Officers' Club was never more attractive than on Saturday evening last, the occasion being the dinner dance given in honor of Colonel and Mrs. Charles H. Danforth, recently arrived at Langley Field, where Colonel Danforth was assigned as commanding officer. The dinner was enlivened by music and dancing, while several special numbers added much to the enjoyment of the occasion. Addresses of welcome for the new commanding officer and his wife were made by General Mitchell and Major Sherman. General Mitchell spoke on the important work being done at Langley Field, dwelling upon the epoch making contribution to military science in the recent successful bombing experiments conducted by airplanes against war vessels, while Major Sherman called attention to the important place of the social life as connected with the serious business of the Field. Colonel Danforth in a few well chosen remarks responded to the addresses of welcome.

Changing his usual mode of travel from Langley Field to Washington, which is by airplane, General Wm. Mitchell, Assistant Chief of Air Service, left for the Capital Thursday morning on board the airship "C-2". Taking the air at 9:15 a.m., the big blimp arrived at Washington before noon. While the "C-2" had made the trip to Washington and return on the day previous, she nevertheless was ready for the cross country flight on Thursday, not a single repair or adjustment being necessary before starting.

Lieut. J. R. Drumm has been relieved from duty with the 14th Squadron and attached to the 96th Squadron for duty.

In addition to his other duties, Lieut. H. J. Martin has been detailed as Morale Officer for the command.

Major and Mrs. Hanley gave a dinner party Wednesday night in honor of Colonel and Mrs. Danforth and Mrs. R. E. Milling. Among those present were Colonel and Mrs. Gillmore, Major and Mrs. Johnson, the Misses Odell and Dixie Milling, and General Mitchell.

Captain and Mrs. Easterbrook entertained a party of eighteen at the Club Thursday in honor of Captain and Mrs. Collins. Mrs. Collins, Captain Easterbrook's sister, was married July 15th at the Church of the Royal Palace, Coblenz, Germany, and has just arrived on the last transport. She will leave shortly for West Point, where Captain Collins will act as instructor.

Lieut. V. S. Miner, who has been on detached service at Carlstrom Field for several months, has returned to Langley Field for duty. He has been detailed as Police Officer for the Field and Judge Advocate of the Special Court Martial of the command.

Colonel and Mrs. W. E. Gillmore, from Washington, were guests of Colonel and Mrs. Danforth for a few days this week.

Captain and Mrs. Lawson have as their guests Mrs. H. Herold, wife of Capt. Herold of March Field, California.

Major Milling entertained Thursday evening with a dinner party at the Club in honor of his mother, Mrs. R. E. Milling, and the Misses Odell and Dixie Milling. Covers were laid for forty.

Captain and Mrs. Voss entertained Monday night at their quarters for Lieut. and Mrs. Bobzien, Lieut. and Mrs. Leland Miller, Mrs. Kirksey and Miss Miller.

Mrs. Fred Place arrived Thursday and is the guest of Mrs. Hodges pending the return of Lieut. Place to Langley Field from Carlstrom Field. Lieut. Place is making the trip from Florida by automobile.

Major Oscar Westover, Chief of the Lighter-than-Air branch of the Air Service, was a visitor at the post this week.

Mrs. Johnson entertained with a tea on Friday afternoon for Mrs. Danforth and Mrs. Milling.

Lieut. and Mrs. Gorton had as their house guest this week Dr. and Mrs. Whitley from Washington.

Miss Peg Brizie, of Chattanooga, was the guest of Lieut. and Mrs. Burt this week.

Miss Hattie Bridges, of Norfolk, was the guest of Lieut. and Mrs. McDuffie this week.

Ross Field, Arcadia, Calif., August 2.

Word was received this week by Major John D. Reardan, A.S., that he has been awarded the decoration of "The Order of the Crown of Italy", by the Italian Government for services rendered them during the war. Major Reardan's friends will be pleased to hear of this deserved recognition, and it is hoped that the presentation of the decoration will take place at this station.

Colonel and Mrs. T. A. Baldwin gave a reception at their home in honor of Major and Mrs. R. M. Jones, Major Jones having been ordered to Washington.

First Lieutenant Clarence P. Kane is enjoying a leave of absence at Laguna Beach. He is accompanied by his wife and three children.

Wednesday afternoon is now devoted to athletics, and teams in trap shooting, bowling and tennis have been formed by the School officers for the purpose of competition with officers of the post. The following team captains have been announced for the School teams: Trap shooting, Major James A. Mars, A. S. Bowling, Major Archie W. Barry, A.S.; Tennis, Captain Laurence F. Stone, A.S.

Work in the School for Balloon Observers is proceeding on schedule. Section 22 (Field Officers) commenced the Air Course on July 18th, and have now successfully reached the half way mark. Sections 23, 24 and 25 are rapidly completing the Ground Course. Sections 23 and 24 will commence the Air Course in two weeks, and Sections 24 and 25 leave next week for the Observation work at Camp Kenard on Mt. Harvard, where they will be stationed for a week. The Free Ballooning for these students has been practically completed. On Wednesday, June 20th, nine students completed their training in Free Ballooning, which is considered to be the record at this school in one day. It is expected that all students will complete their Pilot Training this week and be ready for their Observer's training upon the completion of the Ground Course.

Balloon Company No. 31, Camp Knox, Ky., July 30.

On Saturday, July 23rd, the Field Artillery School held a "Black and White" dance. Week-end guests of Lieut. Farnum were Mr. and Mrs. L. P. Ewald and Miss Penelope Hardy of Louisville, Ky.

On July 25th the company held a scouting expedition through the hills. Considerable interest is being shown by the men in scouting and patrolling.

A Freebooters Polo Team is being formed at Camp Knox and the company has drawn two horses for the purpose of breaking them in in this game.

Balloon Company No. 31, Camp Knox, Ky., August 6.

The Second Company Dance of the summer, scheduled for August 6th, promises to be a larger success than the first one, judging from the interest shown by the men.

Band concerts are being held twice a week in front of the Officers' Club.

For the past week this company has been receiving preliminary instruction in rifle practice prior to going on the range on August 17th for target practice.

The Field Artillery School personnel have been on the range firing the past week. Major Faine, Commandant of the School, and Major Franke, Instructor in Artillery, made several adjustments from the Balloon.

Carlstrom Field, Arcadia, Fla., Aug. 3.

The Elite of Carlstrom Field may be seen daily disporting themselves at the new watering place, Deep Lake, which has become very popular since the completion of the new boardwalk. Lieut. V. H. Strahm is conducting daily classes in "aquitation" and guarantees to get you wet at any rate.

Captain Cates, the new Quartermaster, is in the post hospital nursing a badly poisoned foot, caused by not having taken a drink ten minutes before a rattlesnake bit him. The Captain was walking from his garage to the house when the snake struck his foot, piercing his heavy boot. There are two remedies for this rapid increase of snake bites during the rainy season - either kill all the snakes or -----.

In a hotly contested game from start to finish Carlstrom defeated Wackula on their home diamond on August 2nd by the score 3 to 1. The feature of the game was the hitting of Carlstrom's new first baseman, Lieut. Chapman.

Carlstrom Field, Arcadia, Fla., Aug. 3. Cont'd.

Monday the new training class "took off" with nineteen officers and two cadets on deck.

Among others reporting for "duty and training" were Mrs. Harold E. Sturken and Betty Gay Sturken, wife and daughter of Captain Sturken, the new executive officer. The Sturken family will make their home at 230 South Sumpter Avenue in Arcadia.

Lieut. Tinsley, who suffered severe injuries in an automobile accident on July 2nd, has been brought to the post hospital by airplane and is convalescing nicely. A board of officers has been appointed to investigate this accident and to determine whether or not it was in the line of duty.

Lieut. and Mrs. Ennis gave a dinner party at their home in Arcadia in honor of his mother and sister, who are visiting them from Chicago. Many guests were present, and "a good time was had by all".

Lieut. C. H. Barrett, Air Service, whose entry in the ranks of the Benedicts was announced last week, announced his marriage to Miss Mable Alguire, formerly head nurse at the Arcadia Hospital. The marriage was quietly performed at Bartow, and the honeymoon was spent at Daytona Beach. "A long life and a happy one" is the wish extended to the happy couple.

A total of 101 hours and 5 minutes flying time was performed for the week ending July 28th, Flight "A" being credited with 23 hours and 15 minutes; Flight "B" with 16 hours and 55 minutes and Headquarters Flight with 61 hours and 55 minutes.

Hars. Detachment, 4th Group (Observation) Manila, P.I., June 18.

A tropical rain or two during the week introduced the new arrivals to the rainy season, and at that it was only a mere shower to what will follow during the next two months.

The Headquarters Detachment Baseball Team have a practice game every evening with the native neighboring boys. The latter come over to the field in bare feet and red breeches, but those "Hombres" can surely play ball.

Air Park No. 11 has been added to the list of Air Service units in the Islands. Lieut. Hurd has been placed in command with Lieut. Webber as assistant. Both officers have had engineering experience, Lieut. Hurd coming from the Repair Depot at Dallas, Texas. The personnel of Air Park Unit No. 11 will be transferred from the Engineering Departments of the 2nd and 3rd Aero Squadrons.

The training for the quarter ending June 30, 1921, is under way. A member of the Detachment who recently returned from a tour of China remarked that he regretted greatly not having taken his gas mask. He advises those making this trip during the summer time to place a mask in their barrack bag. According to his report, China's truck gardeners would have put the Germans to shame in the use of gas.

A temporary pistol range has been installed at Paranaque Beach. Manila Bay furnishes an adequate background. Firing is held at 6:30 a.m. so as to avoid the reflection of light from the water and to permit the enlisted personnel working on special duty in Manila to reach their various posts on time.

Kindley Field, Fort Mills, P.I., June 18.

Captain Edwards and Lieut. Baez, newly arrived officers at this field, have commenced their seaplane training with Captain Ervin as instructor.

The target practice for enlisted men has passed through its second phase with only one man entitled to trials for Pistol Expert. This trial is to be shot off soon.

The 17th Balloon Company has been sending about 30 men to the target range daily to operate the targets and record shots for the 27th Balloon Company. This organization is expected to go on the range in a few days.

The Goodyear balloon, type "R" #1909, which has been used by the 17th and 27th Balloon companies at this field, has been inflated two months and 26 days to-day. This balloon has given good service during this time, having made 142 ascensions, with a total flying time of 156 hours and 43 minutes.

Kindley Field, Fort Mills, P.I., June 18, Cont'd.

Captain Ervin, managing the Fast Baseball team, which is well represented with Air Service men, is largely responsible for the driving force that has placed this team in second place, with good prospects for a lead as the team moves toward the close of the season. During the past week the team has won three out of four games played.

On Tuesday two planes were sent up, one to observe the firing from a battery of 155's (mobile) and report sensings by radio to ground station, while the second acted as relief plane in case the observing plane should for some reason be forced to land. Good communication was maintained throughout the shoot. Stationary land targets were used by the battery.

An exceptionally odd feature of an H.S.2 L. Flying Boat being set up here is the fact that it is without dihedral, this in order to increase its climbing ability for photographic work. The plane is being equipped with a K. 1. type motor camera. It is expected that this plane will reach maximum altitudes attainable in this country and will fulfill the needs for such a plane. Extensive photographic mosaic work will be carried on locally.

Fairfield Air Intermediate Depot, Wilbur Wright Field, Aug. 13.

Mrs. Geo. E. A. Reinburg returned here August 15th from Camp Grant, Ill., where she has been visiting her parents, Chaplain and Mrs. George L. Hunter.

Major General George W. Read and Staff, and General Menoher, Chief of Air Service, visited this station August 10th and 11th, en route to the C.M. T.C. maneuvers at Camp Knox, Ky.

Captain Elmer E. Adler arrived from Washington, D.C., recently, and has commenced the organization of the Compilation Section of the Air Service which has been removed from Washington to this station. This section will handle a large volume of requisitions and correspondence with reference to supply matters which formerly went to the Office of the Chief of Air Service in Washington.

Activities in the Supply Department are somewhat limited at the present time, owing to the lack of funds for transportation. The decrease of shipping permits the personnel of the Supply Department to classify and catalogue a large amount of material which was received from overseas and has not been previously classified owing to lack of personnel.

Flight B, 91st Squadron (Obs.) Camp Lewis, Wash., July 30.

Forest patrol operations have been suspended at this base due to shortage of gasoline and oil. The last patrol flight was made on Tuesday, July 26th, with Staff Sergeant Cecil B. Quile as pilot and Forester Dark as observer. Two forest fires were spotted and reported by radio on this flight.

A number of the pilots of the squadron, stationed at Eugene, Oregon, flew to Camp Lewis during the week for their semi-annual 609 examination.

The Baseball team defeated the second team of the 14th Balloon Company last Thursday, scoring 11 runs to their opponents' 4.

Air Service Observation School, Post Field, Okla., Aug. 5.

As a pleasant interlude in the routine program of tactical missions, which comprises the major portion of air training at the Observation School, the class of fifty student pilots were given an opportunity to make their debut on Thursday, August 4th, in formation and cross country operations. Commencing promptly at two o'clock, planes took off continuously at five minute intervals throughout the afternoon until 25 DeHavillands had left the field, bound for Walters, Oklahoma, near the Red River, which forms the southern boundary of the State. All students landed in an unfamiliar field at that point, which had been designated to them by map directions a few minutes before the take off from the home airdrome.

As the ships landed at Walters, they were immediately organized into flights of five planes each and, led by a pilot instructor from the Post Field Staff, each group left the ground at once in close formation for the return flight to the home field.

Air Service Observation School, Post Field, Okla., Aug. 5. Cont'd.

From one to two hours close formation practice was put in by each flight on the return trip to Post Field and, before landing at the home station, all student pilots had received a basic grounding in the art of holding place on turns with a Liberty engined plane, a stunt, by the way, which was found to require very different air tactics, indeed, from those employed in formation work with the lighter-powered Curtiss planes of primary instruction days.

The fact that the orders of the day were completed on scheduled time without unfortunate accident of any nature, not even excepting blown tires or damaged shock absorbers, speaks well for the system of advanced flying instruction at this field and the general aptitude of the present class of student pilots.

Air Service Mechanics School,
Chanute Field, Rantoul, Illinois, August 12.

General Menoher, the Chief of Air Service, accompanied by Major Frank, Acting Executive, and Lieutenant Fairchild, Pilot, arrived in a Martin Bomber on Monday afternoon, August 8th, from Selfridge Field, for the purpose of inspecting this Post. This inspection was welcomed, as the A.S.M.S. feels that it has been doing good work during the four years of its existence, and this was the first inspection by the Chief of Air Service. General Menoher thoroughly inspected the School and entire Post, and left for Scott Field, Belleville, Illinois, on the afternoon of August 9th.

During General Menoher's stay at the Field, the Post was visited by Major McChord, Air Officer, Sixth Corps Area, and by Major Burr of the Artillery and Captain Whitesides of the Air Service, both stationed at the University of Illinois.

Various recreational activities at the Field are well patronized during this season. The new swimming pool is a source of pleasure to all. The tennis courts are used to a great extent and the bowling alleys, picture show, skating rink and gymnasium afford a variety of amusement for everyone.

This Field is visited by numerous Reserve Officers who come for the purpose of making flights. Captain Kemp, of Chicago, the organizer of the Air Service Reserve Officers Association of the Sixth Corps Area, is a frequent visitor for this purpose. All Reserve Pilots of the Air Service are heartily welcomed at this Field, and, weather conditions being favorable, will always be given flights, provided they possess the necessary identification data. The Field is also visited from time to time by former pilots, flying their own planes. It appears that there are a number of these in this vicinity.

Mrs. Martin, the wife of Major Martin, the new Commanding Officer, has not yet arrived, being detained in San Antonio, Texas, on account of illness.

The personnel of the Field learned with pleasure of the birth on August 11th at Fort Sheridan, Illinois, to Lieutenant and Mrs. Henry Kunkel, of a fine daughter, who has been named Suzanne.

The personnel of the Field is pleased to learn that Lieutenant Frank M. Bartlett is under orders to proceed to this station for duty. Lieut. Bartlett is very well known by a large number of the officer personnel of this Field.

Lieutenant Cooper, of the Chilean Army, arrived at this station during the week from Carlstrom Field, for the purpose of taking an engineering course in the Air Service Mechanics School.

Major William H. Smith, the Surgeon at this station, has been granted a leave of thirty days with privilege to apply for a thirty day extension.

The following officers have returned from leave: Lieutenants Eller, Spruance and Sullivan. Officers now on leave from this station are Lieutenants Lundell, Wooldridge, Kunkel, Brandt, Flannery and Eldredge, the last named motor-

Air Service Mechanics School,
Chamite Field, Pantoul, Illinois, August 12, Cont'd.

ing with Mrs. Eldredge to Salt Lake City, Utah.

The School is functioning in its usual efficient manner, although the classes are somewhat reduced, 203 enlisted men being discharged under the recent order for the reduction of the Army.

Information has been received that the Air Service Detachment which proceeded from this Field with four (4) planes, four (4) pilots, and twenty (20) enlisted men to Camp Grant, Illinois, to participate in the Reserve Officers Training and National Guard Camp, is having interesting work and have successfully carried out a number of problems with the Camp Grant troops, including dummy bombing, aerial liaison and machine gun straffing.

Cross-country trips were made by the following officers during the last week:

Major Martin and Lieutenant Eubank to Fort Sheridan and return;
Lieutenants Motley and Carter to Fort Sheridan and return;
Lieutenants Wooldridge and Hamilton to Scott Field and return;
Lieutenants Weddington and Eubank to Peru, Indiana, and return;
Major Martin and Lieutenant Eubank to Milford, Illinois, and return;

Two (2) MB3 Thomas Morse Scout planes were recently received at this station and, to date, have been flown by several of the pilots, who report the plane to be the fastest they have ever flown, which includes landing speed.

Flight B. 12th Squadron (Observation)
Nogales, Arizona, August 13.

During the past week, the Flight baseball team added two more victories to its credit by defeating the two fastest Company teams in the 25th Infantry. The team has some very heavy sluggers, the least batting average for the season being .378, and four men batting above .500.

Hqs. 91st Squadron, Municipal Flying Field, Eugene, Ore., July 30.

The 91st Squadron team continues to carry the rabbit's foot, defeating the Noti team last Sunday 8 to 6, in the first game to be staged on the new diamond at the Municipal Flying Field. The game was full of excitement, and the thousand odd spectators who saw it got their money's worth.

Captain L. H. Smith, Air Service, made a trip to Vancouver Barracks this week to inspect their new landing field. He also made a trip to Medford, Oregon, to visit the 91st sub-base at that city. Inspection of the landing field at Vancouver Barracks brought out needed improvements, so the 91st Forest Patrol sub-base will be retained at Sellwood Municipal Field, Portland, Oregon, until this work is completed.

The flying personnel of the Squadron is now taking its semi-annual "609" examinations at Camp Lewis, Wash., the flight Surgeon, Captain E. G. Reinartz, Medical Corps, having preceded them to that station for the purpose.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE SEPTEMBER 3, 1921

THE ZR-2 DISASTER

The appalling disaster in Hull, England, on August 24th, when 16 officers and men of the United States Navy and 28 officers and men of the British service met their death in the collapse of the great dirigible ZR-2 (R-38) marks the greatest tragedy of its kind in the history of aeronautics. The loss of these men is by far the greater part of the tragedy. They were all men skilled in aeronautics, some of them being at the very top of their profession and, apart from the sentimental side of this great catastrophe, their loss is a great blow to the science which, by their brains, courage and energy, they helped so much to advance.

What caused the collapse of the ship has not been definitely determined at this writing. There are various rumors or conjectures to the effect that the girders and beams in that vast lattice of steel that formed the skeleton of the ship weakened under the strain to which the ship was subjected in her final trial flight before her formal transfer to the U.S. Navy. No doubt the British Air Ministry will conduct a rigid and searching inquiry into the matter. According to the only American survivor on board the ill fated airship the accident occurred when a test began of the ship's controls. The ship had been flying along at about 70 miles an hour when suddenly there was a tremendous crash. The girders amidships broke and the ship split in halves. Both the tail and the nose of the ship immediately pointed downward and shot rapidly down into the Humber River. An explosion of either hydrogen or petrol occurred immediately after the girder gave way, and flames burst through the structure.

The ZR-2 was the largest airship that had ever been built, her capacity being approximately 2,700,000 cubic feet. Her total length was 695 feet and her greatest diameter 85 feet, with a total lift under normal conditions of 83 tons. Her power plant consisted of six Sunbeam "Cossack" engines of 350 h.p. each, located in six power cars.

Built at the Royal Airship Works at Cardington, Bedford, England, the ZR-2 was sold to the American Navy. Work on the construction of this gigantic airship was started in the spring of 1918. It was designed for naval purposes, the first consideration being given to the attainment of the greatest possible ceiling, - the experience of Germany in the use of airships for scouting and night bombing having demonstrated the necessity for the ability to climb rapidly to high altitudes. Fully equipped for service, the ZR-2 was to carry 38 tons of petrol, sufficient for a flight at full speed (70 miles per hour) of 5,000 miles, or at a cruising speed of 60 miles per hour of 6,500 miles, which is equal to the distance from the British Isles to Japan.

The framework of the airship was of Duralumin and consisted of the usual longitudinal lattice girders. There were 14 main gas compartments, containing the gas bags which were of fabric and goldbeaters skin. An airship of this class adapted for commercial purposes could carry 40 passengers and 2 tons of freight in a non-stop flight of 48 hours. The ZR-2 was equipped with a radio set with a sending radius of about 1500 miles, and with wireless telephone and radio direction finding sets. It was controlled from the control car situated forward, similar to the bridge of a ship, the captain controlling the ship exactly as does the captain of a seagoing vessel.

According to newspaper dispatches from London, Major P. E. Van Nostrand, U.S. Air Service, who was to have made the trip to the United States aboard this ship, is quoted as saying that it was hardly possible that the hydrogen gas was impure, as that would have been tested before the flight, and that the only

surmise left is that the breaking up of the dirigible was caused by a gasoline explosion, due either to gasoline vapor from one of the engines or through something happening to the gasoline line or tanks. Had the airship been filled with helium it is doubtful if such an accident could have happened, as helium bags would have brought the ship down in safety even in sections, just as water tight bulkheads in a steamship will enable her to reach port after a collision. Major Van Nostrand was sent by the War Department as an official observer for the Army on the trip of the dirigible to the United States. That he was not a passenger on the vessel on her final test flight seems to have been an act of Providence, and his escape from death is, indeed, cause for gratitude among his friends both in and out of the service.

Although the ZR-2 had not been accepted formally under the contract with the British Air Ministry, several payments had been made by the United States towards the cost of construction. Under the law and by naval custom no material or vessel is considered to be within the jurisdiction of the department until it has been finally passed upon by inspectors, or completed prescribed tests and formally turned over. Under this rule, title to the ZR-2 would be considered to have been wholly with the British owners.

The hangar which was built at Lakehurst, N.J., to accommodate the giant airship upon her arrival in this country is 803 feet long, 264 feet wide and 200 feet high, this height being about the same as the average city structure of 15 floors. It can not only hold two ZR airships 695 feet in length, but it can hold two dirigibles with as much as 5,000,000 cubic feet capacity. It is built of concrete, steel and glass, the glass being amber colored to avoid certain rays injurious to balloon fabrics. This structure is covered both on the inside and outside with strips of corrugated asbestos for fire prevention. Two lines of railroad tracks run straight through it. A most striking feature about this hangar is its sliding doors, a pair at each end. Each half door weighs 900 tons and requires two 25-horsepower motors to move it.

Far from being discouraged by the disaster, Naval officials, it is said, will seek authority for the construction of a new ship of the ZR-2 type in the United States. Admiral Wm. A. Moffett, Chief of the Naval Bureau of Aeronautics, is quoted as saying that "we will carry on, build and operate as many ZR-2's as may be authorized by Congress, so that these brave men will not have lost their lives in vain". "From such disasters as this", says the London Times, "all human enterprises have risen more fully equipped for success, and it will be so with the airship".

SALE OF AERONAUTICAL EQUIPMENT

The Material Disposal and Salvage Division of the U.S. Army Air Service announces that it is offering for sale at fixed prices a quantity of motors, accessories, hangars, sea sleds, flying equipment, etc., which should be of interest to every professional and amateur flyer, mechanical student, motor car and motor boat operator. Those interested should write to that Division, 2009 B, 18th and Virginia Avenue, Washington, D.C., for a handsomely illustrated catalogue, giving detailed descriptions, locations, and terms and conditions of sale.

CHANGES IN STATION OF AIR SERVICE OFFICERS

1st Lieut. Wm. J. Flood has been relieved from duty at Ross Field, Arcadia, California, and assigned for duty with the 8th Airship Company at Camp Bierne, Texas.

Lieut.-Colonel C. C. Culver has been assigned as student officer at the General Staff College for the 1921-1922 course.

1st Lieut. George E. Hodge has been relieved from duty at Fort Sam Houston, Texas, and assigned to duty in the Office of the Chief of Air Service, Washington, D.C.

Captain Arthur R. Brooks relieved from duty at Ellington Field, Texas, and assigned to Langley Field, Va. for duty.

1st Lieut. Clayton C. Shangraw relieved from duty at Bolling Field and ordered to Carlstrom Field, Arcadia, Fla., for duty and pilot training.

Captain Benjamin G. Giles relieved from duty at Post Field, Fort Sill, Okla., and assigned to Carlstrom Field, Arcadia, Fla., for duty and pilot training.

Major Leo A. Walton, Air Service, relieved from duty at the Field Officers' School at Langley Field, Va., and ordered to Washington, D.C., for duty in the Office of the Chief of Air Service.

1st Lieut. F. P. Kenney transferred from the Montgomery Air Intermediate Depot to Fairfield Air Intermediate Depot, Fairfield, Ohio, for duty.

1st Lieut. Wm. C. Sinclair, Infantry, detailed to the Air Service, and ordered to proceed from Camp Sherman, Ohio, to Carlstrom Field, Arcadia, Fla., for duty and pilot training.

1st Lieut. Earl J. Carpenter, Air Service, relieved from duty at Middletown Air Intermediate Depot and assigned to duty at Bolling Field, Anacostia, D.C., for duty.

1st Lieut. John E. Lynch, Air Service, relieved from duty at Kelly Field, San Antonio, Texas, and ordered to proceed to Washington, D.C., for duty in the Office of the Chief of Air Service.

Captain Horace N. Heisen relieved from duty in the Office of the Chief of Air Service, Washington, D.C., and directed to proceed to Langley Field, Va., as student officer at the Field Officers' School.

1st Lieutenants Frank M. Bartlett, Alonzo M. Drake and Clarence E. Crumrine have been relieved from duty in the Office of the Chief of Air Service, Washington, D.C., the first named to proceed to Chanute Field, Rantoul, Ill., for duty and the two last named to Mitchel Field, L.I., New York, for duty.

Major Maxwell Kirby has been relieved from duty in the Office of the Chief of Air Service and assigned as Corps Area Officer at Fort Benjamin Harrison, Indiana.

1st Lieut. Phillip Schneeberger relieved from duty in the Office of the Chief of Air Service and upon completion of leave of absence granted him will proceed to McCook Field, Dayton, Ohio, for duty.

DEATH OF CAPTAIN LOUIS F. APPLEBY

In attempting a landing at Marrs Field, Chattanooga, Tenn., Captain Louis F. Appleby, Air Service, piloting a DH-4 airplane, overshot the field, striking a tree and knocking the roof from a house. As the result of the crash he sustained a fractured skull and other injuries which proved fatal.

Captain Appleby, who was born in Alabama 41 years ago, was a Spanish War veteran, serving as a private with the 5th U.S. Infantry in Cuba from May, 1898, to February, 1899. He served two years in the Philippine Islands during the Filipino Insurrection, being a sergeant in the 33rd U.S.V. Infantry. He then served for a period of seven months as a Lieutenant in the Philippine Constabulary, and for several years thereafter held a position in a civilian capacity with the military establishment and later with the Civil Government in the Islands. His principal occupation in civil life was the legal profession.

During the World War he joined the second Infantry Officers' Training Camp at Leon Springs, Texas, in September, 1917. Upon graduation he was commissioned a 1st Lieutenant in the Aviation Section, Signal Reserve Corps, and placed in command of a large detachment of flying cadets at Love Field, Dallas, Texas. In February, 1918, he was placed in command of the 277th Aero Squadron which he helped to organize. He received his promotion to the grade of Captain on May 3, 1918. In the following October he was transferred to Kelly Field, Texas, for flying training, and he received his rating as Reserve Military Aviator on January 10, 1919.

In February, 1919, he was transferred to Rockwell Field, San Diego, Calif., for pursuit training, and upon the completion of the course was again assigned to Kelly Field, Texas, and placed upon border patrol duty.

Captain Appleby was discharged as an emergency officer on March 7, 1920. He subsequently took the examination for appointment in the Regular Army, and on July 1, 1920, was commissioned a Captain in the Judge Advocate General's Department. His application for transfer to the Air Service, Regular Army, was approved, and he reported to Carlstrom Field, Arcadia, Florida, for a refresher course. He was stationed at that field until May 7, 1921, when he was transferred to Corps

Headquarters at Fort McPherson, Ga., where he assumed the duties of Assistant Corps Area Air Officer under Major Clagett. He returned to Carlstrom Field on August 1st for his airplane pilot tests, which he passed on August 3rd.

Captain Appleby's services in the Army demonstrated that he possessed the ability of an executive of the highest caliber. He was tireless in his devotion to duty and a steady, reliable officer. His death is a great loss to the Army and a source of deep regret to his brother officers and many friends.

THE INTERNATIONAL AERO CONGRESS AT OMAHA, NEBRASKA ✓

Gutzon Borglum, world famed sculptor, designer of "Stone Mountain, Georgia", "Lincoln", and other famous works in this country, will design a medal for the first International Aero Congress to be held in Omaha, November 3 - 5, 1921.

The medal will symbolize the work of the American airmen during the war and the future possibilities of aviation in this country. It will be cast in bronze and will be presented to distinguished visitors at the Congress to commemorate the event.

Mr. Borglum expects to have the medal finished soon, according to the latest word received from him by the heads of the Aero Club of Omaha, Inc., which is sponsoring the big Congress.

The entire City of Omaha joined in preparing the new municipal field to be used for the first International Aero Congress. Thursday, August 18th, was set as the day for clearing the field, which was full of trees, hummocks and everything that would tend to wreck an ordinary aircraft. The Holt Manufacturing Company furnished a twenty ton and a ten ton caterpillar tractor which jerked the trees out by the roots with the greatest ease. Former flyers, members of the Aero Club of Omaha, rolled up their shirt sleeves and helped to remove the trees. They were assisted by American Legion men and business men of Omaha, who made short work of clearing the big 106 acre flying field.

Ladies of the Prettiest Mile Club furnished luncheon for the workers. The profits, if any, from the Congress are to be used to purchase this field, which is to be donated to the city.

According to Major Ira A. Rader, Air Officer of the Seventh Corps Area, and other army officers, the field is the most favorable in the country for a municipal landing field. It is absolutely flat, with the Missouri River on one side and a railway on the other, offering facilities for flying boats as well as the advantage of loading planes on the field. It is only fifteen minutes ride from the heart of the city, adjoining paved streets and boulevards.

The landing of the Pulitzer Trophy Race for Omaha, as the stellar event of the Congress, is the latest achievement of the Aero Club of Omaha. The city of Detroit, which had been awarded the Pulitzer Race for this year, allowed Omaha to have it as a part of the big Congress, with the provision that Detroit should have it next year.

The Pulitzer race is the most important event in aviation. It will attract the best of the flyers of the world to the Omaha Meet. The race is an unusual event. It was named after Ralph Pulitzer, who inaugurated the race last year. To stimulate interest in aviation, he donated a trophy, which is of silver and stands four feet high, and stipulated that the trophy should be contested for annually until one flyer should win it twice in succession, when he would be allowed to keep it.

The first race, held in 1920 at Mitchel Field, was won by Lieut. C. C. Moseley, who piloted an American built Verville Packard Ship. The distance of 116.08 miles was covered by him in 44 minutes and 29 seconds. Captain H. E. Hartney, piloting a Thomas Morse 300 h.p. plane, was second, in 47 minutes, and Albert Acosta, third, in his Italian Ansaldo Spa Chasse plane.

Sadi Le Cointe, air speed marvel of France, has notified the Club that he plans to be an entrant. Officials also say that the "Texas Wildcat", owned by Mr. S. E. Cox, Texas millionaire, will also be entered.

A MODEST RUSSIAN AVIATOR ✓

Imagine an aviator handicapped with a name like Nikiphor Aulonovich Audreychook! As may be well supposed, this airman is a Russian. He is now a resident of the Philippine Islands, and his experiences must have been interesting and exciting. A short time ago he signed on a Russian fishing boat as

engineer. The boat was wrecked in a storm in the Pacific, and he with a few other survivors were picked up by an American boat and dropped at Guam. From Guam he came to Manila, where he is now employed. Immediately upon his arrival his desire to fly led him to seek the Department Air Officer and request permission to ~~fly~~ in Army planes. When asked where he had flown, he said that he was a Russian aviator during the war and had flown several types of French and English planes. He made no mention of the fact that he had all the decorations for bravery to which a Russian pilot is heir, had been wounded in an air battle against the Germans, and had fought in the air for five years on the side of the Allies against the Germans and Austrians. These facts later came out when he was asked to submit his official record of service.

GLIDING IN GERMANY

A very interesting glider has been built and flown by Herr Hans Richter, who was one of the first experimenters with gliders in Germany. He began his gliding experiments in 1908, and is said to be the earliest of all glider fliers now existing in Germany, being in fact the first German glider after the late lamented Lilienthal. In the glider produced by Richter, the aviator rests his elbows on the longitudinal members of the frame and controls the fore and aft attitude of the machine with an ordinary tail elevator operated by a short lever which is worked by a movement of the wrist. The machine is designed to be inherently stable laterally, and consequently no lateral controls are fitted. The aviator's own legs form the undercarriage of the machine.

Altogether Richter has made more than a thousand flights with his various types of gliders, and with those of other constructors. It is noteworthy that the very keenest interest is taken in Germany, where gliding competitions with quite a large number of entrants have taken place in the hills of the Rhom.

A NEW SAFETY DEVICE

Statistics show that quite a percentage of fatalities due to airplane accidents were caused by reason of the fact that the gasoline tank exploded upon impact with the ground, setting fire to the plane, the occupant thereof succumbing to the flames before he could extricate himself from the wreckage.

Mr. Jack Imber of London, England, has invented a fuel tank for airplanes which it is claimed is proof against leakage in the event of its being punctured and proof against fire when pierced by incendiary bullets or other projectiles. It appears that a small bullet can inflict extensive damages when passing through a petrol tank. In many cases it has been found that an ordinary bullet will tear a hole 6 or 8 inches in diameter in the side of the tank opposite to that through which the bullet enters. This phenomenon has perplexed many inventors who were seeking to prevent the gasoline from leaking from bullet holes. Investigation disclosed that the larger hole was due to the enormous pressure of fuel against the far side of the tank. On entering the tank the progress of the bullet is partly arrested by the liquid and sets up in the liquid a pressure wave which increases both in area and force from the point of entry to a distance of approximately 2 feet 6 inches. Thus when a bullet travels through a tank its momentum is reduced, but on the other hand in a tank of ordinary size it is found that up to a certain point the farther one side wall is from the other the larger will be the hole torn upon the exit of the bullet, because the pressure wave in the liquid is the main cause of the larger hole torn at the exit.

The Imber principle is to allow the energy of the pressure wave to dissipate by providing the tank with a resilient outer rubber covering, so that when the pressure exceeds a certain point the tank yields and the rubber stretches out from the side of the tank under pressure. Naturally the highest point on the stretched rubber covering is that through which the bullet makes its exit, and the rubber being stretched makes this point also the thinnest portion of the covering, so that when the bullet leaves and the pressure is relieved the rubber comes back to its former shape and completely closes up and seals the bullet hole.

The Imber tank is composed of three parts, an inner tubular aluminum framework to which sheet aluminum baffle-plates are attached, which framework is adapted to fit within and conform to the shape of the shell; the metal shell or casing, made of thinned steel, into which the baffle-plate frame is inserted; and

the outside rubber covering which surrounds the entire shell. The resilient or elastic covering returns to its seating against the framework in such a brief space of time that it is impossible for the contents to ignite in the event of the projectile being of an incendiary nature. The outer rubber covering is of specially prepared rubber, approximately 1/4 inch in thickness. The edges of the tank are reinforced with an additional rubber strip, 1/4 inch thick, vulcanized to the covering rubber.

Minor shocks are, of course, taken care of by the rubber covering, but when a hard blow is struck the internal construction gives. While the framework is strong enough to give adequate bracing to the tank under ordinary usages, it is purposely made collapsible upon the application of a blow likely to cause a puncture. In the case of a landing in which a smash occurs, the rubber covering retains the petrol, no matter how badly the tank may have been battered. While the framework of an aircraft may crumple and strike forcefully against the tank or the tank strike the ground, the result will merely be a distortion of the shape of the tank, thereby minimizing the danger of fire from the inflammable liquid that otherwise would have been sprayed about the wreckage.

To prove the efficacy of these tanks in the prevention of fire a test was recently carried out on a Sopwith "Camel" machine fitted with the Imber tank. Arrangements were made to effect a nose dive, which was brought about under severe conditions. The machine was dropped from the airship R.33 from a height of about 1,500 feet and with the engine running. After the crash it was found that the engine, back plate and controls were forced back to the main tank, the cylinders being quite hot enough to vaporize petrol had the tanks burst. The pilot's seat acted as a buffer, and the blow, in addition to distorting the tank, caused a slight tear of the rubber cover, but there was no spray or leakage of petrol.

THE GORDON BENNETT BALLOON RACE

The Aero Club of America gave a farewell dinner on August 26th in the garden of the American Committee for Devastated France, adjoining the Club House, to the American Team who are going over to Belgium to compete in the International Gordon Bennett Balloon Cup Race to be held in Brussels on September 18th. The members of the American team who have been selected to represent America are Ralph Upson, winner of the National Championship Balloon Race and his aide C. G. Andrus of the United States Weather Bureau. The Akron Chamber of Commerce is sending Mr. Ward T. Van Orman, in charge of the Airship Construction Division of the Goodyear Tire and Rubber Co., with Mr. Willard B. Seiberling as his aide. Mr. Bernard Von Hoffman and Mr. J. S. McKibben as aide represent St. Louis.

The classic of the Air has been won four times by America, and was captured by the representative of Belgium in the International Balloon Race held last October from Birmingham, Alabama.

Representatives from America, England, France, Belgium, Italy, Spain and Switzerland will compete in this race.

The American team has the best chance to win this year and has every confidence that they will bring back the handsome Trophy put up by Mr. James Gordon Bennett, to resume its place of honor in the trophy room of the Aero Club of America. The American Team sailed on the S. S. FINLAND on Saturday, August 27th.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

France

Under the patronage of the French Under Secretary of State for Air, the French Chambre Syndicale des Industries Aeronautiques has taken the initiative in convening an International Air Congress, to be known as the First International Air Navigation Congress, and to be held concurrently with the next Paris Aero Salon, from November 15 to 26, 1921, to afford an opportunity of discussing the various problems connected with commercial aviation. By inviting communications from all interested in the question of commercial aviation, it is hoped to establish an interchange of ideas which will be of great help in the furtherance of aviation all over the world, and give an opportunity of discussing such problems as effect the future development of commercial flying.

Australia

In his proposed flight from Melbourne on a 10,000 miles flight round Australia, Lieut. Parer, unfortunately, did not get very far. He started on August 3rd from Melbourne and when about 40 miles out ran into a blinding snow storm. As his engine was running badly he determined to descend. He landed safely and was standing near his machine when a blast of wind tilted the machine and threw him against the whirling propeller. His collar bone was fractured and he received injuries to his leg and toes.

Germany

The extent to which the German Government is fostering civil aviation is not generally recognized, and the information given by the Secretary for Air of the British Government on this subject in Parliament will open the eyes of many people. Remarkable progress is being made, having regard to the restriction on aircraft construction imposed by the Peace Treaty. There are in Germany two main bodies which virtually control all air traffic - the Deutsche Luftreederei and the Nord Deutsche Lloyd. The latter comprises some eight or ten companies, the most important of which are the Rumpler, Albatross, Sablatnig, and Junker concerns. Large numbers of societies have been founded throughout the country with the object of stimulating interest in, and promoting the development of aviation in all its civil aspects. The government is indirectly represented on the "Flug and Haven", which is the most influential of these institutions. Although prohibited by the Allied authorities from running air services outside of Germany, a number of internal air routes are in operation, and a considerable sum has been allotted by way of Government subsidy. All the services, the majority of which are based on Berlin, are being maintained by about 100 old military machines which the operating companies have been allowed to acquire.

England

Two air transport companies have created new records for themselves this week. The Instone Line carried no fewer than 188 passengers over the London-Paris route, and the Messageries Aeriennes carried 103 air travelers over the same route. Both of these figures are records for the firms concerned. In spite of this, however, the total of all traffic for the week was below that for the past few weeks, being only 482. This is due to a falling-off in passengers on the Amsterdam route, and to an epidemic of engine trouble on the "Goliaths".

SQUADRON NEWS

Hqrs. Detachment, 4th Group (Obs.) Manila, P.I., June 25.

The members of this Detachment are to move into quarters in a hangar formerly used by the Curtiss Airplane Corporation. At the present time this Detachment has an ideal tent camp situated on Manila Bay, but owing to the fact that the rainy season is coming on in all its glory, it was decided to move into quarters which will offer more protection when the typhoons start to blow.

Kindley Field, Fort Mills, P.I., June 25.

The 17th Balloon Company has been on the Target range for the past week. Preliminary practice started on the 20th and lasted until the 24th, and the highest score made during that time was a perfect fifty points. The men shot from four positions; prone, kneeling, sitting and standing. Record practice commenced on the 25th and probably will last until the 28th. So far excellent scores have been made.

The building of crushed rock roads and better drainage facilities in and around Kindley Field has been quite noticeable in the past few weeks. The Constructing Quartermaster has given a good deal of effort to this work in order to complete same before the heavy rain starts in.

Lieut. Raphael Baez has been transferred to the Third Squadron at Camp Stotsenburg for duty.

Lieuts. Bettis, Lea and Ellicott have commenced their instruction in H.S. 2 L. piloting.

Clark Field, Pampanga, P.I., June 26.

Major Chester C. Staples is on leave with permission to visit Java, Sumatra, Borneo and India.

First Lieutenant Charles L. Webber is on a month's leave in Baguio.

Captain Charles T. Phillips' petition for the Southern Island trip on detached service has been approved. He will leave on or about July 2d.

The photographic section is working morning, noon and night on a mosaic map which, due to the rainy season, it is having considerable trouble completing.

This post now bears the resemblance of a university campus. Officers and men are never seen without books under their arms. The garrison school in the morning and vocational classes in the afternoon have materially extended the curriculum here.

Hqrs. Flight "B", 91st Sqdn. (Obs.) Camp Lewis, Wash. Aug. 6.

Forest patrol operations over the Olympic National Forest have been suspended since July 23rd, due to shortage of gasoline and oil. A supply of gasoline and oil is being purchased by the Forestry Service and the State of Washington, and operations will shortly be resumed.

Now that the dry season is in full sway, that portion of the Olympic Forest blown down by the tornado of January, 1921, stands out plainly against the green of the surrounding forest. Airplane surveys of this district reveal the fact that much more damage has been done than at first supposed.

Detachment Flight "A", 91st Squadron, Medford, Oregon, July 31.

During the past month this detachment was chiefly occupied with preparations to rejoin the 91st Squadron at Eugene, Oregon, a move made necessary by reduction of strength by discharge.

Hqrs. 91st Squadron, Eugene, Oregon, August 6.

The 91st team lost its second game of the season, out of 12 played, to Cottage Grove, Oregon, on the Municipal Flying Field diamond, the score being 8 to 4. The team does not feel downhearted over this defeat, as Cottage Grove imported an elegant bunch of sluggers for the occasion from all over the Willamette Valley, and nothing short of a Coast League team could have downed them under the circumstances.

Hors. 91st Squadron, Eugene, Oregon, August 6, Cont'd.

Captain L. S. Smith, A.S., visited the bases at Medford, Oregon, and Camp Lewis, Washington, by air this week.

Lieut. E. C. Kiel has been in Medford, Oregon, the last week, during the temporary absence of Lieut. S. O. Carter, sub-base commander at that station.

Sergeant G. H. Eckerson, who has been on detached service at Camp Lewis, "B" Flight, returned this week to Squadron Headquarters for duty as Chief of Flight "A".

Cadet Monteith and Sergeant Rouse made a week end trip to Medford by air, the former to take the Mayor of Medford for a flight to Portland, Oregon.

The flying personnel completed their physical examinations at Camp Lewis during the past week.

Fairfield Air Intermediate Depot, Wilbur Wright Field, O., Aug. 20.

Cooperation from Wilbur Wright Field made it possible for Lieut.-Colonel James C. Rhea, Assistant Chief of Staff, Headquarters Fifth Corps Area, to keep an important engagement in Washington upon very short notice. Colonel Rhea was ferried to this station by the Air Officer of the Fifth Corps Area, arriving here late in the afternoon of August 16th. He left here at once in a Breguet with First Lieut. Caleb V. Haynes as pilot, and arrived in Washington early in the morning of the 17th, after having stopped at Moundsville, West Virginia, for gas. Upon orders from the Chief of Air Service, Lieut. Haynes left the Breguet Bomber at Bolling Field for use of officers on duty in the Office of the Chief of Air Service, and returned to Fairfield by rail.

A large number of officers, soldiers and civilian employees visited New Carlisle Lodge, Free and Accepted Masons, on August 18th, where a class of thirteen candidates were given their second degree in Masonry. Among the candidates were Major George E. A. Reinburg, Commanding Officer of the Field, Master Sergeant William O. Schupert, Staff Sergeant Albert B. Elick, and several civilian employees of the Air Service.

On August 19th, Major George E. A. Reinburg and First Lieuts. Charles W. Steinmetz, Caleb V. Haynes and Charles E. Thomas, attended a luncheon given by the Columbus Aero Show at Columbus, Ohio, making the trip in SE5 and DH4 airplanes. Major Reinburg and Mr. J. L. Lawson of the Air Line Transportation Company were the guests of honor and the principal speakers on this occasion.

Captain Thomas Boland, Air Service, with Sergeant George Haas took off for San Antonio, Texas, on August 18th, ferrying a DH4 Ambulance Airplane. This is the second ambulance airplane to be ferried to Kelly Field from this station within thirty days.

First Lieut. Gerald E. Ballard returned from leave of absence on August 15th.

A number of officers from this station visited Yellow Springs Lodge, Free and Accepted Masons, on August 15th.

Major Thomas C. Spencer, Signal Officer of the Fifth Corps Area, visited this station August 18th on his way to Camp Sherman, Ohio.

Mrs. Charles W. Steinmetz, wife of Lieut. Steinmetz, left August 18th to spend several days visiting friends and relatives in Columbus, Ohio.

Balloon Company No. 31, Camp Knox, Ky., August 13.

Forty-five young ladies came out from Louisville to attend the second company dance held last Saturday. A fine dinner was served at six thirty, and dancing started at eight o'clock. The balloon was moved out of the hangar onto the new bed and the hangar floor waxed. It was decorated with toy balloons, parachutes, baskets and insignia and presented a very attractive appearance, showing what can be done with balloon equipment for decorations. Sunday morning all went to church, and at noon a fine chicken dinner was served. The girls left on the four o'clock train.

On Thursday and Friday balloon observation was demonstrated to the Field Artillery School. The student officers have been firing on the range all this month. The heavy rain on Thursday spoiled the work for that day, but on Friday problems were conducted for them. On that day the company also participated in the battalion demonstration. This was similar to the one held a month ago for the R.O.T.C., except that in this case the participants were the C.M.T.C. students. They were assisted by members of the 40th Infantry.

Balloon Company No. 31, Camp Knox, Ky., August 13, Cont'd.

The balloon was maneuvered by hand to its position for the Demonstration, a distance of six miles. Work was started at ten o'clock, and at noon the balloon was in the air in position with telephone communication complete. At H hour (2:20 p.m.) minus forty minutes the observers ascended. At H minus fifteen attack was made by enemy airplanes, the observers jumped and the balloon was hauled down -- at H minus 10 it ascended again and remained in observation until H plus 37 minutes. At this time work was started with the Field Artillery School. Shoots were conducted on targets across Salt River. The firing was done by a battery of 155s. In all sixty-two rounds were fired and observed. The problem was finished at a little after five o'clock.

The Field Artillery School finishes its year's work next week, and all the students will then go to their regiments. There is considerable speculation among them as to where they will go. They will give their dance tonight (Saturday) and a great time is anticipated. A larger number of guests from Louisville is expected than for any of their other dances.

Major General Menoher, Chief of Air Service, arrived by airplane from Dayton on Friday noon in time to see the Demonstration, and left Friday evening.

On Thursday night the bi-weekly Officers' Hop was held at the Central Officers' Club. It was one of the best yet had, many officers of the National Guard and C.M.T.C. being in attendance.

Preliminary rifle practice is nearly completed. The company has been holding these exercises every morning now for three weeks, and it is felt that good scores will be made when it gets on the range.

Ross Field, Arcadia, Calif., August 10.

A series of athletic competitions was held on Wednesday afternoon in trap-shooting, bowling and tennis, both singles and doubles, between the officers on duty at the school and the officers on duty at the post, with the result that the School teams were defeated by the Post teams in three events, thereby still holding the lead over the School in athletics.

The swimming pool of the Santa Anita Officers and Enlisted Men's Club was opened last week. This pool is one of the largest open-air tanks in this part of the country, and it has been a source of considerable pleasure to the members of this command. The officers and their wives enjoyed a swimming party at this pool on Tuesday evening.

Major M. F. Davis, Air Service, and Captain G. D. Watts, Air Service, left the post for a fifteen day hunting trip to the Lake Tahoe region.

Captain and Mrs. C. P. Clark are on leave visiting friends and relatives at Stockton, California.

Captain and Mrs. Warner Gates entertained with a chicken dinner at their quarters on Monday evening, having as their guests Miss Corinne Hayes of Los Angeles and Lieut. James T. Neely of this post.

On Saturday, July 30th, Section 22, consisting of Major John D. Reardon and Major Michael F. Davis, completed final instruction for the rating of Balloon Observer. Section 23 has now entered its last week of the ground course, and on Monday, August 8th, will go into the air. Sections 24, 25 and 26 departed this date for the Mountain Course of Observation at Camp Kennard on Mount Harvard near Mount Wilson. These sections will be in the mountain camp for approximately two weeks, where they will obtain further instruction in aerial observation to fit them for the Air Course which follows shortly thereafter.

During the past week there was a total of forty flights for a total duration of fifty hours and fifty-nine minutes. Of this time, thirty flights were made in the observation balloons for a total of forty-two hours, nineteen minutes. Three flights were made in the Pony Blimp for a total of one hour and twelve minutes. Seven flights were made in free balloons for a total of seven hours, twenty-one minutes. The observation balloon flights were mainly the result of the Air Course being taken by Section 22. The Pony Blimp flights consisted of experiments of various matters which are at present being conducted, mainly the observation of artillery fire from the blimp, reported by radio phone, and experiments regarding the use of the Pony Blimp as an observation balloon by changes in the rigging and the attaching of a cable. The final reports on these experiments have not as yet been submitted. The free balloon flights consisted of solo flights.

Carlstrom Field, Arcadia, Fla., August 10.

The Soldiers' Club gave a "real bangup" smoker Saturday, and those who were absent missed an enjoyable affair. The boys got together and elected the following officers for the coming year: Charles E. Glover, President; A. M. Girkle, Vice President; L. E. Thurmond, Secretary and Treasurer.

The new training class made a good take off, and will soon be soloing in the Palmettos and barracks. The class comprises thirty-seven members.

The football season looms up on the horizon. There is plenty of excellent material at the field, and with a good schedule the prospects are good for a successful season. The only trouble anticipated is not having any teams heavy enough to play against in this neck of the woods.

Carlstrom defeated Wauchula in a close game on Tuesday and repeated the dose on Friday with the aid of Lieut. Chapman, its hard-hitting first-baseman. On Thursday Carlstrom defeated Arcadia 10 to 4 in a loose game, featured by many errors.

During the week a total of 230 flights were made for a total duration of 226 hours and 55 minutes; Headquarters Flight being credited with 41 hours and 15 minutes, "A" Flight with 86 hours and 10 minutes, and "B" Flight with 99 hours and 30 minutes.

Mather Field, Sacramento, Calif., August 9.

Lieuts. F. S. Gullet, Ned Schramm, A. G. Liggett and William S. Sullivan, and Corporal James M. Larsen with Forester W. D. Marx and Radio Engineer Charles Richards as observers, flew a five ship formation to San Francisco to attend the demonstration at the Citizen's Training Camp which was held on August 3rd, 4th and 5th.

Lieuts. Frank D. Hackett, A.S., and John W. Slattery, A.S., made a trip to San Francisco by plane on the 4th, returning the same day.

Cadets Doles, Hantsche and Zufall have returned by plane from Visalia, Calif., where they have been stationed on Forest Fire patrol.

Captain Louis M. Field, M.C., Flight Surgeon, and Lieut. A. G. Liggett, A.S., have returned from a sojourn at the Rest Camp on Gold Lake near Blairsden, California.

Deer season opened in the North central part of the State on August 1st and continues until the end of the month. A special patrol is being maintained out of the sub-base at Corning, California, to take care of the increased fire hazard at this time.

Mr. and Mrs. W. P. Andrews arrived at the post in a Walter Varney plane on the 5th, and returned to San Carlos, California, on the 7th.

As a result of the suspension of forest patrols on account of shortage of gasoline, the command is devoting its time in checking the aeronautical equipment and putting it in first class condition.

Langley Field, Va., August 20, 1921.

The dance given by the permanent officers of Langley Field to the temporary officers was a very pleasant affair. Those who entertained with dinner tables were: Major and Mrs. McNarney, Major and Mrs. Hanley, Major and Mrs. Walton, Major and Mrs. Johnson, Captain and Mrs. Knight, and Lieut. and Mrs. Hamlin.

Mrs. R. E. Milling and Miss Odele Milling have been the guests of Major and Mrs. Johnson. Mrs. Johnson entertained at tea in honor of Mrs. Danforth and Mrs. Milling on Tuesday at Roseland Inn.

Major and Mrs. Van Kirk entertained Thursday at the Club. Among those present were several out-of-town guests, including Captain and Mrs. Granville Smith from Camp Eustis, and Miss Smith from New York. Mrs. Van Kirk entertained Colonel and Mrs. Danforth at dinner on Tuesday. Others present were Major and Mrs. Strauss and Captain Mossett from New York.

Captains John G. Colgan and Victor Parks, Jr., are among the recent arrivals at Langley Field, reporting for duty in the Field Officers' School.

Major and Mrs. Walton are leaving on Saturday for Washington, where Major Walton has been ordered to duty.

Lieut. and Mrs. Torney entertained at dinner for Captain and Mrs. Voss, Lieut. and Mrs. Bobzien and Lieut. and Mrs. Biggs on Monday. Mrs. Torney had as her guests Wednesday Lieut. and Mrs. Fahr, from the Naval Base, and Miss Fyfe from New York.

Colonel and Mrs. Danforth entertained on Thursday night in honor of Mrs. R.E. Milling and Misses Odell and Dixie Milling. Covers were laid for eighteen.

Langley Field, Va., August 20, 1921, Cont'd.

Having completed the temporary duty to which he was assigned at Langley Field, Captain Clyde V. Finter has been relieved from further duty here and ordered to report to his proper station for duty.

Miss Elizabeth Davis of Otola, Florida, is the guest of Lieut. and Mrs. Bobzien. On Friday Mrs. Bobzien entertained at tea in honor of Miss Davis at Roseland Inn.

Chaplain and Mrs. R. Earl Boyd have as their guest Chaplain Boyd's sister, Mrs. Ernest George, of Pittsburgh, Pa.

The following changes in assignment and duties of officers of the Lighter-than-Air Division have been made: Lieut. Robert V. Ignico, who for some time has been in command of the 19th Airship Company, has been relieved from that duty and assigned as a student officer for the course of instruction in the Airship School. Lieut. Carlton F. Bond has been relieved as commanding officer of the cadet detachment and assigned to the command of the 19th Airship Company. Lieut. O. A. Anderson has been relieved from further duty with Airship Company No. 10 and assigned to command the Cadet Detachment.

Leaves of absence have been granted the following officers: Captain R. B. Hough for 15 days from August 17th; Captain A. R. Brooks, sick leave of absence for one month from August 16th; Major Henry J. F. Miller for five days from August 17th; Lieut. Clayton C. Shangraw for 15 days; Captain L. R. Knight for 15 days and Lieut. Evers Abbey for 10 days.

Captain H. E. Sturcken, A.S., has reported for duty in the Field Officers' School. Captain Sturcken was formerly stationed at Carlstrom Field, Arcadia, Fla., where he performed the duties of Executive Officer. He was accompanied by Mrs. Sturcken and their little daughter, and they are at present residing in Hampton.

Captain Katsuzo Kosuda, Inspector of the Ordnance Depot of the Imperial Japanese Army, and Professor T. Tamjaru, who is professor of physics and member of the Aeronautical Research Institute of the Imperial University of Tokyo, Japan, were visitors at Langley Field on Thursday.

Fort Monroe defeated the Langley Field team in their final game of the Service Baseball League, Sunday afternoon, at Fort Monroe's diamond, by the score of 10 to 5.

Miss Dorothy Campbell from Washington is visiting Captain and Mrs. Knight. Col. Rae of Indianapolis is here as the guest of Col. and Mrs. Danforth.

Chanute Field, Rantoul, Ill., August 20.

Mrs. Martin and son Robert - wife and son of Major F. L. Martin, commanding officer, arrived Saturday from Kelly Field, where Mrs. Martin was detained on account of illness. Her arrival was very welcome, and everyone is pleased to hear that she has almost entirely recovered from her illness.

Lieut. Guillermo Freile of the Ecuadorian Army, who is attending school at this station, made a parachute leap from a DH4 airplane during the week. The jump was quite successful, and Lieut. Freile is very proud of the fact that he is the first Ecuadorian officer - if not the first officer of any South American Army - to make such a descent.

Lieut. Lewis N. Eller took a party by Q.M.C. truck to the Air Intermediate Depot at Fairfield during the week to obtain the necessary supplies for carrying on instruction in the School, no appropriation being available to ship these supplies by freight.

Several reserve officers have visited the field during the week and have been given flying instruction.

Cross country trips during the week were made to Scott Field, Fort Sheridan, Illinois, and Bluffton, Indiana.

Lieut. Nowland, one of the members of the Air Service Detachment serving in connection with the R.O.T.C. Camp at Camp Grant, arrived at this field by airplane for supplies, and reports successful operations by the Air Service at Camp Grant.

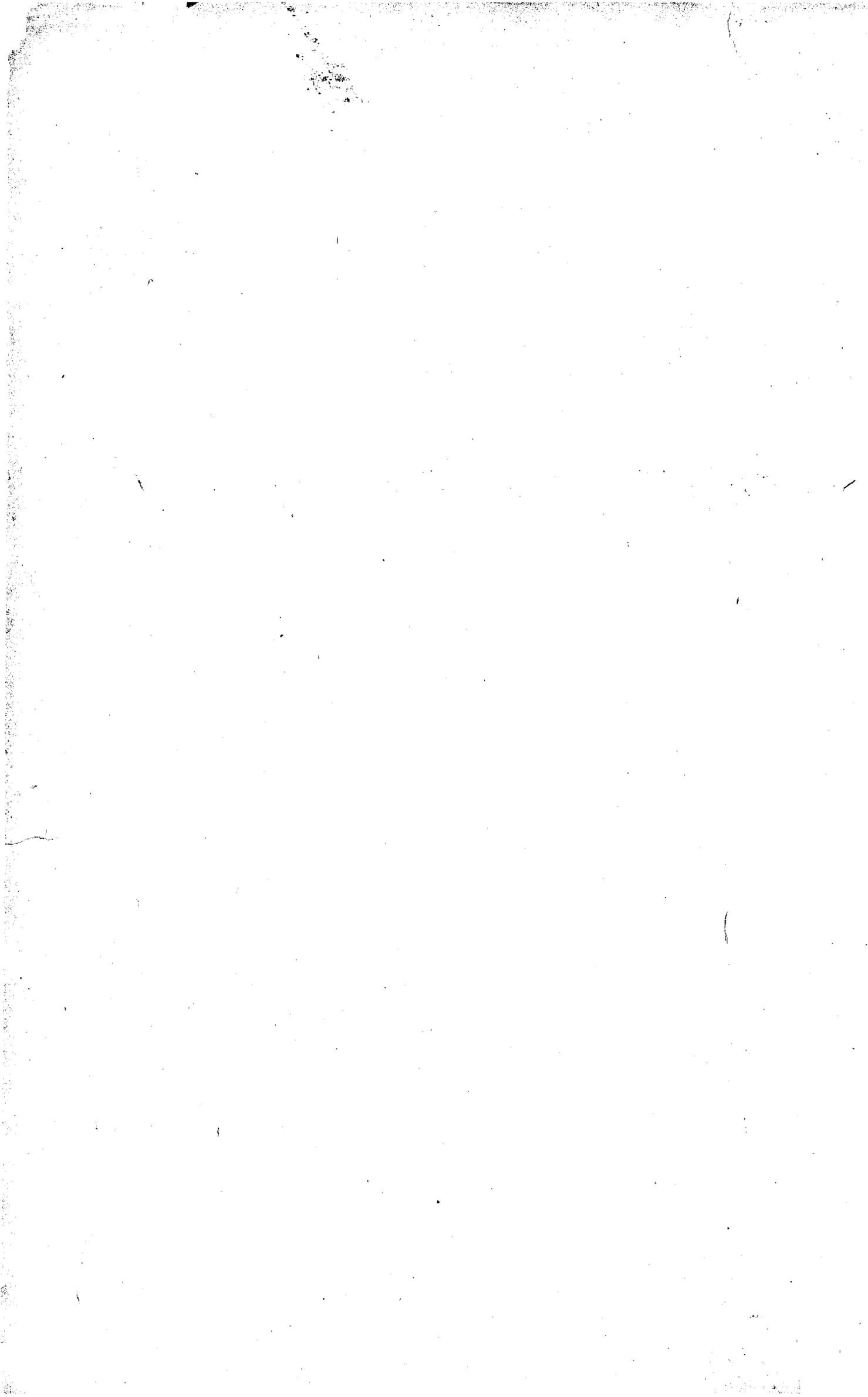
Major Betts, Medical Corps, arrived at this station from Camp Grant to temporarily take the place of Major William H. Smith, Surgeon, who has gone on a leave of absence.

News has been received from Fort Sheridan of a daughter born on the 16th to Lieut. and Mrs. James Flannery; also of a daughter born on the 19th to Lieut. and Mrs. Warren R. Carter.

Chanute Field, Rantoul, Ill., August 20, Cont'd.

Lieut. Flannery and Lieut. Kunkel have returned from leave. Lieut. Silas C. Hyndshaw is leaving in the near future in compliance with orders directing him to report to Washington for temporary duty for a period not exceeding thirty days.

A Board of Officers has been appointed by the Commanding General of the Sixth Corps Area, to meet at this station on August 22nd, for the purpose of examining candidates for a commission as Second Lieutenant in the Regular Army. This Board consists of Major F. L. Martin, A.S., Chanute Field; Major F. A. Burr, F.A.; Major Connor, Infantry, of the University of Illinois; Major Betts and Captain Hickman, Medical Corps, Surgeon and Flight Surgeon, respectively, at this station.



The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE SEPTEMBER 10, 1921

ELECTRO-MAGNETIC BRAKES FOR AEROPLANES

The Australian publication "Sea, Land and Air" prints an interesting article in a recent issue under the above caption. Whether Mr. Gernsback's invention is a practical one is a matter for the future to determine, but should it fulfill the claims put forth by him it will not only introduce a great element of safety in flying, especially with reference to night flying, but will go a long way towards simplifying the operation of airplanes from battleships. The article in question is as follows:

"It is a well-known fact that when the aeroplane was first brought out by the Wright Brothers, of Dayton, Ohio, one of the greatest troubles they experienced was in making a safe landing. At first wooden skidding arrangements were used, while afterwards heavy rubber pneumatic tires came into vogue to take up the shock when the aeroplane alighted.

When an aeroplane lands on a plain or a large grass plot and it comes to rest, the danger is, of course, over. As aerial science is progressing, however, and as aeroplanes are forced to alight sometimes on very narrow platforms, the landing becomes more and more dangerous due to the smaller and smaller landing area which economic conditions make necessary.

It is safe to predict that during the next twenty years our entire mode of life will have been revolutionized. Aeroplanes within ten years from now, particularly during the period of reconstruction after the late war, will become as plentiful as automobiles. The landing problem, therefore, becomes more and more important, and it goes without saying that when aeroplanes alight in a crowded city, they will not have large grass plots on which to land. Naturally, the roofs of our tall buildings immediately suggest themselves. For is this a new idea. There exists to-day in Philadelphia a hotel, the Bellevue Stratford, which has a landing platform on its roof. But this platform has never been utilized as yet, for the good reason that it has been too dangerous, the landing area being too small.

Up to this time there has not existed a device whereby it was possible to make a landing on a small plot for the reason that when an aeroplane comes out of the sky it cannot stop instantly. Its momentum usually carries it forward as much as 100 yards. Were the aeroplane to stop abruptly, it would naturally turn either a somersault or otherwise would become wrecked. The same thing only on a smaller scale happens to an express train going at sixty miles an hour when the emergency brakes are set abruptly without the brakes gradually taking up the momentum of the train.

Recently it has been proposed to stop the momentum of aeroplanes by having them land on a wide strip of belting revolving in opposite direction to the oncoming flyer. While this idea is feasible it has never been used in practice, and it becomes obvious that it could not be used except from one direction. For instance, if the aeroplane came on at right angles to the moving belt, it would most likely be overturned. For that reason this device may be considered as impractical. Of course, when the weather is clear and the wind velocity is not great, an expert aviator will not have much trouble in alighting on a comparatively narrow runway as has been proved right along by seaplanes making successful landings on battleships. At present our Navy has quite a few battleships equipped with narrow runways as explained above, but these are useless in a heavy sea, or when a gale is blowing. The reason is that even if the aeroplane should make a successful landing, it would almost surely be tossed into the sea by the combined pitching and rolling motion of the vessel, as well as by the wind trying to blow the aeroplane into the ocean. Quite a number of accidents have happened in the past, due to these causes, and no doubt will happen in the future until some remedy is found.

Mr. H. Gernsback, who has given this problem consideration, seems to have found an astonishingly simple solution whereby it now becomes possible for an aeroplane to make a landing on a very small area, no matter what its speed. The present invention on which patents are pending is described herewith. Mr. Gernsback has also offered his invention to the Navy Department in connection with hydro-aeroplanes alighting on battleships at sea.

To grasp the idea clearly one has to picture a future landing station "somewhere in the city of New York", on which a transatlantic aeroplane is just settling; the landing platform in this case being constructed of a very heavy glass. Into this glass, which by the way is transparent, are sunk a number of large powerful electro-magnets such as are commonly used for lifting purposes. The idea of the transparent glass is that powerful searchlights can be placed underneath it, and the entire glass expanse therefore will stand out sharply from its surroundings. Thus, an aeroplane from a considerable height will see the landing platform readily by night.

The electro-magnets in this case would be quite large, say fifty or sixty inches across, each being capable of attracting about 200,000 pounds. These electro-magnets are by no means futuristic ideas. Large electro-magnets are being built right now that can lift anywhere from eight to ten tons at contact.

In further explanation of Mr. Gernsback's idea, it must be realized that the aeroplane has two iron-armoured pontoon-like projections instead of the usual wheels, or instead of the usual boats as are used on hydro-aeroplanes. It now becomes apparent that as the aeroplane comes within a few feet of these energized electro-magnets, there will ensue a powerful electro-magnetic attraction between the electro-magnets and the iron pontoons of the aeroplane. The tendency will be to pull the aeroplane down into contact with the electro-magnets, but inasmuch as the flying machine still has considerable momentum, it will not stop at once, but will glide over a number of electro-magnets until it finally comes within a few inches of the last row of electro-magnets when the maximum tractive effect will be had. The aeroplane will then be pulled down entirely so that the pontoons come into actual contact with the huge electro-magnets, completely arresting the flight of the airplane.

Now it must be understood, and it should be realized that these electro-magnets have no effect whatsoever upon the iron pontoons until the latter come within two or three feet of the electro-magnets. A metallic mass must come quite close to an electro-magnet before any appreciable attractive effect is had. From this it will be gathered that this invention does not purport to pull the aeroplane "out of the sky" as some people might think. It does not do anything of the sort. The idea simply is to arrest the motion of the aeroplane while in the act of landing and then hold the machine securely. If these electro-magnets were not used, then it undoubtedly would often happen that the aeroplane could not stop quickly enough, and in this case it might slide over the edge of the landing platform down into the streets. Also, while making a landing in a gale, such a huge machine, which necessarily must have a large wing area, becomes a toy of the elements; even if it had completely stopped, the wind might carry it away before the commander would have time to get the engines running at full speed. All this the electro-magnetic brakes will prevent. Once the aeroplane has settled, the electro-magnets will hold it as securely as if it had been riveted to the platform. Then after the landing has been made, the aeroplane can be readily secured to the platform by guys or ropes, so that the winds or storms cannot carry it away; this being only a matter of a few minutes, the power can then be turned off from the electro-magnets and no current is then used.

Another important point worth remembering is, that as the iron aeroplane pontoons fly a couple of feet above the electro-magnets the tractive effect, while not abrupt, is sufficient to retard the motion of the aeroplane gradually, and the electro-magnets in this respect will act exactly as the reversing of a ship's propellers in the water. In other words, the momentum of the aeroplane will be absorbed gradually and not suddenly. Furthermore, the pontoons may be equipped with small wheels, just extending a little distance from the lower surface if this is desired. Or, otherwise, the glass landing platform may be greased by means of some form of lubricant. If either of the two precautions were not taken, there would almost certainly ensue a terrific "grinding" action when the pontoons finally settled on the platform, and when the aeroplane was still in motion. However, these are small technical details left to our engineers; there are at present a number of simple means to effect a smooth final landing without the grinding element contained in it due to excessive friction.

One can readily realize how the invention can be adapted to hydro-aeroplanes making a landing on battleships and the like. As mentioned before, such landings at present are very dangerous, and often disastrous. The electro-magnetic brakes will do away with all this, and once a landing has been effected it will be almost impossible for the aeroplane to leave the narrow landing stage no matter how much the ship pitches, or what the wind velocity is. If the iron pontoons of the hydroplanes only engage two electro-magnets, an enormous tractive effect anywhere from two hundred to four hundred thousand pounds can be readily obtained. It is easy to realize how the invention works out in practice. As soon as the operator who is in control of the electro-magnets sees the oncoming aeroplane, he has it in his power to gradually switch on current into the electro-magnets. Thus, for instance, the two foremost electro-magnets can be energized but half or one-quarter if required, so as not to jerk the aeroplane or stop it too soon. In other words, a gradual braking action can be had at the will of the electrician in charge. If the rolling of the boat and the wind is very strong, he will use more power, or else he can "flash" the electro-magnets. By this is meant to overload the electro-magnets 50 to 100 per cent. Thus, an electro-magnet usually capable of attracting a weight of 100,000 lbs. can be energized by using double the quantity of the current to give a tractive effect of over 200,000 lbs. Naturally this would be only for half a minute or so, as otherwise there would be danger of burning out the windings. However, inasmuch as the aeroplane makes a landing in less than ten seconds, the "flashing" of the electro-magnets is of no consequence. As soon as the aeroplane has come to rest the blue-jackets will be ready to lash it fast, and then the current can be switched off."

A SHORT HISTORY OF AVIATION IN CHINA

In the second year of Hsuang-Tung of the Tsin dynasty (1910) the General Staff at Peking selected a place about ten miles from the south suburb of Peking, known as Wu-Li-Tieng in Nanyuan, for establishing an experimental flying field. The plan of this work was a simple one and yielded little efficiency. In the same year a Russian pilot made a flying exhibition with a Bleriot monoplane at the Legation Quarter, Peking. In the next year Mr. Valoon, a French aviator, flew with a Sommer Biplane in Shanghai. He tried to surprise his spectators with so many stunts in the air that he was unfortunately killed by accident.

During the Revolution of 1911 the revolutionary leaders planned to attack Peking from the air. They ordered two Etrich monoplanes from Austria which arrived at Shanghai in the following year when the revolutionary turmoil was entirely over. About that time Mr. Li-Zu-Yin, who had just returned to China from England, made several flights in Shanghai. While in Canton Mr. Feng-Juh was accidentally killed in a flying exhibition. In 1912 Mr. Li brought the two Etrich planes to Nanking and finally moved them to Wu-Li-Tieng.

In the meantime the General Staff established a flying school at Nanyuan (which is now known as the Nanyuan Flying School). For the flying practice of students, twelve Caudron Biplanes were bought. A factory was also established for the purpose of repairing aircrafts. The instruction staff of the school consisted of a Chinese and a French instructor who were assisted by two French engineers. Later the Aircraft Factory was amalgamated with the school. Since then the aeronautical training for students has never been neglected in spite of the difficulties of the importation of aircraft materials during the European war. At the end of 1918 about one hundred students were graduated from the school, of whom fourteen had passed examinations in military aviation and had flown over a distance of four hundred kilometers. In military engagements aeroplanes were then in active use, such as in the suppression of the "White Wolf", the relief of Mongolia and the Manchu Restoration of 1917.

Early in 1916 the Board of Navy began to draw its attention to naval aviation. Accordingly the Fuchow Submarine and Flying School was founded in the vicinity of the Fuchow dockyard. Mr. Chen-Shao-Tsiang was in charge of the school. Its faculty consisted of several students who had returned from America upon completing flying training. As the school was near the Naval Bureau, the machines of the Bureau could be easily put at its disposal. With this advantage the instructors made several sea-planes for training purposes. Unfortunately, the first plane, when tested, was wrecked owing to motor trouble.

In the winter of 1919 the Aeronautical Department was established to control all the air services of the country. Contracts were signed with the Handley Page and Vickers companies, by which the government promised to buy from the companies not less than 150 aeroplanes for training and commercial purposes and to employ foreign experts as pilots and instructors. In the spring of 1920, Colonel Holt, recommended by the British Air Ministry, was engaged as a technical expert to the Department for a term of two years.

Prior to the fall of 1919 there were two organizations for air administration, one was the preparatory aviation bureau known as Han-Kung-Shi-Wu-Chu, and the other was the aviation department in the ministry of communications. In the autumn of 1920, however, both of these organizations were amalgamated by a Cabinet order into the present Aeronautical Department.

Since the reorganization of the Aeronautical Department, the administrative works have been increasing every day. While General Tinn, the Director of the Department, controls all the affairs, its works are directly supervised by the Premier. Two of its accomplishments in commercial aviation are worthy of notice, one the air route between Peking and Nanyuan, which was started on April 2nd, and the other is the establishment of the Peking-Shanghai airline, which will be completed by the first of August. Other air lines are also planned. It is the hope of the government that within a few years China will be covered with a net work of commercial air lines.

A NEW ARMORED AIRPLANE ✓

A twin-engined armored airplane, designed to protect the pilot and gunners, has recently been designed by Liore and Oliver, a French firm. The purpose of the constructors was to supply the need for an airplane properly armored and at the same time light and maneuverable. The power plant of this new plane are two 9-cylinder 180 h.p. LeRhone engines, mounted in a streamline nacelle on each side of the central fuselage, which is constructed entirely of duralumin and is calculated to withstand six times the normal load. A series of tubes forming warren trusses is riveted to the longerons of the fuselage.

The pilot and the gunner who are in one compartment are protected by steel plates 0.276 inches in thickness, riveted together. The weight of the armor alone is 661 lbs. The gunner can either remain in his gun ring or seat himself behind the pilot and take control of the machine. To facilitate this, the gun ring is mounted on slides and can be moved backward.

The engines are supplied from a main tank having a capacity of 72 gallons, mounted in the nose of the fuselage, and by two gravity tanks in the top wing. All tanks are leak-proof. There is a pump for each of the gravity tanks, and by turning a tap in the pilot's cockpit one pump can be used for supplying both tanks if the other pump is damaged. Should both pumps be put out of action, the gravity tanks contain enough fuel for half an hour's flight. Each engine is held in place by Duralumin tubes attached to the interplane struts and the landing gear.

The plane has a speed at ground level of 114 m.p.h., and at 9,840 feet 108 m.p.h., with a ceiling of from 18,000 to 19,000 feet. The length of the machine is 27.2 feet, span 47.1 feet, height 11 feet and wing area 509 sq. ft. It can carry a useful load of 1,322 lbs.

With only one engine running, the machine has made a series of figure eight turns without losing altitude. In this test the full load of 1322 lbs. was carried, and a horizontal speed of 62 m.p.h. was made.

AUTOMATIC MEANS OF CONTROL FOR AIRPLANES

Apparently the day is at hand when the navigation of an airplane will require no more skill and self-reliance than does the driving of an automobile. A flight has recently been made from London to Paris and back, during which, for two consecutive hours, the pilot was enabled to depend entirely upon an automatic mechanical control for everything but the actual direction by means of the steering wheel.

In the past there have been many attempts made to devise an automatic mechanical control of the equilibrium of the airplane, thus reducing the work of the pilot to no more than that of an automobile driver; that is to say, attention to the steering and control of the motor. These past attempts embraced the utilization of the principle of the pendulum, which never held out much promise of success,

and also of the gyroscope, which, although successful as a stabilizer, was too complicated and cumbersome for commercial airplanes.

More recently a French inventor has produced a mechanical pilot by means of which all control except the actual steering is done either automatically or by readily made adjustments. The device has attracted a great deal of attention in England, where elaborate tests are now being made at both government and private aerodromes. This machine is so arranged that the pilot can retain personal control of the ailerons and elevator, as well as of the engine plant and rudder, as long as he likes, and also has the means, whenever he desires, to turn over to the automatic system the control of the ailerons and elevator simultaneously, or of the ailerons alone - but not the elevator alone - and in addition he can cut out both automatic controls, and use indicators that are installed on the dashboard of the airplane cockpit as an index as regards horizontality. It is more than a means of relieving the pilot from fatigue, for, when flying through clouds or fog he need no longer fear that he is "banking" unintentionally, while for landing, the control can be set so that the machine will descend at a predetermined angle, thus removing one of the dangers of night flying.

An essential element of the device is a compressed-air system consisting of two small compressors mounted beneath the fuselage, and actuated by a windmill, driven by the motion through the air during flight. The receiver for the compressed air is located in the cockpit, and is connected to a gauge under direct observation of the pilot, so that he easily maintains the required pressure of 60 lbs. per square inch. The compressed air is for the purpose of operating, in a horizontal cylinder, two pistons at the ends of a common connecting rod, which by moving to the right or left actuate the control of the ailerons and elevator, there being one such cylinder in each case. The action of these pistons is controlled by valves that are electrically opened or closed by the operation of a circular tube half filled with mercury, and so arranged that its inclination one way or the other makes or breaks an electrical contact on one side or the other, and thus opens one or the other of the valves. Above the pressure gauge, in full view of the pilot, is an electrical switchboard fitted with a small lamp on either side of it. Any inclination of the plane lights automatically one of the lamps, showing the pilot instantly which way the machine is inclining, enabling him, in the densest of atmospheric conditions to maintain a correct equilibrium. By means of a lever within his reach the pilot can throw the automatic control out of gear, whenever he desires to take personal control. When the pilot takes control the lights on the switchboard are his equilibrium guide. - Popular Mechanics.

COMING AERONAUTICAL DEVELOPMENTS.

In spite of the depressing conditions under which the aeronautical industry is laboring, the technical development of the flying machine is not by any means being neglected. On the contrary, experimental and research work of a bold and ambitious nature is being actively prosecuted in many quarters. Ideas are changing and advancing rapidly, almost if not actually as rapidly as they did in the war period. During hostilities the progress made was great outwardly but, in point of fact, it was very largely indeed composed of a refinement of detail, a growth in the absolute size of machines, and a development of the country's capacity to build them, their engines and accessories. Of genuine technical evolution, the war period showed much less than is ordinarily supposed. The airplanes at the end of it, with one or two exceptions, were substantially the machines of 1914 with increased performance and added powers. None of the belligerents could afford to spend much time in developing radically new and untried ideas. The progress effected was truly remarkable, but it was practically all made within the lines of the earliest machines to take the field. To-day, with the leisure enforced by the dullness of constructional activity, the country's aeronautical designers and research workers are exploring fields that, although visible during the war, were by force of circumstances all but forbidden to them. The evolutionary tendencies in play at the present moment are powerful and widespread, and if the industry can be granted survival for a space, they will almost certainly result in the near future in practical developments, besides which the progress made during the war will assume considerably less importance than we have been accustomed to accord to it in the past.

Let aerial transport, whether by flying machines or dirigible airships, attain an equal degree of safety, economy and trustworthiness to that of the railroad and the steamship, and it will be impossible for the public to avoid accepting it as a part of its daily life. - The Engineer (London)

UNIFORM LAW TO GOVERN AVIATION

A subject that is receiving consideration at the Annual Convention in Cincinnati of the American Bar Association is the establishment of a uniform law regulating traffic in the air throughout the United States. The DAYTON JOURNAL states that "there is beginning to be a recognized need for such a law, as flying becomes more common and the number of aviators increases. A committee of lawyers has been cooperating with committees of aviators and airplane manufacturers in drafting the laws. The proposed act no doubt will include recognition of right to fly over private property if the aircraft is at a sufficient height to do no damage and to permit of its safe landing in case of accident, also that aviators will be liable for damage done to private property. Just now the greater need for such regulation exists in cities over which much flying is being done at so low altitudes as to constitute a menace to life and property".

UNUSUAL INCIDENTS IN AVIATION

Robert Hamiel, an aviator of Columbus, Ohio, learned to his cost that it does not pay to paint an aeroplane in a red color. Recently while flying over Columbus he was forced through engine trouble to land in the Oval at the Columbus Driving Park race track. While awaiting repairs Hamiel left the ship in the Oval. It happened, however, that a bull was turned loose into the pasture adjacent to the Oval, and the red ship immediately became a victim to his ire. Charging the plane again and again with his horns it was not long before the fabric covering the lower wings and other covered parts were tattered and torn.

Probably one of the most remarkable and miraculous escapes from death or serious injury in an airplane crash occurred at Ellington Field on the day the Armistice was signed. A second lieutenant was flying over the field at an altitude of about 5,000 feet when, through some cause which could not be determined, the plane fell into a tail spin. The pilot, instead of trying to pull the ship out of the spin, which he could have accomplished at such an altitude had he kept his wits about him, apparently gave up all hope. He buried his head in his arm and pressed it hard into the cowl of the ship, thereby taking up almost all of the shock. The plane crashed and was a total wreck. Strange to say, however, the pilot escaped without a scratch, and the Flight Surgeon in making a report on this crash stated that the pilot's action, as above described, no doubt saved his life.

From England comes a rather unusual story of a battle in mid-air between the pilot of an army airplane and an observer who went mad while the plane was several thousand feet in the air.

Flight Lieut. Paul W. S. Bulman of the experimental section of the Royal Aircraft establishment, ascended with an observer to make an altitude test. At a height of several thousand feet oxygen was used, and possibly through some flaw in the apparatus the observer became insensible. The lieutenant, alarmed at his companion's state, began descending, when suddenly he received a severe blow on the head. Glancing behind, he discovered that his observer apparently was insane.

What happened during the descent is not fully known, but Lieutenant Bulman managed to land safely, although he slightly damaged his machine in doing so. Leaving the cockpit of the machine, the pilot again was attacked by the observer, but mechanics who were nearby went to the lieutenant's assistance. A half hour later the observer recovered his reason.

The above incident recalls to mind a most serious difficulty which some airplane instructors had to contend with at our flying fields during the war. Some students, becoming terror-stricken during the flight in the air "froze to the controls", defying the efforts of the instructor to properly manipulate them. The instructor in such cases had to resort to extreme measures in order to cause the student to release the controls.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England.

As the result of examinations for the entry of boy mechanics into the Royal Air Force held during the first six months of 1921, approximately 500 boys will be taken into the Force. The successful candidates will be allocated for training in various skilled trades in approximately the following proportions: Carpenters, 150; Coppersmiths, 30; Draughtsmen, 10; Fitters, 300; Pattern Makers, 10. Boys accepted for service will be taken both from those who have been nominated by the Local Education Authorities for examination, and those who took the open competitive examinations held by the Civil Service Commissioners. In assigning boys to the various trades, endeavor is made to give effect to each boy's individual preference.

Italy.

A group of 50 representatives, called the "Group of Aeronautics", has been created in the Italian House of Representatives, its purpose being to study and develop all aeronautical questions and the organization of commercial aeronautics and international aerial navigation. In the meetings held by this Group they have considered bills to be approved by the House concerning aeronautics and the ratification of the International Convention of Aerial Navigation. Hon. Gasparetto, who was one of the most active members of the Group, is now Secretary of War, and this will signify a great improvement in civil and military aviation in Italy.

Switzerland.

The report of the work of the Swiss Air Force during the year 1920 shows that 12,380 flights were made for a total duration of 3,532 hours. In this number of flights only 8 accidents occurred. No one was injured in these accidents, but there were two deaths as the result of crashes during non-service flights. In the training of airmen in Switzerland, which included an average of 10 hours flying per month, special stress was laid to the development of safety in flying.

Bohemia.

Airplanes, balloons, airships and engines, together with parts and material for their construction, as well as apparatus, tools and other material used in aircraft manufacture, will be exhibited at the Second Annual International Aircraft Exposition, which will be held in the Palace of Industry at Prague from October 22 to 30 next. The great success which marked the First International Aircraft Exposition in Prague in 1920 has encouraged the aviation authorities to arrange yearly exhibitions and has assured them that all firms interested in aeronautics will take advantage of the opportunity offered them to show their products. At the conclusion of the exhibition, a special festival will be held on November 6th to afford the exhibiting firms an opportunity to demonstrate the flying qualities of their machines.

There is now a regular air service between Paris, Prague and Warsaw, and it is contemplated opening up a similar air service in the near future between Berlin, Prague and Vienna.

Japan.

Japanese aviation authorities, it is announced, are making preparations for the establishment of an aerial port near Tokyo. This port is intended to be the first of many airdromes to be constructed in Japan, Korea, Saghalien, etc. It is to comprise a training ground, landing place, warehouses, customs house, hospital, wireless installations, a signal tower, etc., also equipment for night flying. The fact that this air port will be placed under the control of the Imperial Japanese Aviation Bureau will serve to make it an important military asset in time of war. In time of peace, however, it will be a welcome training ground for civilian aviators who have long felt the necessity thereof.

China.

Excellent progress is being made on the Peking-Shanghai air line, which consists of six sections - Peking, Tientsin, Tsinanfu, Nanking, Hsueh and Shanghai. Between these different stations it is contemplated establishing several landing fields. Pending the completion of the airdromes at the above-named stations, the Aeronautical Department of China has established a School for Air Service Administration in order to provide administrators for the airdromes. Students of the school are chosen from among the members of the Aeronautical Department and graduates of the Nanyuan School of Flying. The number of students is 30, and the courses of study which will be given them will embody only necessary and elementary knowledge in air service administration and will be finished in three months. After graduation the students will be sent to the different airdromes.

The Nanyuan Aircraft Factory has been removed to Tsin-Ho, and 20 Avros and 24 Vimy planes have been transported to the latter place for service in connection with the Peking-Shanghai air line.

The Aeronautical Department has issued an order to the effect that the flying personnel will be subjected to a medical examination every six months. The first examination this year was held in April.

Germany.

Germany, one of the foremost nations of the world to-day in respect to aerial development, has the honor of being the first to publish an aerial Bradshaw - a substantial pamphlet of nearly a hundred pages - filled with aerial time tables as definite as those of any railroad guide. There are 14 pages of regular daily departures and arrivals at towns within Germany. It is impressive to see the rows of figures giving the schedules, when one realizes that these are for the trackless deserts of the air. The long-distance service, by arrangement with the various surrounding countries, extend to Amsterdam, Brussels, Paris and London, on the west; to Copenhagen on the north; to Prague and Warsaw on the east, and to the lost German territories of Memel and Danzig on the northeast. Airplanes loaded with German newspapers leave Berlin every morning for these former dominions, which it is Germany's intention to keep constantly in touch with Deutschland. Hydroplanes serve the same purpose for Schleswig. These planes are waiting at Hamburg for the train deliveries, and immediately after the mail is transferred they leave for the Island of Sylt, off the coast of Schleswig, the residents of which can thus read the opinions of their German compatriots at home on the issues of the day. Among the advertisements in the aerial Bradshaw is one in which the Hamburg-American Line offers to send passengers or goods to any town in Germany.-- N. Y. Times Current History.

The Netherlands.

The airplane service between Amsterdam and cities in other countries has been much extended and is being used far more this year than in 1920. Special machines were built to carry several passengers. Airplanes fly every day from Amsterdam to London, Paris and Hamburg, and vice versa, each carrying three or four passengers and also mail and packages. The increased carrying capacity of each machine allows a reduction of fares, so that the rate from Amsterdam to London is now 100 florins (\$40.20 normal exchange) and 180 florins (\$72.36) for the round trip, instead of 150 florins (\$60.30) for one way in 1920. This reduction makes the cost but little, if any, more than that of the journey by rail and steamer with first-class accommodations. Besides, the latter consumes 13 to 15 hours' time; the airplane about 4 hours. Thus a person can lunch at his home in Amsterdam and dine in the evening of the same day in London by taking the airplane route.

SQUADRON NEWS

Carlstrom Field, Arcadia, Fla., August 17.

Captain Harold E. Sturken, A.S., and Captain Romeyn B. Hough, A.S., have departed from this station to Langley Field, Va., where they are to take the course at the Field Officers' School.

1st Lieut. Dean B. Belt is now on leave while awaiting orders for advanced training.

During the period August 1, 1920, to August 1, 1921, a total of 108 officers, 9 foreign officers, one officer of the Marine Corps and 131 cadets, a total of 249, took the course of flying training at Carlstrom Field. The class of June 1, 1920, comprised 97 students, of which number 51% graduated; the class of November 1, 1920, comprised 78 students, of which number 72% graduated; and the class of April 1, 1921, comprised 74 students, 60% graduating. The total flying time for the above period was 14,931 hours and 52 minutes. Six students were killed in airplane accidents, so that approximately 2,488 hours were flown to each fatality.

The Carlstrom Field Baseball Team defeated Zolfo by the score of 6 to 0, Terrill pitching a steady game and allowing but two hits. On Saturday the team played an unknown aggregation at Bartow, Fla., and was defeated 3 to 1.

Fairfield Air Intermediate Depot (Wilbur Wright Field) Aug. 27.

Major George E.A. Reinburg has been relieved from duty as Commanding Officer of this station and assigned to duty in the Office of the Chief of Air Service, Washington, D. C. The officers of the post entertained Major and Mrs. Reinburg at a dinner on the 24th.

First Lieut. William H. Webb, Air Service, returned on August 22nd from a fourteen days leave of absence.

Captain Blair, Lieut. Mann and Lieut. Webb left for Washington, D.C. on temporary duty in the Office of the Chief of Air Service.

On Friday, August 19th, the E. & V. Class of Music at this station, commonly known as the Wilbur Wright Field Band, played a concert at the Old Barn Club in Dayton, Ohio, for the Daughters of the American Revolution.

Master Sergeant Herbert G. Knight, Supply Detachment No. 2 of this station, formerly a Captain in the Air Service, received notice of his appointment as Warrant Officer on August 20th. He will remain on duty at this station.

Due to the recent discharge order, the garrison has been reduced from a total of 440 enlisted men on July 1st to 177 enlisted men on August 1st. As a result of this reduction it has been found necessary to discontinue the class in E. & V. training in instrumental music.

There seems to be a strong probability that a National Guard Squadron will be sent to this station sometime in September for a two weeks' course of training.

Hqrs. Flight B, 91st Squadron, Camp Lewis, Washington. August 13.

Forest patrol, suspended since July 23rd on account of shortage of gasoline and oil, was resumed last Thursday. Staff Sergeant Cecil B. Guile, with Forester Carlton Dark, made the first patrol flight. Eight new fires were reported by radio on Thursday and five on Friday. Gasoline and oil used to carry on this work is being purchased by the State of Washington.

Eleven enlisted men, including one pilot, were discharged on Friday, August 12th.

Hqrs. 91st Squadron, Municipal Flying Field, Eugene, Oregon. August 13.

The past week saw the movement of the Medford, Oregon, base to Eugene. The entire personnel arrived last Friday with the exception of two enlisted men, who were left to take care of property and of the gas and radio station.

Lieut. Grandison Gardner, A.S., is on leave of absence for ten days. Lieut. R.S. Worthington, A.S., is under orders to proceed to McCook Field for duty. Lieut. Catlin has been requested in his stead.

Hqrs. 91st Squadron, Municipal Flying Field, Eugene, Oregon, August 13. (Cont'd)

The 91st Squadron Baseball Team added another game to its long list of "wins" by defeating the "Coyotes" last Sunday in a loosely played game, 19 to 17. Fully 2,000 people witnessed the game.

Ten enlisted men were discharged under the orders for the reduction of the Army. It is anticipated that about 26 additional men from the squadron will shortly be discharged.

Balloon Company No. 31, Camp Knox, Ky., August 20.

Last Saturday the Field Artillery School gave their farewell dance, which was a fine affair and enjoyed by everyone present. Mrs Paine, wife of Major Paine, the Commandant, was presented with a beautiful silver bowl. General Lassiter had as guests at the party Miss Margaret Read, daughter of General Geo. W. Read, Corps Area Commander, Lieut. Read, and Mr. and Mrs. L.P. Ewald of Louisville. Guests of Lieut. Farnum for the dance and week end were Lieut. and Mrs. Shea, Miss Hardy, Miss Bulkeley and Mr. Asa Fuller of Louisville.

The weekly Company Athletic Days has so far resulted in a tie between the First and Second Platoons. Last week the First Platoon came to the front, and by taking the Tug of War and baseball game overcame the lead the Second Platoon secured in the races. Next week promises to be the occasion of a hard fought battle, each platoon being confident of victory.

Camp Knox has at present over 8,000 troops. A number of National Guard regiments are now here in addition to the C.M.T.C., which has nearly completed its month of training.

Monday morning the whole class of student officers of the Field Artillery School came out for a lecture and demonstration on the Balloon and its functions and operation. Lieut. Farnum gave a lecture concerning the early history of the captive balloon, its development, uses, construction and operation. All of the company equipment was arranged for inspection, the company being lined up in technical sections. On completion of the lecture the class was taken for an inspection and explanation of the equipment. Following this, the company took post on the balloon in its bed, and the maneuvering and handling of the balloon was demonstrated step by step. Lots were drawn and fifteen officers were taken up for a ten-minute flight each. During these flights the methods of crossing obstacles by means of the transport cable, long rope, short rope, rest rope, blocks and spiders were all demonstrated. The balloon net of telephone communication in use here with the Artillery was then explained, and the chart room and its records, maps and photos were shown. Radio Telephone and Radio Telegraph and its uses by the balloon were explained and demonstrated. All the student officers seemed intensely interested, as the many inquiries afterwards received by the company officers demonstrated.

Work with the School was continued in the afternoon. The class was out at O.P. #7 watching the conduct of "shoots" on targets across Salt River. On Friday the observation for the School was nearly axial, so on Monday observation was made from the flank. The BT line made an angle of 48 degrees with the OT line. The results secured were excellent, the weather being ideal and the visibility excellent. It appears that observation on the BT line can be conducted satisfactorily at very much greater angles than 30 degrees.

On Tuesday the balloon was deflated and layed out in the hangar undergoing air test and minute inspection.

On Thursday morning the First Platoon started instruction target practice. Considering that this is the first time on the range for practically all of the men, the results were quite surprising. The Second Platoon fired their instruction praction on Friday, with equally good results. Record practice will be held on Monday and Tuesday.

Ross Field, Arcadia, Calif., August 15.

A semi-monthly officers' Hop was held at the Officers' Club on Friday evening, August 12th. As usual, the affair was attended by the officers and their families and friends from the surrounding country. Several novel features, such as balloon dances and the like, were included in the program, and the Hop was unanimously voted the most successful recently held.

Ross Field, Arcadia, Calif., August 15, Cont'd.

The swimming pool at the Santa Anita Officers' and Enlisted Men's Club was opened on Sunday, August 7th, and since then dips have been enjoyed daily by all members of this command.

A course in minor tactics was recently included as a part of the Balloon Observers' Instruction. The field problem was held on Wednesday, August 10th. The students observe and report on a simulated advance of a battalion of Infantry with supports. The observations were made from an elevated position at Fish Canyon, and the action was conducted on the neighboring territory.

Upon the completion of the Mountain Course of Observation on Friday, August 12th, Sections 24, 25, and 26, consisting of Colonel C. G. Hall, Majors James A. Mars, A. W. Barry, Rush B. Lincoln, Robert Coker, Walter W. Vautsmaier, Captains Henry C. White, W. D. Wheeler, and Lieutenants J. P. Temple and A. J. Clayton, returned to Ross Field. Sections 23 and 24 are now taking the air course, and Sections 25 and 26 are rapidly completing the ground course. Time for the past week was confined to captive balloons, 86 flights being made for a total of 110 hours and 43 minutes.

Mather Field, Sacramento, Calif., August 13.

The officers of the command gave a banquet on the evening of the 11th in honor of Captain R. L. Walsh, A.S., who left on the 12th for McCook Field to enter upon a course of instruction at the Air Service Engineering School at that place. The banquet also served as a welcoming fete to Captain Charles J. Kindler, Q.M.C. who has relieved Captain J. D. Goodrich as Quartermaster of this station, and as a farewell to Captain Goodrich. Lieut. Frank D. Hackett, A.S., acted as toastmaster, and gave a comprehensive talk on the aspects of the Air Service, which was roundly applauded. A sterling silver memento was tendered Captain Walsh by the older officers of the 9th Squadron (Observation) which had been under Captain Walsh's command. Major B. M. Atkinson, commanding officer of the post, made the presentation.

Lieut. Hugh Minter returned on August 11th from Corning, Calif., having reported to that station on the 8th to relieve Lieut. Ned Schramm, who was temporarily in command during the absence of Lieut. John R. Morgan, Detachment Commander. Lieut. Schramm returned to the post the same date.

Cadet James E. Doles left on the 8th by automobile for Los Angeles, Calif., to visit friends. He will proceed from Los Angeles to Rockwell Field to ferry one of the new planes back to this station.

Lieut. G. A. McHenry returned from Rockwell Field on the 8th ferrying a new plane from that field.

Lieut. A. G. Liggett and Capt. Louis M. Field, M.C., Flight Surgeon, made a trip by plane to Frisco and return on the 11th.

Lieut. E. B. Bayley, in command of the detachment at Visalia, visited Mather Field on the 10th and returned the same day.

Mr. Hess of the Forestry Service arrived at the post on the 13th in connection with Forest Fire Patrol matters.

The following changes in assignment of commissioned personnel has been made: Lieut. E. B. Bayley, who has been in command of the Visalia sub-base, returns to Mather Field to assume the duties of Post Operations Officer and command of the 9th Squadron (Observation). Lieut. G. A. McHenry has been ordered to Visalia to take command of Flight "A", 9th Squadron (Observation). Lieut. J. R. Morgan assumes the duties of Operations Officer, Lieut. J. R. Morgan assuming command of the sub-base at Corning.

Flight "B", 12th Squadron (Obs.) Nogales, Ariz., Aug. 27.

The baseball season has come to a close here after a very successful season. As soon as the squadron is united, football practice will begin. All the men seem to be very enthusiastic over football, and it is expected that a very good team will be developed.

1st Lieut. R. D. Knapp returned on the 22nd from a six day hunting pass, spent in Mexico, his headquarters being at the Alamo Ranch, Magdalena, Sonora, Mexico. According to his story he returned every night loaded down with game,

Flight "B", 12th Squadron (Obs.) Nogales, Ariz., Aug. 27, Cont'd.

and on one afternoon he captured a fawn after running it several miles. To our regret the Lieutenant returned home empty handed.

Captain Thomas W. Hastey, who has been in command of this squadron for four months, has left on a two months' leave of absence, expecting to spend most of the time on a camping trip in the mountains around Santa Fe, New Mexico. He has invited the other officers of this squadron to spend week ends with him, as there are very good hunting and fishing places in that part of the country.

Clark Field, Pampanga, P. I., July 2.

Captain Clarence L. Midcap, Property Officer, and First Lieutenant Martin S. Lindgrove, Adjutant, have been relieved from the Third Squadron and assigned to Clark Field for duty.

Lieut. Raphael Baez, who arrived from the States on the last transport, has been appointed Summary Court Officer, Survey Officer, and Squadron Mess Officer.

Captain Charles T. Phillips is on detached service in the Southern Islands, and Lieutenant Charles L. Webber is spending a month in Baguio. Captain Phillips' absence leaves Lieut. Henry I. Riley in command of the Third Squadron.

Lieutenant Leland C. Hurd is in command of the newly organized 11th Air Park, which unit has just been brought up to strength by the transfer of men from Fort Mills.

There has been very little flying during the past week on account of the constant rains.

Kindley Field, Fort Mills, P. I., July 2.

The Fort Mills baseball team, with the all-star players from the Air Service, administered two consecutive defeats to the 45th Infantry baseball team from Fort McKinley last week, the scores being 10 to 2 and 5 to 4.

Considerable change in the status and stations of enlisted men has been made during the past week to comply with Tables of Organization and new strengths of organizations. A number of men from the 17th and 27th Balloon Companies and the 2nd Squadron have been sent to the 4th Observation Group, some to the 11th Park Squadron stationed at Camp Stotsenburg, and others have been assigned to these latter two organizations but attached to their original organizations for duty, quarters and rations.

Weather conditions during the past week has made absolutely impracticable any attempts to launch planes.

Lieutenant Wood returned from a twenty-day period of detached service tour made to China in charge of casualties.

In spite of the inclement weather efforts will be made to send out a formation flight of five H. S. 2 L. flying boats to escort the Transport LOGAN, with Major E. Q. Jones, Air Service, aboard, into the harbor. Major Jones has been designated Department Air Officer, vice Captain Eaker, Acting Department Air Officer. It is hoped that weather conditions will not defer this recognition.

Headquarters Detachment, 4th Group (Obs.) Panaraqua Beach, Manila, P.I. July 2.

At 5:00 a.m. on the morning of June 26th, Captain Ira C. Eaker took off from Panaraque in a DH-4 plane, with Sergeant Bolton, Corps of Engineers, as observer; landed at Clark Field to change planes; secured a DH-4 rebuilt for cross-country flying; left Clark Field at 5:50 a.m., flew north, touching the coast first at San Fabian, thence north along the coast over San Fernando, Vigan and Cape Bofeador, thence east to Bangui. He arrived over the site chosen last year by Major Brown, Air Service, as an emergency field, but a close inspection of it at a low altitude showed that it was not suitable in its present condition for a landing field. From there the flight continued on east over Aparri, Palau Island, and Cape Engano, thence south along the east coast over Pandanungan Point, Aubarede Point, Cape Ildefonso, Bolver Bay and Palillo Straits, thence inland to Manila. This flight around the Island of Luzon made it obvious that even with the limited number of pilots in the islands it would be possible to

Headquarters Detachment, 4th Group (Obs.) Panarague Beach, Cont'd.

maintain a daily patrol around the Island of Luzon. Two planes, one starting North and the other South, could easily maintain a double patrol of the entire coast line of Luzon. In the event of hostilities, this would be invaluable, as our numerous bays and gulfs afford ample opportunity for an enemy to land.

Captain Eaker, with Major Staples, Infantry, as a passenger, piloting a DH-4 rebuilt for cross-country flying, had a forced landing Monday at Manila. The engine cut out shortly after leaving Panarague for Clark Field, and the pilot had a choice of landing on Cavite Boulevard or of taking a ducking in Manila Bay. Owing to the traffic conditions on the Boulevard, it was impossible to effect a landing there, so the pilot "pancaked" her down in the Bay. However, the plane had enough momentum to catapult the pilot over the wings and into the water, while the passenger was suspended by one foot, head down in the water. Practically no damage resulted from dropping the ship in the water, but a rough sea, stirred up by the typhoon winds, soon made a total wreck of it. After striking the water, the ship remained afloat and intact for two hours and fifty-five minutes in spite of the roughness of the sea. A Quartermaster launch and floating crane were summoned and succeeded in picking the badly wrecked DeHaviland out of the sea. Neither the pilot nor passenger was injured. The experiment showed that landing on water with a DH-4B, while not to be desired, would probably only result in minor inconveniences, as against the more serious consequences sure to follow an attempt to land on other than a regular landing field in the Islands.

Shipping instructions have just been received from the States for six German Fokkers for service in the Philippines. The arrival of these planes is looked forward to by all pursuit pilots in the Islands, as all have an occasional longing to get back to the little single seaters after many weary months in the heavy DeHavilands.

24th Balloon Company, Fort Miley, Calif., Aug. 20.

The 24th Balloon Company, upon the completion of its duties with the Citizens Military Training Camp at Crissy Field, Calif., was moved to Fort Miley, Calif., for temporary station. This organization is still continuing operations in spite of the depleted strength due to the reduction of the Army, and in spite of the prevailing high winds and fogs.

The balloon was flown on August 17th for the inspection of Major C. D. E. Bridge, Assistant Military Attache of the British Embassy. As usual there was considerable wind, and the basket was swaying and diving all during the ballast flight, but Major Bridge's nerves did not fail him in the crucial moment, as would naturally be expected of a non-flyer. Major Bridge was accompanied aloft by Captain Ivan B. Snell, commanding officer of this organization.

Air Service Mechanics School, Chanute Field, Rantoul, Ill., Aug. 29.

The dance at the Officers' Club on Friday, August 26th, was attended by the officers of the post and several visiting reserve officers.

Lieut. Howard C. Brandt, accompanied by his wife and daughter, returned August 26th from a leave of absence.

Nine reserve officers reported at this post during the past week for flying practice and training. Quarters at the post are available for reserve pilots, and arrangements have been made for them to take their meals at the Officers' Club. Every effort is used to make their stay pleasant, and capable instructors are available at all times to check their flying.

Mrs. Betts, the wife of Major C. A. Betts, who is on temporary duty at this field as post surgeon during the absence of Major Wm. H. Smith, arrived here Sunday from Camp Grant, Ill. She made the trip by automobile, and reports a very pleasant journey.

Orders have been received to discharge 124 enlisted men under the recent orders from the Secretary of War directing the reduction of the Army. This will leave about 300 enlisted personnel at this post, including students and the permanent detachment.

Lieut. Langhorne W. Motley was granted leave of absence for three days to visit relatives in Indiana.

The officers of the post are going to hold a tennis tournament on Saturday, Sunday and Monday of next week.

Air Service Mechanics School, Cont'd.

Only five applicants appeared before the Board of Officers in session during the week of August 22-27 to examine candidates for a commission in the Regular Army.

Langley Field, Hampton, Va., August 27.

Captain and Mrs. Voss entertained at their quarters Saturday evening in honor of Col. and Mrs. Danforth. A buffet dinner was served, after which the party went to the Officers' Club where the evening was spent in dancing. About sixty guests were in attendance.

Lieut. and Mrs. Fred Place, formerly stationed at Langley Field, left for Kelly Field on Wednesday, after a visit with friends here. Lieut. Place has been ordered to Kelly Field for duty.

Miss Eloise Robinson of Elizabeth City, N.C., and Miss Janet Wetmore of Washington, N.C., are the guests of Major and Mrs. Neblett. Major and Mrs. J. S. Gaul of Washington, D.C., are also visiting Major and Mrs. Neblett. Major Gaul is stationed at the Walter Reed General Hospital.

Lieut. and Mrs. Torney have as their guest Mrs. Torney's mother, Mrs. A. Hutton, and Master A. Hutton, Jr.

Lieut. J. M. McDonald entertained at the Club last Thursday evening with a party of sixteen guests.

Major Sherman entertained at the Club on Thursday evening. Covers were laid for 18 guests. On Saturday evening Major Sherman entertained at the Club with a dinner dance.

Mrs. Burt, wife of Lieut. Burt, is visiting relatives in Chattanooga, Tenn.

Miss O'Mara, of New York, is the guest of Lieut. and Mrs. Torney.

That the new arrangement at the Officers' Club which makes provision for one large club table at the regular dinner dances is meeting with the approval of many members is evidenced by the growing popularity of the Club table.

Mrs. R. B. Harding returned to the field Saturday after several weeks' visit with her parents, Mr. and Mrs. Stonebraker, of Arcadia, Fla. Mrs. Harding has as her guest Miss Maud Stonebraker, her sister.

Lieut. L. W. Miller has been appointed Assistant Commandant and Officer in Charge of Training of the Photographic School, relieving Lieut. James P. Hodges.

Captain Hal. T. Vigor, Q.M.C., has reported for duty at Langley Field and assigned to duty as quartermaster. Lieut. Glenn D. Gorton has been detailed as assistant to the Quartermaster.

Now that the baseball season has closed at Langley, everyone is looking with enthusiasm for the football season to open. The gates to this grand old game will be opened wide enough on September 5th that every man on the field can enter and start to training down with the old pigskin in order to get in shape for the Post League as well as try for a berth on the Camp Team. Lieut. Ignico of the Lighter-than-Air branch has been appointed to coach the Langley Field postteam. Four teams will be entered in the Post Football League, the Airship, 88th, 50th and F.O.S.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE SEPTEMBER 17, 1921.

AERIAL PHOTOGRAPHY

Modern tactics demand an exact knowledge of the ground occupied by the enemy, and as aerial photography has developed intelligence gathered by agents or extracted from prisoners has fallen into desuetude. A good photograph reveals everything - the position and details of a work which can be translated from the photograph to a plan. The vertical view is the most useful, but as even this presents features in quite an unfamiliar aspect much study and experience are required to interpret them correctly. Successive views taken after certain intervals and views taken at different times of the day help to elucidate the features on a photograph and it is often quite unsafe to make a report from the examination of a single photograph. When ground has been camouflaged the fact can be detected by comparing a photograph taken after the camouflage with one taken before it was interfered with. Again, photographs taken immediately after a fall of snow may reveal gun positions by the scarring effects of firing on the snow. Enemy works can be detailed with a considerable degree of completeness, though it needs a trained eye to interpret them correctly. Trenches, barbed wire entanglements, listening posts, dug-in shelters, dug-outs, pill boxes and breast works can all be picked out, the last differentiated from trenches by observation of the shadows they cast. Gun positions in the later stages of the war were always camouflaged, but by a trained eye they could be traced by many collateral indications such as a disturbance of the earth, a convergence of tracks, blast marks, telephone cable trenches, etc. Not only can objects be discerned but even enemy intentions can be surmised by noting works he is concentrating on; for example, if he is strengthening his works he is probably expecting attack, and on the other hand his dispositions may reveal that he is contemplating attack himself. In the next place the camera helps to reveal the effects of an operation, which it is often most important to know so as to realize the amount of damage done. For example, it can bring to light where the majority of shots had fallen and so help in the conclusion as to whether a battery may be classed as destroyed, damaged or uninjured. Knowledge of this kind may determine an immediate assault, and consequently a quick reproduction of photographs is often of enormous strategic value. Thus, the air force photographers were trained to dispatch prints from a batch of negatives in something like one hour after the plates were sent in. During the Gaza-Beersheba operations of October, 1917, the Beersheba section was photographed daily about noon; the prints were produced, examined by the intelligence staff, and the new positions and latest information drawn up in map form shortly afterwards; this map was copied by photography, and copies of it were dropped by an airplane on the headquarters of all units in the field, about 5 p.m. on the same afternoon.

Aerial photography has in no small measure modified old war tactics. It is now no longer necessary to struggle for commanding positions in the battle area so as to gain points for observation of the enemy's dispositions; better information is in fact gained from the photographs. Once his plans have been mastered by a study of his divisions, counter plans of attack can be rehearsed in detail and launched with a degree of certainty. Further, by means of aerial photography a whole road can be surveyed and critical points on it ascertained. Then if the enemy can be forced to retire along this road, these crucial points can be heavily bombed from the air and the retiring enemy utterly routed. These tactics were followed twice by General Allenby in Palestine, and two retiring armies of the enemy completely shattered. Roads in hilly country are of course best suited for this line of operations.

The advantages are no less evident in peace operations. When a general idea of little known country is wanted, a series of oblique air photographs convey an excellent idea of contours, vegetation, etc. In the case of Palestine recent changes in the course of the Jordan have been indicated, terraces left by the progressive deepening of the river bed through centuries can be traced; also deposits formed in the old lake which once filled the Jordan valley, and the water courses which in former ages drained into the valley but are now dry. Again, the connection which existed between the Jordan valley and the drainage of central Syria has been indicated, and the gorge through which the rivers from the Lebanon formerly flowed into the Jordan valley has been disclosed. This kind of survey has been successfully tried also in India for depicting the kind and extent of crops, the result being that it was rapidly estimated what was the area covered by certain kinds of crops. Air photography is also of the greatest value to archaeology. As a concrete instance, views of the ruins of Samarra dating back to the ninth century gave the outlines and plans of streets and buildings, whereas viewed over the ground nothing was presented but heaps of earth and rubble.

We come now to one of the most important functions of the camera, which is the production of a true scale map of the country. To do this the position of certain prominent objects on the landscape must be fixed trigonometrically and plotted, and photographic pictures must be taken around these. The necessary corrections of the photograph must then be made, dependent on the distance of the camera from the ground, the focal length of the lens, the angle between the plane of the plate and the plane of the ground, etc. With all these factors worked out measurements taken on the photograph can be reduced to true topographical measurements and a correct topographical map drawn. This is the method in bare outline but the details of the process are far from simple, being complicated by the non-horizontality of the camera and the hilly nature of ground, more especially where slopes are steep. It will thus be seen that at present we are dependent on a basis of actual ground measurement upon which to build photographic work. When we turn to the mapping of congested cities it can be at once seen that, instead of the laborious method of detailed measurement, aerial photography offers a ready and cheap alternative. A survey so made costs no more than one-tenth of the cost of a regular topographical survey and is quite good enough for police and administrative purposes. If required for more exact uses, the map can be improved afterwards by measurements by more or less unskilled labour. Since aerial photography reveals shallows, sand, banks, rocks near the surface, etc., it is considered a good medium for the depicting of rivers and harbours. In regions such as the river Hooghly (India) where changes in the channels are frequent and form a deadly menace to navigation, the use of the air-camera reconnaissance is almost certain to become, in the course of time, an important factor in adding safety to navigation and assisting the development of trade.- Indian Engineering.

FIRST GLIDING FLIGHT TO A DESIGNATED GOAL.

A newspaper dispatch from Berlin, Germany, describes the first cross-country flight ever completed with a gliding airplane to a goal designated beforehand, which was carried out by Dr. Klemper. He started from Wasserkuppe, at the summit of the Rhoen Mountains, in middle Germany, and flew to the small town of Gersfeld, flying over six villages on the way. His flight lasted thirteen minutes and was only made possible by the use of wind-garments with which the pilot climbed 100 metres higher than the starting point and never lost that height until shortly before he descended.

The flight was carried out the day after the closing of the second gliding airplane tournament in the Rhoen Mountains, in which forty-five planes competed. In the contest the longest flight lasted five and one-half minutes and the longest distance covered was 4,200 metres, a little more than 2½ miles. Much importance is attached to these experimental flights with engineless planes in aviation circles in Berlin, as it is hoped they will lead to the construction of small, low-powered planes.

SADI LECOINTE WINS.

Sadi Lecoite, the French aviator, won the aviation grand prix at Breavia, Italy, on September 5th, flying 300 kilometers (186.41 miles) in one hour, 13

minutes and 19 seconds. Lieutenant Brakpaha, of Italy, finished second in one hour, 28 minutes and 58 seconds.

SEAL HUNTING BY AIR

In a recent issue of the London ILLUSTRATED NEWS, Edgar C. Middleton contributes an interesting article on the above subject, which reads as follows:

"The story of man's conquest of the air has only just begun, for aviation is continually attacking new worlds. The latest advance has been made in alliance with the squatter, the trapper, and the hunter. Airmen recently have been assisting the hunters along the Grand Banks of Newfoundland in tracking down seals.

It happened in this way. A Newfoundland sealing captain who had returned to his calling from the war had watched the airmen hunting down U-boats among the grey wastes of the North Sea. He became aware of a certain similarity to his own business of sealing. There is something of the seal in a submarine, more than the fact that their habits are similar. The sealing captain put two and two together. An aerial observer who could spot the elongated form of a submarine from a distance of forty miles at 5,000 feet should add many hundreds to the catch when it came to seal-hunting.

His idea materialized, and in March of this year there arrived at the Bay of Exploits, northward from which lie the great sealing grounds, a small party of British airmen. Led by Mr. F. S. Cotton, a young Australian, this party included another and a spare pilot, a couple of mechanics, and two machines, and forthwith they got to work erecting their hangar on the shores of the bay.

Within a few weeks they were flying out hundreds of miles over the ice, cooperating with the ships in the sealing. In all, they covered 2,000 miles of the ice-fields, or something like 20,000 square miles, in the first expedition, one flight taking them very far from their base. This aerial cooperation assisted in a catch of 110,000 seals.

Belle Isle is the centre of the great seal fisheries. There the seals pass the winter. There the flipperlings - young seals - are born, and from there, as the ice begins to break-up with the spring, they and their parents come floating southwards on huge blocks of ice. Every year, regular as clock-work, towards the end of February, the ice-floes start floating south. Every year, between March 21 and March 25, the entire seal nursery arrives off Fogo, where the sealing fleet waits their arrival.

The actual bagging of the seals is a comparatively simple matter. Immediately they are sighted, the entire ship's company take to the boats, and, clambering on to the ice, club the seals over the head, skin them, and haul their skins and fat back to the ships, at the rate of thousands a day.

Like the old proverb, though, you must first catch your seal "before you sell his skin". In these vast seas it is no easy matter to track down even an army of 100,000 seals. From the time that the ice-floes arrive until the seals take to deep water again, far beyond the hunters' reach, is only a matter of a few weeks at most. In that brief spell either the sealers have made their catch, or they return to harbour empty-handed for another twelve months.

Sealing is one of the mainstays of the island. A bad season entails much poverty and hardship, and during the last few years of the war, the sealing business went from bad to worse. Another bad season would have meant bankruptcy for the sealers, and so they called in the wonderful observational powers of the aircraft.

On a clear day, and from a height of 5,000 feet, the airmen had a view over the ice that extended to Belle Island, 150 miles away. At the same altitude it was possible to make out the dog teams on the surface of the ice below with the naked eye. Usually, however, the weather conditions the airmen had to endure were little short of appalling. For the most part the temperature stood at zero or below. Frequently they were forced to bring the machine down on the ice, while a great deal of their time was spent in dodging blizzards - at the first sign turning and racing for the shore at full speed. Had they been overtaken by one they would never have returned to tell the tale.

So in their log-book we find the following typical entries: 'Blowing very hard...9 p.m. Blizzard.....Ice two feet deep.....Wind blowing about 90 m.p.h., could see nothing.....March 20th.-Made three attempts to get machine up from the

ice.....Forced landing two miles out in the bay.....warmed engine up with an oil lamp, etc. This warming up was a frequent occurrence in a climate where boiling water froze stiff as it was poured out from a can, and the only way to get it into the radiators was actually to heat the metal parts of the engine.

To return to the log-book. One frequently runs across phrases like "A forced landing two miles out in the bay". Such landings were made on the surface of the ice at a speed of over forty-five miles an hour, the machine not pulling up for a hundred yards. Naturally, mishaps occurred - fortunately, none of them serious. Tail skids would snap, and once the machine became so firmly embedded in a heavy snow-bank on the ice that it took three horses and a dozen men the best part of six hours to drag her free again.

Last sealing season the gales were the worst within living memory of the islanders. The inhabitants took to their huts and did not venture forth again till the fury of the storm had vented itself. All the trains were snowed up for over a month, and the aeroplane was the only means of transport available. In the midst of the sealing work an urgent wire was received from the Postmaster-General of Newfoundland to fly out with a mail-bag to St. Anthony, an outlying island. Despite a heavy snow storm, the bag was delivered, and the plane again returned in safety.

The machine that Mr. Cotton was flying was a "Westland", fitted with a Napier-Lion engine. In this same machine he made his famous flight 320 miles out and home across the ice fields.

That day they carried an experienced sealing captain aboard, and he was able to track down the seals by certain signs on the ice surface. It was encrusted all over with low blunt ridges, or "pancake" ice. The prevailing wind was westerly, and, as neither of these conditions was conducive to a lair for young seals, he came to the conclusion that they had passed below a few hours previously and were now making off eastward for deep water. Shortly after they flew near the sealing fleet itself. They signalled to it by wireless: "Turn about! Sail east! The seals have passed below and are now making for the open sea". The sealers took the hint. Within twenty-four hours their catch totalled 110,000 seals.

Meanwhile, warned by change of wind and gathering clouds that a dreadful blizzard was approaching, the aeroplane turned for home at top speed. Barely had the airmen got the machine within its hangar before the blizzard broke, within a couple of hours piling up many feet of snow against the doors.

Nothing daunted by these adventures, Mr. Cotton is off again in a few weeks' time for Newfoundland. Next sealing they anticipate being at work weeks before the ships go out, and in the meantime are to give the fisherman a hand in spotting cod and take a turn with the whalers, out after seacows and hump-back whales. An aerial mail service across the bay to Labrador is yet another experiment at which they are going to try their hand during the summer months.

THE LOENING MONOPLANE FLYING BOAT

The Loening monoplane flying boat established a new altitude record for hydro-aeroplanes on August 16th by reaching a height of 19,500 feet with pilot and three passengers. It is stated that an even greater height could easily have been reached had it not been for the discomfort of the passengers who were garbed in summer clothing.

The power plant of this flying boat is a liberty motor (high compression) equipped with Bijur electric starter. Its speed is between 125 and 130 miles per hour. A notable feature of the machine is that the passenger cabin is built on top, not in the hull. The wing span is 43 feet, length of hull 25 feet, weight (light) 2200 pounds, and weight (loaded) which includes the pilot, four passengers and two hours' fuel, is 3500 pounds.

One of the remarkable features of the boat is that it is every bit as maneuverable as a land machine. It has a very rapid climb and gets off the water with the motor turning up 1100 r.p.m. It flies with the motor throttled down to 900 r.p.m.

THE FOKKER F 3 MONOPLANE ✓

The first of the Fokker F 3 monoplanes, which has been christened the "Half Moon", after the tiny Dutch ship in which Hendrick Hudson came to this country and sailed up the Hudson River in the year 1609, has now carried over 700 passengers since its appearance at Hazelhurst Field on July 21st.

Very successful demonstrations, during which hundreds of people were introduced to the delights of a real commercial aeroplane as a means of travel, were held at Washington, D.C., Hartford, Conn., and Camp Vail, New Jersey. Bert Acosta, who piloted the machine, appears thoroughly in love with his mount.

From the point of view of economical transportation, the Fokker machine is believed to have made a record, gasoline consumption during all this flying working out at an average of 8 gallons per hour.

The Netherlands Aircraft Mfg. Co. believe that by interesting the public in aviation in this way and showing what modern commercial planes can do, they will pave the way for the establishment of air transportation as a recognized means of traffic in this country, as it already is in Europe.

TYPHOON CREATES HAVOC AT CLARK FIELD, P. I.

The Air Service contingent in the Philippine Islands had a rather strenuous 4th of July when the first typhoon of the season occurred. For almost a week little or no rain for this season of the year had fallen. On the afternoon of Monday, July 4th, ominous clouds appeared, and the air was thoroughly saturated with moisture. The storm broke about five p.m. Rain fell in torrents, accompanied by an unprecedented wind. The storm continued without abatement all night long. Those who braved the elements soon learned that the best raincoat procurable is a superfluous article so far as protection from such a storm is concerned.

The damage caused by the storm was wide-spread. On Clark Field the radio, photographic and gunnery buildings and the guard house were more or less total washouts. Several sheet metal sections of the roofs of the Post Exchange and enlisted men's barracks were loosened, permitting rain in quantities to leak through. Officers' quarters were flooded. All wires were down and the candle manifestation led one to think that an Irish wake was being perpetrated. Enlisted men stated that the roof of their barracks was describing an arc of fifty degrees. Subsequent inspection showed that the building was slightly out of plumb.

Many large trees of Camp Stotsenburg and the environs were blown down. Hundreds of bamboo and nipa huts of the adjacent towns and barrios were completely destroyed. On the railroad which abuts the military reservation, a bridge some three miles from the field was washed out, causing a train consisting of an engine and four cars to fall into the river with a consequent loss of two lives. The flying field resembled the proverbial ribbed sea sand, and landings were of the leap-frog variety, with considerable hazard attending.

Several miraculous escapes were reported. Two officers' wives were en route to Manila by motor when the storm blew a large mango tree directly upon their car. They were completely lost to view among the branches, and natives whose houses had just gone by the board stated they thought the occupants were crushed to death. With the assistance of the natives, the car was backed out from under the tree. Neither of the passengers had a scratch to show for their experience, nor was the car in any way damaged.

Suffice it to say, July 4, 1921, will long live in the memories of those at present stationed at Clark Field, nor will their recollection smack of giant crackers and fireworks.

At Kindley Field, Fort Mills, P. I., the rough sea that accompanied the typhoon had its good as well as its bad effects. The flooded barracks made it very uncomfortable for the men, but the good feature of the storm was that it swept the entire beach in front of the hangar clear of rocks and debris that have long been a nuisance in the launching of planes. No damage was done to the balloon in the hangar, despite the fact that the wind was blowing directly into it.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

The Netherlands.

The Netherlands Aircraft Mfg. Co. announce that during the period from April 14th to August 6, 1921, 212 trips were made on the services between London and Amsterdam, with an intermediate landing at the new airport at Rotterdam. The Fokker F3 six-passenger monoplane is the type of plane that has been in use.

It is remarkable that, on this particular line, the freight traffic has gradually grown of far more importance than the carrying of passengers, especially in the direction of London to Amsterdam. The cargoes carried are of the most varied character imaginable, ranging from the famous diamonds from Amsterdam and men's underwear from London to live chickens and choice vegetables.

Fokker monoplanes, which carry their big loads with a motor of only 220 h.p., are performing, according to statements issued recently by the management of the Royal Dutch Air Traffic Co., entirely satisfactorily, and it is expected that by next Spring monoplanes of the new Fokker F IV type will carry ten passengers and have either Napier or Liberty engines, will be put into service.

England.

In an endeavor to secure a fuel tank which will be secure against serious leakage in the air when damaged by machine gun fire using incendiary, armour-piercing or explosive ammunition, or by shell fire, the Director of Research, British Air Ministry, will hold a competition next December, and has announced that prizes totalling £2,000 will be tendered to the successful competitors. The first prize will be £1,400, the second £400 and the third, £200. This competition, which will be governed by certain exacting rules and regulations, should bring forth results of a progressive nature.

France.

It is reported that a French syndicate is now preparing to organize an over-sea airship service between Marseilles and Algiers and contemplate employing on this line three of the surrendered German airships, the "Nordstern", the L72 and the LZ113. At present there is no direct air line running between Paris and Marseilles, the nearest approach to this being the service between Bordeaux, Toulouse and Montpellier. It is not to be doubted, however, that as soon as the airship service is in operation the Paris-Marseilles airplane route will be opened. As the intention is to run a night service over the sea, probably the airplane service from Paris will be so arranged that the machines leave in time to connect with the airship leaving Marseilles in the evening. It should then be possible for a business man to leave London about midday, and, by connecting with the other services at Paris and Marseilles, be in Algiers the next morning.

Colombia.

The trip from Bogota to Barranquilla, a distance of nearly 900 miles, can now be made in 21 hours, when it formerly took two weeks or longer. The traveler can go by train from Bogota to Girardot, and from there he can take one of the two new hydroplanes just received by the Colombo-German Aerial Transport Co. - of a better type and greater capacity for conveying passengers than those formerly in use - which will take him down the Magdalena to Barranquilla. A weekly mail and passenger service will be established immediately.

Work has been started on the road to Enea, which will connect the town of Manizales with the aviation field to be established in that vicinity. The field will be 1,000 meters in length, and its total cost will be 50,000 pesos.

Mexico.

The Department of Communication has arranged with a foreign company for aerial freight and passenger service between the City of Mexico and Tampico. It

Mexico, Continued.

is planned to make the first trip on September 1, flying from the City of Mexico to Vera Cruz in two hours and a half, and from Vera Cruz to Tampico in an hour. As the 15 airplanes arrive, aerial service will be established also to San Luis Potosi, Monterrey, Laredo and Matamoros.

A commercial service is also to be begun between Ciudad Juarez and the city of Chihuahua. The airplanes, which will be piloted by American aviators, will cover the distance of 360 kilometers in two hours, while the railroad requires 10 hours for the trip. Until the landing field in Ciudad Juarez is completed the aviators have permission to use the one at Fort Bliss in El Paso, just across the border.

Ecuador.

A presidential decree has created in Guayas Province a military aviation school, the first in the Republic. Fifteen students will be prepared as pilots, 10 as mechanics and 10 as mechanics' helpers. Ten civilian pupils will also be received. Two Italian pilots are instructors.

The Condor, a new aviation field, has been opened at Eloy Alfaro, near Guayaquil. One of the airplanes is the gift of the Italian colony, another of the Syrian colony, and a third of the university students.

Argentina.

Pilot Luis Barrufaldi at Palomar field in a 300 h.p. Bristol biplane, with his mechanic as passenger, made the altitude of 7,400 meters in an hour and a half. This is considered the South American record for altitude with a passenger.

Capt. Olivero in a 220 Balilla airplane beat the previous South American altitude record by ascending to 8,000 meters in 1 hour and 15 minutes. He first circled over Ituzaingo, Moron, Temperly, and El Palomar gaining altitude and next over the center of Buenos Aires, the island of Martin Garcia, San Fernando, and Lomas de Zamora. Upon reaching 7,500 meters an hour after rising he surpassed the altitude record of Major Hudson of Bolivia. From then on the cold and rarefied air were much more trying to the aviator, who began to lose consciousness, and after reaching 8,000 meters he started to descend, landing in El Tropeson near San Martin.

Chile.

The teachers and pupils of the primary schools recently presented an airplane to the aerial service of the Republic. Three thousand pupils from the Santiago schools attended the ceremony.

Uruguay.

The Aero Club of Uruguay was recently founded to work for the benefit of national aviation.

Five hundred meters has been set by official decree as the lowest altitude at which aviators may fly military aviation school airplanes for acrobatic performances. To fly lower than this altitude with Government aircraft, written permission must be obtained from the director of aviation.

CADET FLIERS MEET DEATH IN AIRPLANE CRASH

Cadets Adolph Ferenchak and Samuel C. Chapkowitz were killed in an airplane crash near Indian Creek, Va., on Wednesday afternoon, August 31st, at about four o'clock. These cadets were sent to Indian Creek from Langley Field on a government mission, and in attempting to make a landing in a very small field their plane struck a tree and was thrown to the ground, bursting into flames immediately, both occupants succumbing to the flames.

As soon as notice was received at Langley Field of this accident, Lieut. Doolittle and Lieut. Jones went up to the scene of the crashed plane and took charge of the bodies. The remains of Cadet Ferenchak were escorted to his home in Brooklyn, N.Y., and those of Cadet Chapkowitz to his home in Patterson, N.J.

A military funeral was given the late cadets as a last tribute as their bodies were removed from Langley Field to Old Point on the afternoon of September 2nd.

These two cadets were given their preliminary training at Carlstrom Field, Fla., last year, and they completed their advanced training at Kelly Field, Texas, last Spring. They volunteered their services during the bombing maneuvers. Both were excellent pilots and were highly rated by the officers. They were popular among their cadet-mates and were esteemed highly by the officers and enlisted men. Both were to have soon received their reserve officers' commissions.

The sympathy of the entire Air Service is extended to the bereaved families of these two young men, and their loss is keenly regretted.

DEATH OF LIEUT. LYNN D. MERRILL.

Lieut. Lynn D. Merrill, formerly in the U. S. Air Service, was killed in an airplane accident at Winona Lake, Ind., August 25, 1921.

Lieut. Merrill enlisted in the Aviation Section of the Signal Corps shortly after the United States entered the world war, and received his preliminary training at the School of Military Aeronautics, Champaign, Ill., from which he graduated on September 1, 1917. On September 18, 1917, he sailed from New York on the CARMANIA with what was known as the Italian Detachment, landing at Liverpool October 2, 1917. From this date he was attached to the Royal Air Force, graduating from the School of Military Aeronautics at Oxford, November 2, 1917. After training at various aerodromes, he finished his training at Turnberry, Scotland, in June, 1918, at the School of Aerial Fighting and Gunnery. He was then assigned to the 104th Squadron, R.A.F., with which organization he remained for three months, bombing cities on the Rhine. When he was recalled to the American forces in September, he was senior flight commander of the squadron. He was a flight commander with the 166th U.S. Aero Squadron, and after the Armistice served with his squadron in the Army of Occupation. Lieut. Merrill was returned to the United States and received his discharge from the Army in August, 1919. From that time until his death he was engaged in commercial flying. His home address was 478 Court St., Auburn, Maine.

SQUADRON NEWS

Fairfield Air Intermediate Depot (Wilbur Wright Field) Sept. 3.

Major Augustine W. Robins, formerly of the Office Chief of Air Service, assumed command of this depot on August 27th, relieving Major Geo. E. A. Reinburg, who reports to the Office of the Chief of Air Service, Washington, D.C., for duty.

The Masonic Club of this Field gave a farewell party for Major Reinburg on Tuesday, August 29th, and presented him with a solid gold wrist watch. The Federal Employees Union at the same time presented Mrs. Reinburg with a pair of beautiful silver candle sticks.

Lieut. George V. McPike and Lieut. P. R. Turpin just returned from thirty-day leaves. Lieut. McPike reports having had a wonderful time at Hollywood, California, while Lieut. Turpin spent his leave in northern Wisconsin, where he reports the fishing is very good.

Lieutenants T. J. Carrol, A.S., and D. L. Decker, Quartermaster Corps, have been ordered to this station for duty.

All the golf bugs of the post are daily practicing for the tournament which is to be arranged for the latter part of this month.

Mrs. Charles M. Leonard, wife of Lieut. Leonard, returned from the home of her parents near Cleveland where she spent the last month. Mrs. Leonard was accompanied by her mother who expects to pay the post an extended visit.

The Radio Repair Department has finally arrived at a point where a quantity of all types of radio equipment that might be called on for immediate shipment can be shipped out with the latest modifications added.

One hundred and twenty Wright, 300 h.p. motors, which were remodeled for use in the new Ordnance Scouts, have been completed and are now awaiting shipping instructions.

A DH4-B1 with 110 gallon gasoline capacity has been completed for the use of officers of this depot in making emergency long-distance cross-country flights. Work on overhauling and rebuilding a LePere airplane has recently been completed and was given its initial flight test. Lieut. Balland, who flight-tested this plane, is very enthusiastic about it and claims that it is a wonderful ship.

Carlstrom Field, Arcadia, Fla., August 24-31.

The class of student officers has slowly increased and now numbers 46, of which number approximately one-half have already "soloed".

At a meeting of the prospective players of the post team, Captain Gates was elected manager and Lieut. Vidal, former West Point backfield star and All-American half back, was elected Captain and Chief Coach. There are a large number of excellent players here this year, all of whom have had university experience. Last year the team was undefeated and was scored on but once.

Revenge on Bartow for the trimming it administered to Carlstrom Field a week ago Tuesday was not forthcoming, as the team failed to show up, and in order to indulge in some exercise the post team took on Lieut. Strahm's all star aggregation of officers. Lieut. Strahm pitched a lovely game, but his support faltered in the last inning and the post team drew the long end of a 5 to 4 score.

The following-named officers of the Air Service have been transferred to Kelly Field, San Antonio, Texas, for temporary duty and advanced bombardment training: Major John H. Pifie, Capt. Edward C. Black, Capt. Asa N. Duncan, Capt. Oliver P. Echols, Capt. Howard J. Houghland, Capt. George P. Johnson, Capt. Charles A. Pursley, Capt. Thomas H. Shea, Capt. George L. Usher, Capt. Arthur N. McDaniel, 1st Lieuts. Carl H. Barrett, Dean B. Belt, Victor E. Bertrandias, John Beveridge, Dwight J. Canfield, William B. Clarke, James E. Duke, Charles R. Evans, William S. Gravely, James L. Grisham, William A. Hayward, Samuel M. Lunt, Adolphus R. McConnell, John M. McDonnell, John M. McKee, Fred Place, Edward D. Robbins, Ellis DeV. Willis and Henry G. Woodward.

Lieut.-Colonel William E. Gillmore, A.S., has reported to this station for pilot training and duty. Colonel Gillmore expects to finish his training in a few weeks.

The following-named officers of the Air Service have been transferred for duty and advanced pursuit training to Ellington Field, Houston, Texas: Major Fred H. Colman, Capts. Oliver W. Broberg, Hugh M. Elmendorf, Albert M. Guidera,

Carlstrom Field, Arcadia, Fla., August 24-31, Cont'd.

John B. Holmsberg, Burton E. Skeel, 1st Lieuts. Arthur K. Ladd, Benjamin R. McBride, James D. Summers and John H. Wilson.

On the afternoon of August 18th the Carlstrom baseball team journeyed to Wauchula and furnished a pleasant Roman Holiday for the assembled multitude, the score being 10 to 3 in favor of Wauchula.

The game with Arcadia on August 25th was a veritable slaughter, Carlstrom administering a severe drubbing to their opponents. At the end of the seventh inning the score was 28 to 0, and the umpire, by common consent, called the game. Arcadia made only one hit.

Election of officers for the Officers' Club held last week resulted as follows: President, Lieut. Barney Toohar; Vice President, Lieut. John G. Williams; Secretary and Treasurer, Lieut. Oscar N. Barney, and Board of Governors, Captains Vann, Thorne and Ford.

The first group of men for the new cadet class have arrived and have been assigned to the Cadet Detachment. These men are the forerunners of a large cadet class, and it is expected that it will begin study about September 15th. One hundred cadets are expected to take the primary course at this station, and they will come from civil life as well as from the enlisted personnel of the Army. The four men coming from Ellington are all athletes, three being football players with considerable experience. This is added material for the football squad, which already has the earmarks of becoming a championship aggregation.

During the week ending August 30th, the total flying time at the field was 260 hours and 20 minutes, Flight "A" being credited with 85 hours and 35 minutes, Flight "B" with 130 hours and 50 minutes, and Headquarters Flight with 43 hours and 55 minutes.

Orders were issued August 26th detailing eight enlisted men from Carlstrom, candidates to West Point, to take a course of instruction at Fort Oglethorpe, Ga.

Headquarters Detachment, 4th Group (Obs.) Paranaque Beach, Manila, P.I., July 16-22.

Major B. Q. Jones, Department Air Officer, made a trip to the Paranaque flying field July 13th on a tour of inspection.

On Monday morning, July 18th, Major Jones, accompanied by Colonel Eltinge, Assistant Chief of Staff, Philippine Department, flew to Corregidor in an N9H seaplane for the purpose of making an inspection of Kindley Field. On the following day Major Jones took off in a DH4 and flew to Stotsenburg to inspect Clark Field.

Major Jones and his assistant are attempting to locate all available landing fields within cruising radius of a DH-4. Practically all suitable sites have been inspected, both from the air and on the ground. It has been found throughout the entire island that flying fields and rice paddies do not conform with one another. The dikes intersecting one another around the various paddies are all that spoil many perfect level stretches which could easily be made into perfect four-way fields.

Lieut. Weber passed through Manila en route to Stotsenburg. He has just completed one month's detached service at Baguio.

Lieut. Longfellow of Clark Field is being detailed for duty in the Office of the Air Officer, with station in Manila.

Owing to the financial difficulties encountered in the management of the Philippine Air Service, it has become necessary for the Philippine Government to suspend activities in that branch of the service. It is not known just what decision will be made, but it is rumored that either the Air Service, U. S. Army, will take charge of the equipment and airdrome, or that it will be managed by a commercial firm.

Seven men of this Detachment are to leave on the next transport for homeland, having completed a two year tour of service in this Department.

Captain Phillips is sojourning among the Moros in Mindanao, trying to locate prospective landing fields. He has instructions to pay particular attention to the vicinity of Zamboanga, as a cross-country flight to that city has been contemplated for some time.

Clark Field, Pampanga, P.I., July 16-24.

Some considerable ditching has been done recently to keep the heavy rain from washing out gulleys in the flying field. The last typhoon produced several

Clark Field, Pampanga, P.I., July 16-24, Cont'd.

bad spots which were attended to at once before any flying was done. Loads of manure are being distributed on the field with the hope that the growth of vegetation may be stimulated and thus militate against erosion.

Many clouds are now being encountered in practically any flight. Most formations consist primarily of cloud dodging exhibitions, and a number of ships bound for Manila have been turned back because of no ceiling.

Gradually all pilots on the field are being assigned D.H.4B's. Most of the pilots who have been in the Islands since 1919 prefer the "A" type for flying reasons. The propinquity of the rice paddies, however, is a very strong argument in favor of B's.

A recent order makes it mandatory for the pilot who flies beyond gliding distance from his field to carry a pistol with 20 rounds of ammunition, a canteen of water, emergency rations for three days, and a native implement known as the bolo. This may sound like a unique kit, but if one will but get close enough to scrutinize the ground that is constantly flown over in the inaccessible wild spots in the mountains he will understand the good sense of the order.

Considerable rain has fallen recently, thus precluding much flying. As a result of the inspection of the supply hangars at this field by the Department Air Officer, all other activities have been suspended save that of remedying the defects found in this inspection. A fatigue detail comprising 150 men are hard at work arranging things in proper order.

Kindley Field, Fort Mills, P. I., July 16-23.

Colonel Barth, Post Commander, made an inspection of the personnel and barracks of Kindley Field on July 16th. Major B. Q. Jones, Department Air Officer, inspected the 2nd Squadron on the same day.

On July 19th the 2nd Squadron participated in a fuze test and practice held by the Coast Artillery. A radio equipped "H" Boat, Captain Cole, Observer, went up on a Reglage mission to report sensings of the shots fired. Ten shots were fired by the long range battery at a stationary target on the Mariveles shore. The plane was in position to observe during the entire shoot and sensings were sent to a portable ground receiving station, near the battery, from the observing plane.

In the afternoon firing was carried on by 12" Mortar Battery "WAY", from which ten shots were also fired, but due to motor trouble in the observing plane a forced landing was necessary before the completion of the shoot. It was impossible to send up a relief plane due to the rough condition of the surf which had been steadily increasing since early morning.

Lieutenant Bettis, recent arrival in this Department, has been given further instruction in seaplane piloting.

Lieutenant Hine of the 2nd Squadron has been detailed on a board of officers to conduct preliminary examination of applicants for appointment in the Regular Army.

The 17th and 27th Balloon Companies have been furnishing details for the loading of local transports. This handicaps the general routine duties of both companies.

Schools for noncommissioned officers and 1st, 2d and 3d Class Specialists are to commence in all three organizations of Kindley Field within a week. The subjects to be taken up include Army Regulations, Infantry Drill Regulations, Signalling, Army paper work, etc. The course of instruction will cover a period of approximately two months.

On Sunday, July 17th, a photographic mission was made in this vicinity, netting ten successful photos. A number of photo test flights have been made with a K. I. type Camera to be used here for mosaic photography.

The assemblage of three more H.S. 2 B. Flying Boats is under way in the Engineering Department.

The hydrogen plant, at this field was erected July 15th, 1920, and the first charges of hydrogen gas this year was generated on this date. During the past year 1,011,000 cubic feet of hydrogen gas was generated. Hydrogen gas is a very high explosive, and dangerous to all men who handle it. During the past year no accidents of any kind have occurred.

Kindley Field, Fort Mills, P. I., July 16-23, Cont'd.

The 2nd Squadron was well represented at the Grand Amateur Scratch Championship of the Philippine Islands at the Cosmopolitan Gub. Club, Manila, on July 10th. First Lieutenant Royal B. Lea, shooting against the best shots of the Islands, fought his way to fifth place in a field of 22 experts.

The Kindley Field Corral recently completed is now being occupied by its dumb inhabitants. It is located on Monkey Point away from the field quarters and barracks and yet moderately convenient.

Hqrs, 91st Sqdn, Eugene, Oregon, August 20-27.

Baseball still occupies a prominent part of the squadron activities. The team lost a close game to Goshen on Sunday, August 14th, by the score of 5 to 3. On the 21st the team played Harrisburg and lost another close game, the score being 7 to 6. A sensational batting rally in the ninth inning resulted in four runs being scored.

Lieutenant Benjamin S. Catlin, Jr., has joined the squadron. Lieut. Catlin has a distinguished overseas record while flying with the French.

Lieutenant Eugene C. Batten and Cadet Monteith proceeded to Camp Lewis by airplane for duty, the former to relieve Lieut. Worthington, ordered to McCook Field. Lieut. Catlin also followed them to this station, immediately upon his arrival at Eugene.

Captain L. H. Smith went to Salem, Oregon, on the 23rd for a conference with Governor Olcott.

The 91st Squadron sent 15 men to Crissy Field, California, on August 20th, for duty, the men being in charge of Lieut. Grandison Gardner, who will return by airplane to this station. This transfer of men, with the recent discharges, has reduced the squadron strength to about 70 men, the smallest it has been for some time.

Hqrs. Flight B, 91st Sqdn, Camp Lewis, Wash., Aug. 27.

Due to heavy rains and the wet condition of the forests, patrol operations were temporarily suspended on August 24th. Should the present rate of rainfall continue it is probable that forest patrol will be abandoned for the season.

The Radio Department of this detachment have been able to hear San Francisco concerts on the ordinary SCR-69 Set, using a one-wire antenna.

First Lieut. Benjamin Catlin, who reported for duty August 19th, will assume the duties of Supply Officer.

Mather Field, Sacramento, Calif., August 20.

A very happy event occurred early morning of August 17th in the arrival of an eight pound baby boy to Mrs. B. M. Atkinson, wife of the Commanding Officer of the post. He is to be named Bert Milton, Junior.

With the receipt of 2,000 gallons of gasoline from the Forestry Service on August 15th, forest patrols operated from this field were resumed on the 16th. Cadets Bartlo, Goodwin, Graves and Hedrick, who had been at the Air Service Rest Camp for ten days, returned to the field. They report having had a very pleasant leave of absence, with plenty of opportunity for hiking, swimming, fishing and rowing. Their appearance indicates that they all had a very successful rest. When these four pilots returned, Cadets Means, Hantsche and Corporal Larsen were granted leaves of absence to be spent at the Rest Camp, and left by motor truck immediately.

Cadet Doles returned from Rockwell Field with a new plane. Lieuts. Gullet and Schramm left for Rockwell Field on the 20th by plane, Lieut. Schramm to bring back a new plane, and each officer will ferry a cadet from March Field; fifteen cadets having been ordered here from that field for duty on forestry patrol.

First Lieut. E. B. Bayley returned from Visalia on the 15th, assuming command of the 9th Squadron (Obs.) and the duties of Post Operations Officer. All members of the Air Service Supply Detachment have been attached to the 9th Squadron, temporarily at least, and for the first time since its reduction to peace strength the organization has attained an appearance of some size.

Mather Field, Sacramento, Calif., August 29.

Five planes left Mather Field on Thursday afternoon for San Francisco to fly in formation over the funeral train of Brig. General Henry A. Greene, Retired, early Friday morning. The pilots were Lieuts. Liggett (leading) Minter, Schramm, Sullivan and Williams, with Lieut. Gardner and Cadets Bartlo, Graves, Hedrick and Private Brooks as observers. The observers strew flowers from the ships over the procession as it proceeded up Market Street.

Lieuts. Schramm and Gullet returned from Rockwell Field on the 23rd, ferrying two cadets - McKinney and Ayres - from March Field to this station, for duty on forestry patrol. Patrols were cut down during the early part of the week due to shortage of gasoline, but were resumed the latter part of the week upon receipt of a huge supply of fuel.

Cadets Hantsche, Means and Corporal Larsen returned from their ten days' leave at the Air Service Recreation Camp on the 22nd. The placing of a row boat on Gold Lake recently for the use of Air Service campers has given pleasure far out of proportion to its size, and it is being made good use of in fishing. Recently one of the Forestry Service men generously told of his specially lucky fishing holes, and now the camp is supplied with all the trout that can be eaten.

Activities for the diversion of the enlisted men at the Service Club have been resumed. Chaplain Kelley made arrangements for an entertainment, and on Monday night a group of players from the Community Service Club of Sacramento came to the field. A drummer, pianist and singer entertained with musical numbers and a very graceful interpretive dance was given by a well trained dancer. Then two young ladies presented a little tragedy; their parts were well studied, and even the lack of necessary "props" did not cause them to miss their cues. The evening ended with music and dancing.

Flight "B", 12th Sqdn. (Obs.) Nogales, Ariz. Sept. 3.

1st Lieuts. Knapp and McKinnon left this field the latter part of the week in a DH-4 airplane for El Paso, Texas, where they will carry on liaison work with some of the branches of the Army stationed at Fort Bliss. This work will be done during the inspection that will be held there.

The enlisted men of this squadron have been getting some very nice trips to different parts of the United States to take charge of and to deliver prisoners to different places.

Staff Sergeant Johannpeter left the early part of the week for Fort Leavenworth, Kansas, with four general prisoners and seventy-five enlisted men of the 25th Infantry. The seventy-five enlisted men are detailed on guard duty at Fort Leavenworth. Staff Sergeant Hargis and Private Englisch returned Friday from Phoenix, Arizona, with two prisoners which were turned over to the prison officer at Camp S.D. Little upon their arrival.

Langley Field, Va., Sept. 3.

Colonel and Mrs. Danforth have issued invitations to the officers and ladies of the post, and to the officers and ladies on temporary duty at the field for the bombing maneuvers, to a dancing party on the evening of Saturday, September 10th.

Major and Mrs. Miller entertained at the Club on Thursday with a dinner. Covers were laid for twenty-four guests.

Captain and Mrs. Beam are stopping with Captain and Mrs. Lawson while here on temporary duty.

Major and Mrs. Fisher entertained last Friday with a dinner for Major and Mrs. Van Kirk, Major Thornell and Captain Dale Mabry.

Mrs. Hulton and Miss O'Mara left last Friday for New York. They were the guests of Lieut. and Mrs. Torney.

Captain Hale's mother, Mrs. R. H. Hale, and sister, Miss Ethel Hale, arrived last Sunday. Mrs. Hale expects to be here all winter.

Major Van Kirk's mother, Mrs. T. H. Van Kirk, of Columbus, Ohio, is the guest of Major and Mrs. Van Kirk.

Miss Elizabeth Davis, who has been the guest of Lieut. and Mrs. Bobzien for the past two weeks, left last Friday.

Mrs. McNarney entertained on Saturday with a dinner at her home in honor of Major McNarney's birthday.

Langley Field, Va., Sept. 3, Cont'd.

Miss Francis Van Kirk, daughter of Major and Mrs. Van Kirk, arrived on Sunday last. Miss Van Kirk spent the summer in Ohio, after graduating from Vassar last June.

Mrs. Bobzien has as her guest her sister, Miss Carrie Spencer.

Lieut. and Mrs. Miller entertained Col. and Mrs. Danforth at dinner last Wednesday.

Football practice will not start until next week, as Lieut. Ignacio tendered his resignation as coach of the football team, his duties at the Balloon Hangar preventing him from giving the proper attention to football. Another coach will be selected during the week.

McCook Field, Dayton, Ohio, Sept. 1.

Lieut. C. N. Monteith is on an inspection trip in the east reviewing the progress in construction of some of the new models being built for the government.

In addition to his other duties, Lieut. Kellogg Sloan has been appointed Adjutant and Personnel Adjutant.

Major Guy L. Gearhart has been assigned as Chief of the Factory Section.

Major Hobley and Lieut. Fletcher, with their families, have gone to Howland, Indiana, a little town on a lake, where they are fishing and swimming, and generally enjoying the out doors.

Capt. A. W. Stevens, with Lieut. Wade as pilot, flew to New Hampshire on an aerial mapping project. They expect to make mosaics of the White Mountains and surrounding country.

Captain Russell L. Meredith, who has just completed a year's course at the Massachusetts Institute of Technology, has been assigned to the Engine Design Branch of the Power Plant Section.

Major Bane, commanding officer, and Majors Martin and Hallett with their families have been camping and fishing at Trout Lake, Michigan. They expect to remain for three or four weeks.

Lieut. K. G. Fraser, Chief of Inspection, recently returned from a rather extensive and very successful inspection trip through several manufacturing plants in the east engaged in the production of airplanes and equipment for the Air Service.

Major D. C. Emmons, who recently returned from a year's course of instruction at Harvard, has been designated Chief of Production. All airplane and engines which are to be used by the Air Service at large are to be procured through this office.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE OCTOBER 15, 1921.

HOME TO FACTORY DAILY IN MESSENGER AIRPLANE

Lawrence Sperry tells why he flies to
Business and the Golf Course.

By First Lieut. J. Parker Van Zandt, Air Service

The Messenger airplane is a small plane designed for courier service by the Engineering Division of the Air Service and manufactured by the Lawrence Sperry Aircraft Company of Farmingdale, Long Island. It is equipped with a 3-cylinder Lawrence air-cooled engine rated at 50 H.P., but which develops 60 H.P. at 1880 r.p.m. The plane empty weighs only 623 pounds. When completely loaded, including the pilot and 10 gallons of gasoline, the weight is 862 lbs.

The flying qualities of the Messenger airplane are very good. Although remarkably small, there is a feeling of solidity and strength in appearance, and the handling in flight of the airplane that lends confidence to the pilot. The airplane is easily taxied, even in a strong wind, is steady, easily controlled for so small an airplane and has a quick getaway and good climb considering the comparatively low horse-power of the engine. The weight per horse-power loaded is 13.5; and the weight per square foot is 5.7.

Several months ago Mr. Sperry was requested to supply the U.S. Air Service magazine with details concerning his routine use of the flying machine in the transaction of business and for purposes of recreation. But Mr. Sperry has chosen to delay the matter until he could put his ship through numerous and constant practical tests.

Mr. Sperry's experience confirms the opinion of one writer that vertical or third-dimensional distances to which we have been accustomed, when climbing a tree, traveling upstairs, or even in an express elevator going to the top of the Woolworth Building or down in a deep mine, are relatively so small that until the appearance of aviation the third dimension for all practical purposes remained an unknown quantity. Mr. Sperry prefers flying to other means of transportation and it is easy to see that his enthusiasm is genuine. Not the least interesting feature of his account is the stress which Mr. Sperry places upon the value of the airplane in connection with the comparatively tame pursuit of playing golf.

"In the course of my business I had occasion to fly to Langley Field and Washington, and other government stations, and I have used this machine for transportation in preference to the train, because I could leave my plant when I was ready to go rather than at some stated train time - could get to my destination quicker than by train without any changes, and arriving there would be on the field where I wanted to do business instead of at some railroad station distant from the field.

"I have landed on country roads besides ordinary gasoline stations for supplies, and dropped into many fields of less than ten acres in size. In all my travels in this plane, landing and taking off in new and restricted places I have never met with a single accident of any consequence.

"Behind my house in Garden City, Long Island, there is a field of about ten acres surrounded on all sides by high trees; in fact, it is less than a couple of city blocks in size, but to the Messenger this is an ideal landing field and consequently I do a great deal of my traveling back and forth between my house and the plant at Farmingdale in the little machine. Even in rainy weather I prefer this method of transportation to an automobile, because I can keep just as dry, and I do not have to worry about my car or somebody else skidding; besides, I can make it in one-third of the time.

"Aside from business this little plane with its 20-foot spread serves as an excellent vehicle to and from distant golf links. When you can step out of your house practically in the back yard, stick your golf clubs in the fuselage

behind you, crank up the motor without the assistance of any mechanic, hop in and fly in 10 or 15 minutes to some golf links which ordinarily would take an hour to get to by motor, arrive near the club house, taxi the plane up to the caddy house door, get out and shoot your round of golf, taking advantage of the last hours of sunlight and knowing that when you get through you can hop in and get home in plenty of time for dinner, you have something which makes golf take on a new joy. It means that you can play any links that you want to without having to worry about time enough to do it in.

"One of the gratifying things about the machine when traveling around the country is the ease with which it is possible to start the motor without the assistance of anybody. The motor is so small that it can be readily turned over and even spun with one hand. At Garden City I have been in the habit of putting the tail skid behind a small ledge and placing two inch and a quarter blocks under the wheels.

"With the stick behind the safety belt thereby holding the flippers up to insure the tail staying down, I start the motor throttled. I then get in the machine and run the motor up holding the stick in, and the moment I am sure of the motor and it is sufficiently warmed up I allow the stick to go forward slowly thus raising the tail whereupon the machine will hop over the two blocks. The small size of the machine very often comes in handy, because it is possible to wheel it around streets, just as you would an automobile. Most any street is wide enough to pass down even though it is necessary to pass cars on the side. On one occasion to get gas and effect minor repairs I towed the machine behind an automobile to a garage, and put the tail right inside the garage just as one would an automobile.

"Should you be inclined occasionally to give vent to your feelings by stunting and otherwise jazzing the plane around in the air, here is a little Packard which will respond to your skill and permit you to accomplish anything in the flying line that you desire. If you cannot do it, it is your own fault, not the machine's." - U.S. AIR SERVICE.

STANDARD J1 WITH MERCEDES ENGINE

The Cox-Klemin Aircraft Corporation of College Point, Long Island, N.Y., has recently rebuilt a Standard J-1 airplane as a three-seater with a 6-cylinder Mercedes engine as its power plant.

The Mercedes 6-cylinder vertical engine is rated at 160 h.p. at 1250 r.p.m., but turns up to 1550 r.p.m., at full throttle, and delivers close to 200 h.p. at this speed. This power gives the plane a great range of speed, maximum speed considerably more than 90 m.p.h., fast climb and reserve of power, with slow landing speed, stability and balance. The Mercedes-Standard is a useful all-round machine, suitable for the most difficult flying conditions.

Fully loaded, the machine holds altitude, and good speed at 1,100 r.p.m., so that it is very suitable for economical cross-country flying. The balance is good, the increased stagger of the upper wing taking care of the weight of the Mercedes motor. Ample-cooling surface is provided by two side radiators. On a machine now being rebuilt, the motor is cowled in, giving the machine a more streamline appearance. Two passengers are placed in the front cockpit, and dual control can be provided when the seats are slightly staggered.

ACCIDENTS IN COMMERCIAL AVIATION.

A report prepared for the Secretary of Commerce by the Information Department of the Manufacturers' Aircraft Association states that, based upon the most trustworthy available information, it is estimated that 1200 aircraft are engaged in commercial flying in the United States today. A conservative estimate places the mileage flown by these craft during the period January 1 to June 30, 1921, at 3,250,000 miles.

In the first six months of 1921 there were 40 serious accidents in civil flying, not including accidents to government-owned machines, resulting in death to 14 persons and injury, more or less serious, to 52. In 18 instances there were no casualties. The 14 lives were lost in 10 accidents, and injury to the 52 was caused in 20 accidents. The report gives the following requisites for safe flying:

While natives of Montgomery, clad in Palm Beach suits were sweltering in a temperature which ranged high in the eighties, the flight pilot and his civilian companion, who left the ground four miles outside of the city proper, came near freezing at the height their machine attained, although they wore winter clothing. The two men also experienced much difficulty in breathing in the rarified atmosphere. The entire force at the depot feels pride in this achievement, as the machine was remodeled there. It carried no additional equipment for making a high altitude flight.

MUNICIPAL FLYING FIELD AT HONOLULU

There is a possibility that Honolulu may have a municipal flying field in the near future if arrangements can be effected whereby Honolulu Park may be extended to embrace an area 600 feet long and about 200 feet wide. Major-General Wm. P. Summerall, Department Commander, who with Brigadier General Joseph E. Kuhn made an inspection of possible landing fields in the vicinity of Hilo, stated that with the extension of Honolulu Park, as indicated, and the necessary preparation of the ground a hangar would be erected on the field and a detachment of enlisted men assigned for duty thereat.

AVIATION ACTIVITIES AT SPOKANE, WASH. AND VICINITY

The development of interest in aviation has proceeded steadily in Spokane and vicinity. In one day recently there were 10 planes on the Foster Russel landing field. They included the machines of Fred W. Hungate, a banker and wheat grower of Pomeroy; Albert Hubbard, a Spokane inventor; Charles E. Stilwell, theatre owner; J.G. Rankin, pilot, Walla Walla; W.H. Fouts, an attorney of Walla Walla; David Mathews of Moscow, Idaho; Spokane Industries, C.L. Langdon, pilot; Ralph Beal, Ritzville; and the Bluebird and Standard planes of the Russell Company. Half of the visiting planes were flown by their owners or operators.

Four men are employed in setting up a new 3-passenger plane for use on the field. It will be of 150 h.p., equipped with an electric starter, and will be ready for the air shortly.

AIRCRAFT DEVELOPMENT IN SOUTHERN CALIFORNIA

Commercial aviation in Southern California, where excellent progress has been made in the last few years, is to receive added impetus through the organization of the California-Curtiss Company. Messrs. Erving G. Diess and Earl S. Daugherty, noted aviators and U. S. instructors during the war, have formed this company and have been appointed distributors for Curtiss airplanes for Southern California and Arizona. These two men have formed a partnership so as to combine two of the most prominent aviation factors in the West under one head. As a sales manager and aviator, Diess has sold probably more airplanes than any one individual in Southern California. Daugherty has been an exhibition and passenger-carrying pilot for years, having obtained one of the first licenses issued by the Aero Club of America through the Aero Club of California.

Field headquarters will be maintained in Long Beach, where a \$50,000 plant is to be established, and an office maintained in Los Angeles. Curtiss airplane agencies, under direction of dealers such as now obtain in the automobile industry, are to be promoted for the sale of machines and the promotion of the industry. Daugherty Field at Long Beach is to be improved and equipped to meet the up-to-date demands of the fast developing aviation business. Hangars with concrete floors are to be built to house ten planes. There will be a runway 3,000 feet long and 290 feet wide. Field offices and warehouses for storing parts are to be erected. The planes to be on exhibition at the field are -

3 Curtiss JNE-D type, 2-passenger machines.

1 Curtiss Oriole 3-passenger plane, which is purely an after the war commercial type, embodying speed, comfort and safety, and having a speed of 105 miles an hour.

- 1 French Nieuport pursuit plane with a speed of 135 miles an hour.
- 1 Polson Special Biplane
- 1 Daugherty Eiplane.

In addition to fully equipped machines, the company will also handle airplane motors. It will have service stations where repairs can be made and planes and motors overhauled. A full stock of parts will be kept, also motors of 90 to 150 h.p. Pilot and mechanical instruction will be given and standard Curtiss machines will be handled, including the JN4D planes, Orioles and Seagulls. No outside capital is interested in this concern, the company being entirely a local affair. New price reductions will make the cost of planes from \$1,600 to \$6,500.

It is proposed to show that airplanes are adaptable for rapid inter-city transportation by business men, oilmen, cattlemen, ranchmen, and sportsmen, especially in reaching isolated places. As an example, a plane has been actively in use by an oil man who maintains his home in Los Angeles but makes frequent - sometimes daily - trips to the Bakersfield oil fields. Another use made of the Curtiss Seagull type, sold by Mr. Diess to the Cannery Fish Co., is to send it out to locate schools of fish and wireless the information to the fleet, which immediately puts out from Los Angeles and Long Beach harbors for the fishing grounds. Motion picture studios and film stars have purchased a number of planes both for professional and private use.

Daugherty taught himself to fly at Dominguez Field in 1910 along with Glenn Martin and Lincoln Beachy. He made many early exhibition flights, and was one of the first to offer his services for instruction of pilots during the war. He was instructor and test pilot at North Island and March Field. Immediately after the war he returned to his home at Long Beach, California, and established himself in commercial aviation, having carried about 8,000 passengers, with a total time in the air of about 4,000 hours.

Diess was one of the first to volunteer for service from the Los Angeles Athletic Club, and was assigned to an early aeronautical class at the University of California. He was ordered overseas in 1917 with the 15th Foreign Detachment and received pilot training at the Ecol de Tours, France. He has had experience flying Nieuports, Spads, Moraine-Parasols, Caudrons, Sopwiths and DeHavilands. He returned home to Los Angeles in 1919, after spending 17 months overseas, and became associated with the Syd Chaplin Aircraft Corporation in Los Angeles as pilot, salesman and sales manager, selling \$75,000 worth of planes in a year. For the past year he has been connected with the Curtiss Aeroplane and Motor Corporation as their Pacific Coast representative.

SCHROEDER'S ALTITUDE RECORD ECLIPSED

Lieutenant John A. Macready, Air Service, established a new altitude record at McCook Field, Dayton, Ohio, on September 28th, beating the world's altitude record formerly held by Major Schroeder and made at McCook Field in the Spring of 1920. The flight was made in the Lepere airplane - the same used by Major Schroeder, equipped with a General Electric supercharger improved by the Engineering Division.

The indicated altitude reached was 40,800 feet. This corresponds to a true altitude above sea level of 37,800 feet. The corresponding figures reached by Major Schroeder were, indicated altitude 38,180 feet, and a corrected or true altitude above sea level of 33,000 feet. The flight has been far more valuable from an engineering point of view than any previous altitude flights, as much valuable data was obtained. Much improvement was noted in the equipment as well as in the engine, because the pilot was kept more comfortable and was better able to operate the plane than on previous high altitude flights. The temperature indicated at the highest altitude was 50° F. below zero.

CONQUEST OF ARABIAN DESERT BY AIRCRAFT

Heretofore the Arabian Desert had been regarded as a bar to direct communication between the Mediterranean and the Persian Gulf. Airplanes, instead of crossing it, flew on a semi-circular course round its norther extremities,

and so covered many more miles than actually separated the airdromes on its eastern and western sides. The length of the new route is 580 miles, and the line it follows passes through Amman in Transjordan and Kasrel Azrak, where there are now landing grounds, and then in an almost straight line crosses the Arabian desert to Ramadie on the Euphrates and leads thence to Baghdad.

The Royal Air Force have carried out the survey. They had the cooperation of the Emir Abdulla in establishing at Amman an advanced base 45 miles east of Jerusalem. There in May was assembled a flight of aeroplanes, armoured cars lent by the British War Office, and desert tenders fitted out with wireless telegraph apparatus.

The locating of the first 150 miles of the route was done with little difficulty. Then the ground parties began to find their work more and more toilsome, until 160 miles from their starting point they struck a vast tract of rough lava beds. Scattered across this tract, which was intersected by deep wadis, were enormous boulders. But a way out of the lava bed had to be found, and when those working on the level were well nigh baffled, and when the growing heat of June added to the hardships under which they labored, news at length came by wireless from the scouting airplanes far ahead that a way out of the wilderness of stone and dry stream beds had been found. That was on June 16th. The ground parties forthwith set to work anew and forced a passage through 10 miles of heart-breaking country out into the desert again, where they struck land that was comparatively easy to work. Four days later ground connection was made with Baghdad when the cars arrived at the emergency ground at El-jid, 300 miles from Jerusalem. Operations were pushed on from the Baghdad side, and on June 25th Ramadie was entered by air and land. Baghdad was entered on the following day.

Thus the route was roughly laid out. Work is now going on in perfecting the emergency landing grounds, and in making permanent the ground organization along the track.

UNUSUAL INCIDENTS IN AVIATION

GOAT MAKES A PARACHUTE JUMP

During the Labor Day festivities at Carlstrom Field, Arcadia, Fla., a certain four-legged animal was made "the goat" in one of the numerous surprises afforded the large throng of interested spectators. During the course of the baseball game played late in the afternoon between Carlstrom and Wauchula, Lieuts. Strahm and Claude flew over the crowd in a big DeHaviland and "ground strafed" the diamond. As the ship zoomed, after a dive towards the stands, it was seen that Lieut. Claude was not the sole occupant of the rear cockpit, but that he held one of Carlstrom's mascots, the only parachute-jumping goat in captivity. Climbing steadily, the plane reached an altitude of about 3,000 feet, when the goat was assisted from the plane and started the long jump. Twenty-five minutes later the intrepid animal struck the ground about a mile from the field. The chute collapsed, and when the rescue parties arrived the mascot was contentedly cropping grass, refusing to make any statement for publication other than a blase and sophisticated "Baaaa". Lieut. Strahm landed, took the goat back into the plane and shortly afterwards circled over the ball field and the cheering stands.

This episode would no doubt tax the ingenuity of Cartoonist Briggs in attempting to depict the thoughts of said goat as it was making its flight through space.

FLYING AS A CURE FOR DEAFNESS

Climbing 12,400 feet in an airplane above Spokane, Washington, and then descending in a nose dive with terrific speed, Patrick Hennessey, 8-year old son of E. S. Hennessey, recently made a vain attempt to recover his hearing. The flight was made from the Foster Russel aviation field in the afternoon, "Tex" Rankin piloting the 150 h.p. Curtiss plane. The trip to 12,400 feet above sea level, believed to be a new altitude record in this locality, was made in one hour and 55 minutes. The descent was made in two minutes, or at an approximate speed of 75 miles an hour. A large crowd which watched the flight was thrilled as the plane shot downward, and the intrepid youngster waved his hand at them and smiled, although his great hope that he might hear again was not realized.

AIRPLANE REPLENISHES FUEL SUPPLY OF AN AUTOMOBILE

Recently Al Johnson, of the Johnson field, which is located south of Dayton, was returning home from Cleveland via air. Mrs. Johnson was stuck somewhere between Dayton and Cleveland without gasoline in her automobile. Seeing the ship coming over at about 1,500 feet altitude, she recognized as her husband's, she signalled him with the baby's coat that she was out of gas. Mr. Johnson immediately flew to the nearest town, obtained gasoline, landed alongside of his wife, replenished the tank, and both arrived home happily about 6 o'clock.

STEALS AIRPLANE AND WINDS UP IN A HOSPITAL

Frank Strand, professional aviator of Sioux City, Iowa, holds the record of being the first airplane thief. So far as known, this is the first instance of a civilian aircraft being stolen by flying it from the hangar, and if others share Strand's experience this variety of theft will not become popular. When about 1200 feet in the air, a mile from the start, motor trouble developed. The plane descended in wide sweeps towards the Evanston golf course, as the only open spot. It missed a grove of trees by an eyelash and buried its nose in the tenth green.

From his cot in a hospital Strand admitted he had stolen the machine, a Canadian Curtiss belonging to W.C. Burmeister, an exhibition flyer at the Palatine fair, because he "wanted to make some easy money out West". He said he was out of work and broke. Strand is a mechanic and had been taught to fly by a former army aviator. The stolen machine, which was worth \$5,000. is declared by its owner to be a "complete washout", the airman's lingo for total wreck.

RINGING UP A PLANE

The entire British fleet of air expresses in regular use between London and Paris is now equipped with wireless telephones, and during their aerial journeys the machines are in constant communication with the ground stations.

It is no uncommon thing to hear while "listening in" at a ground station the pilot of an incoming air express speaking to the pilot of an outgoing machine and advising him of peculiarities of the weather along the route. The enterprise of British air transport firms in this matter is illustrated by the fact that foreign machines using the London air port, although outnumbering the British by nearly 2 to 1, do not use wireless. In fact, on only one foreign machine has any attempt been made to provide this necessary facility.

AN AIR AMBULANCE

Recently one of the Continental air expresses was converted into an ambulance for a woman patient traveling with a nurse from London to Paris to undergo an urgent operation. The woman, after being taken to the air station in a motor car, was carried in an invalid chair and lifted into the saloon of the airplane, which had been specially prepared for her.

A "KAYDET'S" VERSION OF THE 23d PSALM

The JN is my airplane; I shall not want another.
It maketh me glide down into the palmetto and the alligators.
It landeth me beside stagnant waters.
It tortures my soul.
It guideth well above the airdrome for its name's sake; but on the cross-country it is a bum.
Yea, though I fly over the hangars in the morning, I fear no evil.
The con-rod and the crankshaft they discomfort me.
It preparast a bum landing in the presence of mine instructors.
It annointeth my goggles with oil; the radiator runneth over.
Surely, goodness and mercy shall follow me all the days of my life. And I shall eat in the mess hall forever, shall I not remove it from the hangar.

-Carlstrom Field News,
V-3857, A.S.

England.

An irregular passenger service by air to Madrid is announced by the Lep Aerial Travel Bureau of Piccadilly Circus. A large number of airplanes of various types are being delivered to Spain and advantage is being taken of the seats available to institute a passenger service. The flight will be made in easy stages and will occupy approximately two days, but should the passengers' requirements necessitate greater speed the flight will be made in one day. At present twice-weekly departures are proposed.

The vote for Civil Aviation for 1921-22 amounts to £1,000,000. Of this about £425,000 is allocated for the maintenance of airdromes, salaries and wages, works, buildings, lands, purchase of experimental aircraft, etc. for the development of civil heavier-than-air craft.

India.

The Air Board of India, under the Commerce Department, is a purely advisory body without executory functions. As soon as funds are available, the Government of India has decided to prepare a trunk air route from Rangoon (via Calcutta and Allahabad) to Bombay. When this route, or a section of it, is completed, tenders will be called for an air mail service over the completed portion. Local governments in India have also been empowered to lay out air routes within their own boundaries.

China.

For the purpose of maintaining peace and order of airdromes the Aeronautical Department has recently organized an Airdrome Police Training Corps, which consists of 160 men divided into four groups commanded by a commander-in-chief. The work of this new organization was completed on June 1st. When the Pekin-Shanghai air-line begins its service these policemen will be sent to different airdromes for duty.

The Aeronautical Department has engaged four new pilots from England and America for service in connection with the Pekin-Shanghai air service, which, according to latest reports, was scheduled to start on August 1st. These pilots are Captains Jones, McMullin, Campbell Orde, and C.H. Dolan.

The five students sent by the Aeronautical Department to England to study airplane construction have completed their courses after one-year's hard study. Three of these students have been assigned to the Tsin-ho Aircraft factory, where technical experts are needed. The remaining two were ordered to America to continue their studies in Military Aviation.

Germany.

Civil aviation in Germany is confined to the use of about 125 ex-military machines, with the exception of certain civil type machines which that government has been allowed to operate. The German government has carried out the instructions of the Inter-Allied Commission of Control by prohibiting the flight to foreign countries of any of those ex-service aircraft, but internal services have been in operation on nine routes. Preparations are being made for a service between Munich and Lake Constance to be extended to Geneva via Zurich, in conjunction with a Swiss Air Transport Company. The German Post Office pays a subsidy of 21 marks per kilometre flown on regular air lines.

Roumania.

The Roumanian Minister of Communications has been authorized to sign a contract with a French Company, the Franco-Roumaine de Navigation Aeriennne, under which the Company has the right of air transport in Roumania on the Paris-Strasburg-Prague-Vienna, Budapest-Belgrade-Bucharest-Constantinople air route over a period of 20 years. The agreement carries with it an annual maximum subsidy of 6,500,000 lei to the Company in return for certain guarantees, including the placing of its material and personnel at the disposal of the Roumanian Government in the event of mobilization.

Aeronautical News from other Countries (Cont'd)

Japan.

The program of the Air Bureau includes the consolidation and encouragement of civil aviation, the supervision of private undertakings, and the establishment of an international air route. Civilian pilots are to be trained at the military Aviation School, 292 applications having been received for 10 vacancies available in 1921.

TAMPA'S NEW AVIATION FIELD

Benjamin Park Aviation Field, Tampa, Fla., was officially opened on September 18th, and the event was marked by an interesting program of entertainment. A considerable part of the personnel from Carlstrom Field, including Major Royce, Commanding Officer, and Lieut. Colonel Wm. E. Gillmore, Chief of the Supply Group, Office Chief of Air Service, were in attendance.

Major Royce and Col. Gillmore were the first to land on the new field, and shortly afterwards six other planes made their appearance and one by one glided down to the field. When the pilot, passengers and mechanics of the seven planes had landed they were escorted by automobile out to Temple Terrace, where a reception committee, headed by M.C. Fowler, took the aviators and city officials in charge. A drive over part of the Temple Terrace acres was followed by an informal dinner on the edge of the Hillsborough river. Following the dinner, Secretary L. P. Dickie, of the Board of Trade, as toastmaster, introduced Mayor Brown, who welcomed the Carlstrom aviators and paid a tribute to the part aviation is playing and will play in the development of the country. Major Royce then responded on behalf of the flyers. Speaking of the aviation field which Tampa has just opened, Major Royce pictured aviation as a coming industry, which in its bearing upon the affairs of the world of the future cannot yet be conceived. "You have a very good field here now," he said, turning to Mayor Brown and Mr. Dickie, "but some day you will use that field or one like it for passenger and pleasure purposes only. Beyond that and farther from the city limits you will have an immense field into which planes will fly, carrying products from your state to other parts of the country and in return bringing products back to Tampa."

George W. Benjamin, donor of Benjamin Park, was then introduced. He expressed his gratification at the opportunity of seeing the progressive strides which Tampa is making.

Lieut.-Colonel Gillmore made a short talk, in which he told of the progress of aviation. "The government spent \$33,000,000 for aviation purposes last year," he said. "This year our appropriation has been cut down to \$19,000,000. Of this amount \$6,000,000 will be spent for developing purposes alone."

Mr. Dickie then spoke briefly, thanking the Temple Terrace Committee for their entertainment on behalf of the Board of Governors of the Board of Trade.

The entire party made its way back to the flying field where the aviators held the Tampa folks breathless with a series of exhibition stunts. As a climax of the unusual flying, Lieut. Strahm as pilot and Captain Rust as passenger took Lieut. Wade up as passenger. The latter who was seated easily on the end of one of the wings, with two parachutes strapped to him, waited until the plane had reached an altitude of 2,500 feet and then slid off into space and glided slowly down to the ground.

In the evening the aviators, with their wives and friends, who came to Tampa by automobile, were taken out to the Country Club, where a dance was given in their honor.

METEOROLOGICAL STATION AT CARLSTROM FIELD ✓

The Signal Corps is establishing a meteorological station at Carlstrom Field, and Sergeant John M. McClelland has been sent to this station to have charge of this work. The various instruments and implements are already on hand and are being set up under Sergeant McClelland's direction. The station is located at the Old North Gate, and the guard house there is being used in connection with the work.

SQUADRON NEWS

Kindley Field, Fort Mills, P.I., July 30.

The personnel of Kindley Field turned out for a speed demonstration one evening this week when the bugler became confused and blew "Fire Call" instead of "Retreat". There was little difference in the highly conservatoried tones of the music, but the response to the call, everyone with some apparatus for fire prevention, indicates that the field has an efficient fire force.

A rainy night at Kindley Field Motion Picture Airdrome is about the height of "comfort". With two feet in about two feet of mud and a slicker arranged so that there is one hole big enough for a periscopic view, together with the precipitation of a horizontal rain has come to mean more than one bath for the enthusiastic movie fan of this field.

The congested conditions of supplies at this field has made it imperative that all men, save those needed for guard, communications and policing, be placed on duty in connection with the packing and shipping of all surplus supplies now stored here.

Lieutenants Richter and Dallas made a cross-country flight to Manila and return. It was their intention to land at Manila, but upon reaching there they found that the general rough condition of the surf would not warrant the making of a safe landing.

Lieutenant Dallas gave Lieutenant Lea an instruction flight this week, this instruction being necessary on account of Lieut. Lea's crippled arm which was temporarily maimed during a hunting trip more than a year ago. It is expected that Lieut. Lea will soon be back on duty as pilot.

On Tuesday, July 26th, Major B. Q. Jones and Colonel Pope made a flying trip to Corregidor to make an inspection of the supplies at that field.

The operations of the 2nd Squadron continue to be handicapped by the rough condition of the surf on the hangar side of the island. Flying has ceased until arrangements in supplies can be made, all efforts being directed to this end.

During the past week very little flying has been done by the commissioned and enlisted personnel of the 17th Balloon Company, due to the fact that all men were on the target range on July 25th, 26th and 27th, and on garrison fatigue the remainder of the week.

Hqs. 91st Squadron, Eugene, Oregon, Sept. 3-10, 1921.

Before a crowd of over 10,000 people, the Eugene, Oregon, Municipal Aviation Field was officially dedicated on Labor Day. The weather was ideal for flying, and every thing came off according to schedule. One of the features of the day was the baseball game between the 91st Team and the Noti (Oregon) "Wild Cats", which was won by the aviators, Chief Bahe being on the mound. It was the best game in which the local team has taken part this season. A Ferris Wheel, Merry-go-round, and a trap shooting tournament helped to keep the public amused. In the afternoon a civilian plane took up passengers and a wing-walking exhibition was staged by "Nine-life Square" Johnson, one of the local cadets. After supper the Eugene City Band gave a dance on the field, which was well attended, and everyone went home about midnight at the end of a perfect day. Among the visitors of note were Governor Olcott of Oregon and Major H. H. Arnold, Air Officer of the 9th Corps Area.

Two forest patrol records were broken the week ending Sept. 3d. One patrol located 29 fires, which is a record for one day. Another day's record was broken in the location of 34 fires by two patrols, their reports being entirely by radio.

Forest Patrol ended officially on September 10th. Figures are not available as to actual results accomplished in the way of locating and reporting fires, but from the Air Service standpoint the season was a very successful one, in view of the large amount of flying and the small number of crashed planes, considering the character of the flying fields and the surrounding mountainous country.

Carlstrom Field, Arcadia, Fla., Sept. 7.

Carlstrom's Labor Day Celebration surpassed all expectations and was, indeed, an overwhelming success. From the time of the arrival of the first spectators early in the afternoon until the strains of the last waltz died away some time

Carlstrom Field, Arcadia, Fla., Sept. 7. Cont'd.

before sunrise, the program was replete with thrills, surprises, and enjoyment for the many hundreds of guests that attended. The aerial exhibition commenced at 2:00 p.m. when, despite a stiffening wind from the southwest and two converging rain storms which made formation flying difficult, a phase of aerial warfare was carried out in a demonstration by five Curtis H machines piloted by Lieuts. McDonald, Taylor, Haight, Webster and Hewitt. This formation went thru all the accepted formations for aerial warfare, despite the bumps and storms. Then came the stunt ships, piloted by Lieuts. Williams, Hewitt and McClellan, and they gave a pretty exhibition, indeed. Next, despite the wind and rain which was beginning to fall, Lieut. Claude in a DH4 took off with the parachute jumpers, Sgt. Hill and Private Benner. Because of the storm the men were unable to get to the windward of the field and were forced to float nearly a mile to the north of the airdrome, landing in a marshy pond, somewhat to their discomfort.

The increasing rain caused the temporary postponement of the flying program, and the spectators took refuge in the hangars.

At 4:30 o'clock the storm blew away and the program was resumed. After draining the ball diamond, the post team locked horns with Wauchula, and treated the fans to a real battle. The game was scoreless until the seventh inning, when Carlstrom pushed over the winning run. Credit for the hard earned victory goes to the team, but it must be shared with the cheering section which put up the "pep" when needed.

In the evening a masquerade dance was held in Hangar X, commencing at nine o'clock. Costumes were many and varied, displaying taste and originality. Soon the confetti and punch began to fly and it was not until two A.M. that the orchestra wore out, and everyone went home tired but happy.

Carlstrom now boasts of a new fire truck, "Henry's" old bus has been retired and the equipment transferred to a new Dodge Chasis. Now the Fire Department is "All dressed up and no place to go".

Flying time for the week was as follows: "A" Flight 86 hours, 50 minutes; "B" Flight, 105 hours, 50 minutes; Headquarters Flight, 51 hours, 50 minutes; total time 244 hours, 30 minutes.

Carlstrom Field, Arcadia, Fla., Sept. 14.

On Thursday night Carlstrom Field scored another big success when the E. & R. Department put over one of their "Fite Nites". There was not an idle moment from the time the Carlstrom Band started off with "Hail! Hail! The Gang's all here" until the last negro battler crawled through the ropes and left the victor engaged in picking up the spoils of war.

The first bout brought together Greenwood and Stahl, 150 pounds, who opened up the argument with a sweet scrap for four rounds. The decision went to Greenwood.

The second bout between welter weights Felkin and Dollard was a lively scrap from start to finish. After four hard rounds of punching and infighting, the bout was declared a draw.

Next came a wrestling match between Knight and Downes. Knight being 17 pounds heavier rushed matters and seemed about to win when Downes suddenly took advantage of an opening and gained the first fall in 13 minutes and 14 seconds. Downes also gained the second fall, downing his heavier opponent in four minutes and 45 seconds.

The next bout between bantams Jarvis and Seible proved to be the best event of the evening. After Seible had been knocked down twice in the fifth round the referee stopped the bout and awarded the decision to Jarvis.

The main event of the evening was a 6-round bout between Corporal Brown and Sergeant Fehr, the Champion of Florida, at catch weights. Fehr had much the best of the bout, although he was unable to knock out his opponent, and received a unanimous decision from the judges.

Last came the negro Battle Royal, which afforded much merriment to the crowd. The largest dinge won the coin after a warm scrap.

All the Marine officers at this field have been ordered to Quantico, Va., and will leave at once. By this order Carlstrom loses a fine bunch of men, viz: Capt. R. J. Mitchell, Capt. H. G. Shephard, 1st Lieut. W. G. Farrell, 1st Lieut. E. M. Randall and 2nd Lieut. I. W. Miller.

Carlstrom Field, Arcadia, Fla., Sept. 14, Cont'd.

Lieut. and Mrs. Ward are rejoicing over the safe arrival of a fine 7-pound baby. Sunday was the day, and a better baby could not be - at least so says the proud father. The baby is no "Recruit" for she is a young lady. Carlstrom Field rises and drinks a toast (in water) "A long life and a happy one".

The last game of the baseball season has been played, leaving Carlstrom the winner of the League pennant. Now comes football practice, and Lieut. Vidal holds practices daily. Soon the team will take on all comers and expects to smash them most heartily.

Flying time for the week ending Sept. 14th was as follows: "A" Flight 76 hours and 10 minutes; "B" Flight, 99 hours and 20 minutes; Headquarters Flight, 64 hours and 25 minutes; total 239 hours and 55 minutes.

Balloon Company No. 31, Camp Knox, Ky., Aug. 30.

On Saturday a Demonstration was given for the benefit of the National Guard organizations present at Camp Knox for training. The balloon, as usual, participated, being attacked by enemy aircraft. The observers jumped and the balloon was hauled down and then ascended to remain in observation until the end of the problem. This Demonstration was really the best one of all, being preceded by talks and explanations of the different arms employed - the machine gun, the rifle grenade, the hand grenade, the Stokes Mortar, the 37 m.m. gun, the Tank, and gas and smoke grenades.

The entire camp is sorry to lose General Lassiter, who goes to Washington to become Assistant Chief of Staff, G-3. On Saturday evening the General was entertained with a dinner and dance at the Central Officers' Club. Dinner was served on the lawn, and practically every officer and lady of the garrison attended.

The company lost forty men by discharge on August 31st. The outfit will still be able to fly the balloon and function after a fashion, but it will take every man left in the company to put the balloon up and to put it away.

The new free balloon has been received and the personnel is looking forward to flights therein. There are six sergeants in the company who lack only a few flights to qualify as pilots.

A football team is in process of organization and twenty candidates for the team have reported. As for indoor sports, the pool table is being repaired and a very attractive Day-Room is being fixed up for use this winter.

On Wednesday (Athletic Day) there was a contest between the men to be discharged and those who are to remain, the latter winning - 61 points to 48.

Langley Field, Va., Sept. 12.

The 88th Squadron returned to the post Friday from West Virginia, after an absence of ten days. The squadron was ordered there to be in readiness to quell any disturbance which might arise with the striking coal miners of Mingo County. The crash of the Martin Bomber near Poe, killing Lieutenants H. L. Speck and W. S. Fitzpatrick, and two enlisted men, was the only incident to mar the otherwise successful expedition. Lieutenant W. S. Hamlin organized the searching party that found the plane some two days after the crash. Corp. Hazelton, a member of the crew of the ill fated ship was the only one found alive. He knew nothing of the crash, having been asleep when the accident happened, and waking only once in the two days following. He was pinned down by the ship in such a way as to cause no circulation in his lower limbs and practically had to be carried out thru nine miles of unbroken wilderness. He was otherwise uninjured. The crash was some thirty odd miles from the nearest railway.

The erection of the semi-rigid Italian Airship Roma is progressing quite rapidly, and it is expected that the big bag will be seen cavorting about Hampton Roads in the very near future.

Upon completion of the bombing maneuvers the Field Officers' School will start its second course. There are twelve captains on the post who will compose the student body.

March Field, Riverside, Calif., Sept. 6.

At the present time March Field is a very good example of the "Deserted Village", since all training activities ceased with the last class. Of the students, Captains Little and Collar have been ordered to Kelly Field for further

March Field, Riverside, Calif., Sept. 6, Cont'd.

training, while the cadets are to take up the work of forest patrol. Twelve cadets are now at Mather Field, and orders are in for the remaining fifteen to proceed by plane as soon as the necessary gas can be obtained for their transportation. This leaves the field personnel with plenty of time to arrange their property records in the anticipation of "getting out from under" in the near future.

One flight of the Forest Patrol is now working out of March Field under the direction of Captain A. F. Herold, with three cadets flying the two patrols. Number One Patrol covers the country between Riverside and Santa Barbara, the ship going up one day and returning the next. Number Two Patrol is a circular patrol over the Big Bear Valley. Both patrols have done valuable service, both in preventing fires that would have developed seriously and also in assisting in combating several serious fires that have occurred.

At last the ambition of the first lieutenants of March Field is about to be realized. The majority of the men served long weary years as seconds before the coveted silver bars were obtained, but eventually they arrived, only to have a big slice of their joy strangled, for there were no seconds left to do them honor. This is now all changed and the world looks brighter for all except one second lieutenant by the name of G. H. Fitzpatrick. Lieut. Fitzpatrick finished the course of instruction at this field with the last class of cadets and was awaiting orders when his commission arrived, on the 24th of August. Lieut. Fitzpatrick is now on leave while the department heads are burning the midnight oil in an endeavor to devise ways and means to have him assigned to their departments on his return.

Lieut. Rogers had the misfortune last week to choose an SE with a crystallized axle, but there the misfortune ended. When an SE with a broken axle lands and does not nose over, it is a day when guardian angels hover near. Even with the axles in good condition it seems that there ought to be some limit to the weight that one ship of that type should be expected to carry.

Flight B, 12th Squadron (Obs.) Nogales, Arizona, Sept. 10.

During the past week most of the boys of this flight had some experience in farm work. The flying field was getting pretty well covered with high prairie grass. Everyone began work, cutting, raking and hauling, and by the end of the week the field was bare, and it was estimated that more than sixty tons of hay were taken from the field. Farming implements were borrowed from nearby farmers.

This Flight has one of the best gardens in the State, all the vegetables used this year coming from the squadron garden. The garden is three square acres in area and is irrigated from the waste water of the camp. The garden contains every vegetable that can be raised in this country.

Aberdeen Proving Ground, Md., Sept. 15.

The largest load of bombs ever dropped in the United States, and probably in the world, was dropped at Aberdeen on September 14th. Two 2,000-pound bombs were carried to 7,500 feet in thirty minutes by a Handley-Page on one trip. The bombs were dropped on the bombing field to test their functioning. It is expected that several 4,000-pound bombs will be dropped next week at Aberdeen.

Mather Field, Mills, Calif., Sept. 6-12.

A very distressing automobile accident occurred on Tuesday night, August 30th, when Lieut. A. E. Waller, A.S., while driving to Mather Field from Sacramento along the Folsom Boulevard was run into by two intoxicated men driving a car on the wrong side of the road. Mrs. Waller, Baby Waller and Mrs. J. C. Gardner (Camp Hostess) were with Lieut. Waller. Mrs. Waller was deeply cut about the face, Mrs. Gardner's scalp was painfully torn and her right leg cut. The ladies were rushed to the Post Hospital at once. Capt. L. M. Field, the Flight Surgeon, attended them, sewing up the many cuts they suffered and getting them to bed as soon as possible, as they were suffering from the shock. Mrs. Waller is now at home, although still in bed, and Mrs. Gardner will not be able to leave the hospital for at least another week. The quick action of Lieut. Waller in turning the car undoubtedly saved the lives of all occupants. It was a miracle that little Charlie was not hurt, as Mrs. Waller was holding him in her arms, and although both her hands were hurt the baby was not even scratched.

Mather Field, Mills, Calif., Sept. 6-12

Visitors at the field during the week ending Sept. 6th were Capt. Lowell H. Smith, en route to San Francisco from Eugene, and civilian fliers arriving with two ships to be flown over the State Fair Grounds during the Fair Week in Sacramento, September 3rd to 11th.

Mrs. T. H. Miller returned from a three weeks' visit to Riverside, Los Angeles and beach resorts, going to and returning by automobile stage. Mrs. Miller admitted that even though the weather here warmed up to greet her on the day of her return she was very glad to be home again, but she was not half as glad as Captain Miller and their two daughters.

Lieut. Arthur G. Liggett, former Radio Officer at this station, has been transferred to Crissy Field for temporary duty. Mrs. Liggett accompanied him, as Lieut. Liggett's special duty at the Presidio will last for several weeks probably. Lieut. W. S. Sullivan has taken over the radio work of the post.

Major A. D. Cummings, of the Inspector General's Department, accompanied by Field Clerk Hughes, inspected all departments of the field on September 1st, 2nd and 3rd. After a general inspection of all troops on Saturday morning, he left for San Francisco.

Private Frank Nowakoski (familiarily known as "Novey"), Corps Area Bantam Weight Champion, won again in the fights held under the auspices of the American Legion of Sacramento. "Novey" boxed Lee Mason on Friday night, September 2nd, and gained the decision. Everyone on the field is interested in these athletic meets, and every man who can get off attends whenever "Novey" battles. Lieut. J. W. Slattery, A.S., Executive Officer at Mather Field, acted as judge in all the bouts.

Flight B, 91st Squadron, Camp Lewis, Wash., Sept. 3-10.

Forestry patrol, temporarily suspended on August 24th, has not yet been resumed. True to form, the State of Washington is receiving its share of rain, and the forests are practically removed from all danger of fire. Should the present rate of rainfall continue for any length of time, it is possible that the forest patrol in this State will be abandoned for the present season.

September 10th marked the end of the forest fire patrol season in the State of Washington. Word to this effect was received from the office of the District Forester at Portland, Oregon, through the local Liaison Officer, on September 14th.

Staff Sergeant William L. Klutz, piloted by Corporal James M. Larsen, both of Crissy Field, arrived at this base last Sunday, Sept. 4th, for the purpose of photographing the forest patrol route. Weather conditions, however, prevented their making the flight as planned, and they returned to Eugene, Oregon, last Friday.

Kelly Field, San Antonio, Texas, Sept. 26.

The 3rd Group (Attack) formerly the First Surveillance Group, which was moved from El Paso, Texas, to Kelly Field, has been combined with parts of Squadron and enlisted men left by the Pursuit Group which has been transferred to Ellington Field.

Kelly Field welcomes the new Squadron, the 26th (Attack) which was recently organized with surplus enlisted men taken from organizations having more than the quota allowed by the new Tables of Organization. Lieut. Lotha A. Smith was appointed Commanding Officer of the new squadron.

A very limited number of flying cadets have remained at this field. Most of the 75 to 80 cadets stationed at this post for advanced pursuit and bombardment training as well as radio were transferred to Langley Field, some to Ellington Field with the Pursuit Group, and the rest finished their course and have been discharged to the Reserve Officers Corps as Reserve Pilots.

A large new hangar is nearing completion. It is located at the east side of the field, opposite Hangar 24, and will be the beginning of a new line of hangars forming a perpendicular line to the one already built.

Interesting lectures are being delivered to the student officers of the 2nd Group (Bombardment) in their class room on "Aerial Navigation", "Motors and Rigging", "Magnetism and the Compass", etc. All flying training and practice starts at 7:30 a.m. sharp.

Kelly Field, San Antonio, Texas, Sept. 26, Cont'd.

All airplanes have been thoroughly inspected and put in the best of shape in order to be ready for inspection by General Dickman, Commanding General of the 8th Corps Area, scheduled for October 3rd.

Ideal weather for flying has prevailed during the past week, and no rain or fog has appeared.

Bombardment missions during the week were as follows: On Monday six cross-country flights were made, four strategical reconnaissance, nineteen test, and sixty practice flights; total flying time 27 hours, 10 minutes. On Tuesday, three cross-country, two test and eighty-one practice flights were made, with a total flying time of 9 hours and 10 minutes. On Wednesday, four strategical reconnaissance and eight test flights were made, for a total flying time of 13 hours and 50 minutes. On Thursday, three test flights, one camera obscura and fifty-one practice flights were made, with a total flying time of 5 hours and 40 minutes. On Friday, twelve test flights, eight dual control and three practice flights were made, for a total flying time of 4 hours and 10 minutes. No flying instruction is given on Saturdays.

The following is a description of liaison work carried out by the 3rd Group (Attack) during the past week, in connection with tactical problems held by the 2nd Division.

The mission of the Air Service as requested by G-3, 2nd Division, was to furnish one plane each to the 3rd and 4th Infantry Brigades, to be employed as directed by respective brigade commanders. Arrangements were made with each brigade commander for employment of planes and the possibilities and limitations of Air Service liaison explained. Proper maps and copies of field orders from each brigade were furnished the Operations Officer of the 3rd Group (Attack) and conferences held were attended by pilots and observers assigned to the mission.

Ground panels and pyrotechnics were employed as per "Liaison for all Arms", War Department, 1917. Special ground panel signals were arranged for in advance by both sides and used effectively. Radio code signals were used by 3rd Brigade plane in simulating artillery adjustment. Due to increased interest, better liaison was established for the second problem with correspondingly better results.

The cooperation extended the Air Service officers by Brigade officers previous to and during the problems was excellent, particularly after the first problem. Specially prepared maps were dropped by observers at P.C. stations, showing position of troops. Other messages were continually dropped giving information as requested by ground panels. Targets for artillery fire, such as marching columns, tanks, reserves, etc., were noticed by aerial observers and messages dropped giving map co-ordinates. Panels were displayed promptly by ground troops upon call from plane and taken in immediately upon acknowledgment. The total flying time for the officers of the 3rd Group (Attack) was twenty-four hours and thirty-five minutes.

Instruction in equitation will be given at this field to the officers and ladies of the post on different dates, Mondays and Thursdays being set aside for the officers of this command.

Polo is scheduled to be played by officers of the field on Tuesday, September 27th.

Ross Field, Arcadia, Calif., Sept. 19.

On Saturday, September 3rd at Pasadena, California, Lieut. "Joe" Bailey was united in marriage with Miss Florence Currie. The wedding was private, only a few intimate friends being present. Lieut. Courtland Brown was best man, assisted by Capt. Watts.

The usual bi-monthly dances of the post are growing to be one of its permanent institutions, all looking forward to the next one.

Major and Mrs. John D. Reardon left September 17th for Fort Omaha, Neb., where Major Reardon will assume command.

The Commanding Officer's quarters was the scene of a delightful reception Sunday afternoon, September 11th, prior to the departure of Col. and Mrs. Baldwin for Washington, where they expect to remain for a couple of weeks.

Lieuts. Neely and Flood entertained at a dinner and dance at the Ambassador on Tuesday night, September 13th, in compliment to Col. and Mrs. Baldwin and Lieut. and Mrs. Welch who are slated to depart from the post.

Ross Field, Arcadia, Calif., Sept. 19, Cont'd.

Captain Watts entertained at dinner previous to the student dance on Wednesday night.

In the absence of Colonel Baldwin, Major M. F. Davis will assume command of the post.

Lieut. Shoptaw, who recently reported to this post from El Paso, Texas, where he was on duty with the 8th Airship Company, is sick in the hospital.

Captain and Mrs. Savage entertained at bridge on Wednesday, September 14th.

Captain and Mrs. Gates entertained at a dinner party on Friday evening.

Fairfield Air Intermediate Depot, Fairfield, O., Sept. 26.

Col. J. M. Wainwright, Assistant Secretary of War, made a thorough inspection of this post on Wednesday, September 21st. He was accompanied by Captain Ralph, A.S., his secretary.

The officers of this post, from the Commanding Officer down, have been enjoying themselves immensely for the past week by engaging in a golf tournament. Captain Charles O. Thrasher, Q.M.C., seems to have the tournament clinched at the present time.

A very happy event occurred early of the morning of September 6th, upon the arrival of an 8 $\frac{1}{4}$ pound baby boy to Mrs. Benj. G. Weir, wife of Major Weir, Commandant of the Stockkeepers' School at this post. He has been named Benjamin Grant Junior.

The Officers' Club entertained with a bridge party on Thursday, September 22nd. First prize for gentlemen was won by Capt. B. J. Peters, Medical Corps, Flight Surgeon. First prize for ladies was won by Mrs. E. E. Adler, wife of Captain Adler. The bridge party proved to be a grand success, everybody enjoying it immensely.

Lieut. F. P. Kenney has reported for duty from the Montgomery Air Intermediate Depot and was assigned to the Cost Accounting Section of the Compilation Section.

Lieut. Morris L. Tucker, A.S., has reported from Selfridge Field, and has been assigned for duty in the Engineering Department.

Lieut. C. V. Haynes left for his home in Mt. Airy, N.C., on a leave of absence for twenty days.

The Engineering Department has at this time one Spad, four Fokkers, one Ambulance Curtiss 6-H, one Curtiss JN4-H, seven DH 4B's and one SE-5A, going through the shops. Two DH-4B's are messenger ships for the Fifth and Sixth Corps Air Officers. One has been flight tested and will soon be flown to Fort Benjamin Harrison; another of the DH-4B's is a special "Honeymoon" job, being rebuilt for McCook Field.

The Radio Department is equipping all DH-4B's with sending and receiving sets and bonding all ships so that radio equipment may be immediately installed. A large radio sending and receiving set will be installed at this field. Weather reports at present are being received from Arlington from a set made by the radio employees here. It is felt that a larger set is needed, and the new one will be large enough to reach either coast.

Part of the Balloon Section which was transferred from Omaha to McCook Fields is being taken care of at this field, due to the fact that McCook's air-drome is unable to take care of a Pony Blimp. Everybody is very much interested in watching the baby blimp when it is in the air.

McCook Field, Dayton, Ohio, Sept. 15.

During the month of August a total of 1,844 visitors made the tour of the field. This breaks all previous records. It appears that outside folks are just beginning to realize the wonderful things to be seen at McCook Field. Some people are too prone to watch the unfortunate side of our aviation development without keeping up with the trend of improvement. They are, for this reason, often dumbfounded as they go through the field to see the extent of the experimental work.

Plans are under way for an Officers' Dance to be given in the near future. It is hoped that the new balloon hangar can be utilized for the event.

McCook Field, Dayton, Ohio, Sept. 15, Cont'd.

Orders have been received by Lieutenant E. E. Aldrin, Chief of the School Section, and Lieutenant G. B. Patterson, Chief of the Technical Data Section, to the effect that they are to report at San Francisco November 5th, from whence they are to sail for the Philippine Islands. Lieut. Aldrin expects to gain a leave of absence before making this journey as he wishes to make a tour of Europe.

In addition to his other duties Major Hoffman, Chief of the Equipment Section, has been appointed Assistant to the Chief of Division in the absence of Major McIntosh.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE OCTOBER 20, 1921.

COMPLETION OF FLYING TRAINING AT POST FIELD

What is perhaps the most thorough course of flying training yet accorded any class of student flyers in the history of the United States Air Service terminated at Post Field on Thursday, September 15th, when the summer term of the Air Service Observation School, which commenced on April 25th last, was brought to a close, with a total of 42 flying officer graduates, all of whom were at once reported to the academic board convened at this station as ready to be recommended for rating as airplane pilots. Eight field officers are included in the list of graduates.

Including time in the air as observers on practice tactical missions, the pilot books of the officers graduated show an average total of approximately 130 hours flying time each which, when distributed over a period of but little over five months, gives a clearer idea of the amount of flying required of each student to complete the curriculum of advanced flying training at this school. The above figure is, of course, exclusive of flying time accumulated at primary Air Service schools, which will average about 70 hours for each pilot, giving a grand total of approximately 200 hours in the air before the student flyer was considered ready for the much coveted rating of airplane pilot.

A comparative value of the above figures, which helps to indicate that the ideal of peace time air training is thoroughness, may be obtained when it is remembered that, under the stress of war requirements, many pilots were operating successfully on the Western Front before they had gained a total air experience of as much as 50 hours, and in many cases, particularly in the Royal Air Force, 30 hours or even less would cover the total instruction and practice time of flying officers prior to their first trip over the lines, whilst the average useful life of a pilot in actual war service missions on the Western Front, measured in hours of flying time in contact with the enemy, was computed as considerably less than 100 hours.

Ten hours of formation practice in DeHaviland 4 Liberty machines was made a part of the advanced training curriculum for each pilot of the present class at Post Field, and a further idea of the thoroughness of practical flying experience gained by each of the present graduates before being reported as ready for rating is gained from the fact that the cross country training of the class as a whole involved a grand total of approximately 127,000 miles which, divided among the class of 42 student flyers, gives an average of over 3,000 miles for each pilot on cross country flying alone, all of which was carried out during the final month of the course. Several organized cross country flights, with formations in some instances including up to 15 machines, were flown by student officers to destinations varying in distance of from 200 to nearly 500 miles.

The numerous individual cross country missions involved were in almost every instance thoroughly successful, and served to demonstrate in the most practical way the ability of the student to navigate his course under all conditions of weather and varying terrain, operate from unfamiliar and often quite unfavorable fields, and to exercise practical resourcefulness in the care and repair of both ship and motor without assistance from the home station.

Five student officers of those who enrolled in the Air Service Observation School on April 25th, 1921, failed to complete the course, and there were two fatalities among student officers incidental to flying.

SWISS AERONAUT WINS INTERNATIONAL BALLOON RACE ✓

The James Gordon Bennett International Balloon Race, which started at Brussels, Belgium, was won by the Swiss entry piloted by Paul Ambruster, who landed on Lambay Island off the east coast of County Dublin, Ireland, covering a distance of about 600 miles. The American balloon piloted by Bernard Von Hoffman, with J. G. McKibben as passenger, flew to within five miles of the Irish coast, but owing to the fall of the wind they were unable to land, and therefore drifted northward, being finally forced to drop in the sea near a passing steamer which came to their rescue. Ralph Upson, another American entrant in the balloon race, landed in North Wales after traveling 420 miles in 27½ hours. All of the 14 competitors in this race have been accounted for.

KOKOMO, INDIANA FLYING MEET ✓

A general feeling of optimism with regard to the future of aeronautics in this country prevailed at the flying meet held in Kokomo, Indiana, September 22nd to 24th, by the Curtiss-Indiana Company. More than fifty airplanes of various types were on the field, among them being a Fokker D-8 Monoplane, a Farman FE2B Bomber, a Morane Parasol, SP5's, JN4's, etc.

Messrs. E. A. Johnson and J. E. Rae flew their FE2B to the meet from their home field in Dayton. This ship was used during the war for bombing. It has a Beardmore motor, a four-bladed propeller, a nacelle with capacity for four passengers, and is capable of lifting great loads and making long flights.

Mr. Johnson expressed gratification over the season's business in an interview had with a correspondent of the Chicago TRIBUNE, stating that the firm has been selling ships and making money. He believes that there is a great future ahead of them and that next summer will do much to develop aeronautics. Mr. Rae was quoted as saying that it is the speed of airplanes that is going to build up this business. It takes five hours' travel from Kokomo to Chicago by train, and this distance can be flown in one hour and 15 minutes. That is what the people of this country want.

Buck Weaver and E. M. Laird flew to the meet from Wichita, Kansas, in their "Laird Swallow". Mr. Laird stated that his factory is running full time, business being good and plenty of ships being sold. The general depression one hears about so much does not seem to have affected his business. According to Buck Weaver, "the people in the West are crying for faster travel. They want the train schedules torn up - and they are going to have it. They will pay gladly if they can save time."

The gypsy flyers, the pilots who take their Jennies and Canucks around the country for passenger-carrying at \$10 a trip, are all happy. They have made money this year, they say, adding that Americans are losing their fear of flying and that in some towns the people "repeated" constantly, taking ride after ride.

LIEUT. BARTLETT WEDS.

Announcement has just been received of the marriage of Miss Sara Leathers, of Orviston, Pa., to Lieutenant Frank M. Bartlett, Air Service, U.S. Army, on October 5th. Congratulations and best wishes to the happy couple.

Lieut. Bartlett, who is one of the best known pilots in the Air Service, is a native of Port Townsend, Washington. He enlisted in the Aviation Section, Signal Reserve Corps, in May, 1917, passed his R.M.A. test on October 6th, and was commissioned a 1st Lieutenant on October 25, 1917. He was promoted to the grade of Captain on August 23, 1917. He performed excellent work as flying instructor both at Kelly Field and Carlstrom Field, acting as Officer in Charge of Flying at both of these stations. He also served two tours of staff duty in the Office of the Chief of Air Service, Washington, D.C. On July 1, 1920, he was commissioned a 1st Lieutenant in the Air Service, Regular Army.

Lieut. Bartlett is now under orders for a tour of duty in the Philippines.

APPROPRIATIONS BY ITALIAN GOVERNMENT FOR CIVIL AND MILITARY AVIATION

For the fiscal year ending June 30, 1922, the Italian Government has appropriated 42,700,000 lire for the Army Air Service and 22,060,000 lire for Civil Air Service, both services being under the jurisdiction of the War Department.

With regard to the appropriation for military aviation, the largest sum is allotted for the renewal of aviation material (13,500,000 lire). Next in order is 13,000,000 lire for gasoline, oils, etc. For expenses incidental to the preparation of flying personnel 4,800,000 lire is allotted; maintenance of buildings and airdromes 2,200,000 lire; special compensation to flying personnel, 2,400,000 lire; conducting experiments of aircraft and aircraft armament, 2,050,000 lire; repair and maintenance of planes, motors, and other material, 1,300,000 lire; aerial photography, 150,000 lire; and miscellaneous expenditures, 300,000 lire.

Of the appropriation for civil aviation, 4,500,000 lire is allotted as subsidies to private aeronautical concerns for the operation of airdromes and aerial routes by heavier-than-air and lighter-than-air craft; 2,300,000 for carrying out studies and experiments; 3,000,000 lire for construction purposes; 2,460,000 lire for the operation of a preliminary flying school; and the remaining 7,200,000 for miscellaneous purposes. An additional appropriation, not yet determined, is to be allowed the Civil Air Service for the construction of commercial airplanes.

The salaries of army personnel are paid out of other appropriations for the support of the Army. Many of the airdromes are also supported from funds appropriated for the maintenance of army posts. It is estimated that the Army and Civil Air Services receive from other appropriations to cover various services such as maintenance of posts, pay of the army, etc., 50,000,000 lire, making a total sum to be expended for military and commercial aviation in Italy during this fiscal year of approximately 112,760,000 lire, or slightly over \$28,000,000.

THIRD ARMISTICE DINNER OF THE AERO CLUB OF AMERICA

The Third Armistice Dinner will be held on November 11th on the roof of the Pennsylvania Hotel, under the patronage and management of the Aero Club of America, which, since a year ago last August, has embraced also the membership of the American Flying Club. The Dinner will be unique as marking a reunion of all elements in American aviation, military, naval, civilian and club. Among the guests of honor will be Rear Admiral William A. Moffett, Director of Naval Aviation, and Brigadier-General William Mitchell, Assistant Chief of the Army Air Service. It is hoped that Major-General Mason M. Patrick and Major General Charles T. Mencher, the incoming and outgoing chiefs of the Air Service, will also be present. Other distinguished figures in American aviation who have accepted invitations are Colonel Edward H. Shaughnessy, head of the Air Mail, and Benedict Crowell, former Assistant Secretary of War. The Naval fliers will be headed by Commander Kenneth Whiting, and the Army fliers by Capt. "Eddie" Rickenbacker, leading American Ace. Due to the semi-official character of the Dinner and also to the important step it marks in the development of American aviation in the future, efforts are being made to attract fliers from all parts of the United States, both those in active service and on the reserve list. Lieut.-Colonel Harold E. Hartney who commanded the First Pursuit Group in France, and who is now Executive Secretary of the Aero Club of America, asks that all aviators send in their reservations at once to him at headquarters, No. 11 East 38th Street, New York City.

XBIA AIRPLANES TO BE OPERATED

The Commanding Officer of the San Antonio Air Intermediate Depot has received orders to set up immediately ten XBIA airplanes, which will be assigned to a squadron at Kelly Field to be designated by the Commanding General of the 8th Corps Area. This being the first time that this equipment is to be operated in the Air Service, special pains will be taken to see that the necessary detailed reports are secured, in order that an accurate historical record may be

obtained and such other information gathered as may be of value to the Engineering Division at McCook Field in the development of future equipment. Cross-country flights in this airplane will be prohibited until the necessary testing about the airdrome has proven satisfactory.

COMMERCIAL AVIATION IN FRANCE ✓

During the course of an interview with a correspondent of the London Morning POST, M. Laurent Eynac, the French Air Minister, remarked that the development of aviation in France, especially commercial aviation, has been most remarkable lately. There are already organized six regular aerial lines for the carrying of goods and passengers and, so far as air transport is concerned, France is ahead of all other nations. In May next a new aerial line, Paris to Amsterdam, will be inaugurated.

Aircraft are especially useful on account of the saving of time, M. Eynac stated. Thus, it takes more than nine hours to go from Paris to London by train and boat, but by taking the aerial mail one can be in Regent street four hours after having left the boulevards. By air, Brussels is only two hours and a half from Paris, and Strasbourg only three hours and a half. Prague is seven hours from Paris, and one can reach Morocco after a thirteen hours' flight, while the most rapid ship takes four days. Railways take ten hours to go from Bayonne to Bilbao; a motor-car will make the same journey in five hours, but a seaplane unites the two towns in 55 minutes.

Another factor of paramount importance to the future development of aircraft is that of security. The results already obtained entirely guarantee the security of passengers. During the year 1919-1920, 1,900,000 kilometers (1,180,603 miles) have been covered by the flight of French aeroplanes. Of this total there were only 7 killed and 7 wounded, that is to say, an average of one killed and one wounded per 170,000 kilometers (105,633 miles) flown. Consequently, it is not surprising to notice the constant development of aerial transports in France. The transport of passengers has greatly developed. Only 960 persons travelled by air in 1919; the number of passengers amounted in 1920 to 6,750. This year during the month of March 665 people travelled by air mail. The carrying of goods has similarly progressed; 13,900 kilogrammes were carried by machines in 1919, while the total commercial transport amounted in 1920 to 103,330 kilogrammes (227,739 lbs.) This last figure includes a great many parcels sent from Paris to London by the dressmakers and milliners of the rue de la Paix, who utilize the plane extensively in making their deliveries. The value of their consignments on the line Paris-London during the year 1920 exceeded 16 million francs, and this figure will be largely surpassed this year.

M. Eynac, in conclusion, states that he feels sure that aircraft will prove in the future a most important factor for promoting good entente and solidarity among the nations.

FRENCH AEROPLANE CONSTRUCTION ✓

A London financial journal states that the French Military Air Service will next year have over 40,000 airplanes, if the Army Budget passes. The French Flying Corps would then be composed of 286 regiments, each of 12 squadrons. French airplane constructors are at present in a very strong position, mainly because the French Government did not cancel all its war contracts, but allowed constructors to execute the greater number of them. It was thought that this would be the best way of subsidizing the French air industry.

In addition, the French constructors had in hand substantial orders from Japan and South America. It is to this policy and to the most intelligent cooperation of the French military technical services with civilian aviation that France owes her present lead in the air.

UNUSUAL INCIDENTS IN AVIATION ✓

TRANSPORTATION OF INJURED MAN ON WING OF AN AIRPLANE.

One of the most unusual cases on record of the transportation of an injured man by airplane has just come to light in a report to the Navy Department from the commander of the Fourth Air Squadron, Marine Corps, in Haiti.

Recently an urgent call was received in Port au Prince, Haiti, requesting aerial transportation for a case at Maissade, in the inland jungles of that island, to the hospital at Port au Prince on the coast.

Lieutenant Kenneth B. Collings, a Marine flying officer, at once started for Maissade in a DH4B plane. On his arrival, however, he was met with a problem. Transportation of wounded and sick by air is a common thing in the island, where roads are rudimentary and at times bandit-infested, but this case was special. The injured man was badly mangled so that he had to be put in splints from head to foot, and accordingly could not be carried in the usual way, upright, in the cockpit of the machine. His condition was critical and hospital attention was urgent.

The injured man was accordingly bandaged to the eyes, given a special face mask, wrapped securely to a six foot plank, with a blanket, given a helmet and goggles, and lashed to the wing of the machine, close to the fuselage.

The bulk of this bundle on the wings made the flying "rather difficult", the report commented. It required thirty-five minutes to make a trip that otherwise would have taken hours, or even days, of jolting and travel.

A DAY IN THE AIR AT 82.

Mrs. Haines, an intrepid lady who is nearly 82 years of age, recently experienced her first airplane flight, making the journey from London to Paris and return on the same day. In describing her sensations in the air, Mrs. Haines stated that she greatly enjoyed the trip, being especially interested in seeing the French gardening arrangements. She stated that she could see far more than she thought possible. The little rivers were visible and now and then the traffic, and occasionally the movement of human beings, and it was startling when the plane was descending at Paris to see the people again life-size. The only drawback to the trip, Mrs. Haines added, was the noise, the vibration being so great that conversation could not be indulged in. She felt no symptoms of air sickness and stated that if the trip becomes cheaper she will choose to travel to Paris by air if she lives to be 100 - as her doctor promised her. Mrs. Haines has traveled in many different ways, for she has been round the world three times. Her ambition now is to go to Buenos Aires by air.

OIL-ENGINED PLANE

To reduce the cost of "airway" working, by replacing the petrol motor by an engine using crude oil and working on the semi-Diesel principle, is now the aim of Professor Junkers, whose German all-metal monoplanes are well known. Professor Junkers has been experimenting for some time with adaptations of the Diesel system, and it is now reported that an experimental six-cylinder engine has been used in an airplane and has worked promisingly.

PLANE SET FIRE IN AIR TO TEST FLAME-RESISTING "DOPE".

An experiment was recently made at the Hendon Aerodrome, London, to put to a practical test measures devised for protecting airmen from the risk of fire. One of the protective measures is the use of a new fireproof dope for the fabric of the machine, and particularly for the wings. Another is the treatment of the aviator's clothing with a fireproof composition, which is the invention of a shell-shocked soldier, who is an ex-chemist.

A small Avro machine was selected for the experiment, and the pilot, a young man named Phillips, was so confident about the efficacy of the protection that he displayed no hesitation whatever in going aloft with the intention of firing his machine in mid-air and trusting to the new dope to save the aeroplane from destruction, and to his specially-treated suit of clothing to protect himself.

The Truro Patent Fire-Resisting Syndicate treated the clothing with the ex-service man's chemical preparation, while the wings and all other inflammable parts of the machine were liberally treated with the new dope. A smoke candle was placed at each side of the fabric-covered pilot's cabin. Tin

cannisters filled with petrol-saturated cotton wool were placed at various points on the upper and lower sections of the plane. Each container was supplied with a fuse, and the whole system was electrically connected, so that the aviator could start the conflagration at will. Finally, the wings and body of the machine were plentifully saturated with petrol immediately before the airplane was set in motion.

When the plane was well started on its flight and had made a few circuits of the airdrome, Mr. Phillips switched on the electric current, which fired the fuse, and for a few moments bright flames and dense smoke could be seen, but the expected supreme test was not reached, for the immense air pressure on the rapidly moving machine not only prevented any spread of the fire but actually extinguished that in the petrol container.

When the machine came to rest there was no longer any sign of fire, but the wings were scorched at points where the red hot splutterings from the smoke candle had fallen. Small holes were burned right through, but apparently the dope had successfully resisted any tendency for the smouldering to develop into flames. The Truro suit worn by the aviator had not been submitted to the supreme test, but the coat was placed on the grass, saturated with petrol and fired. The petrol burnt fiercely, and the fabric was scorched and carbonized, but not even the cotton lining could be induced actually to burn.

SHOOTING AT TOY-BALLOONS FROM AN AIRPLANE ✓

British airmen have devised a new form of aerial sport as one of the attractions of an airplane race meeting to be held at the Croydon airdrome, London, which it is expected will prove to be interesting as well as amusing. From the platform on the top of the meteorological station a series of small hydrogen-filled balloons will be released, and from the airdrome an airplane will ascend in pursuit, carrying a passenger armed with a shot gun. When the airplane is within range the gunman will fire at the balloons, which on being hit will burst. Successive "coveys" of balloons will be released, and airplanes will go up in pursuit, and the object of the gunmen will be to see who can shoot down the largest number of balloons.

A FLYING MATINEE ✓

Going to another city to give a matinee performance and returning in time for the evening performance is, perhaps, something that has never before been attempted in the history of the theatrical profession, especially where the towns played in are some 190 miles apart. According to the London Daily HERALD the enterprising manager of a theatrical company playing in "The Wrong Number" at the Duke of York Theatre, London, has completed plans whereby his company will fly to Manchester to give a matinee performance and then fly back to London for the regular evening performance there. Handley-Page machines will leave Crinklewood at 9 a.m. and will be due to arrive at Manchester about 11:30 a.m. The departure from Manchester will be at 4:10 p.m. and the arrival in London is timed for 6:30 p.m.

LIEUT. MACREADY'S RECORD ALTITUDE FLIGHT ✓

Editorial comments of Dayton newspapers on the recent record-breaking altitude flight of Lieut. J. A. Macready praise in warmest terms the courage and daring of this young army aviator. The Dayton HERALD speaks of his modesty in making little of undertaking a feat that involved the apotheosis of daring and a courage which faltered not, whatever consequences may be met, and goes on to say:

"To a man who has fallen 10,000 feet in a crippled airplane and lived to tell the tale; to a man who has seen the propeller of his plane swing off into space, leaving him without power for purposes of descent; and to a man who previously had experienced the physical distress of seeking the breath of life at high altitudes when oxygen tanks failed, his experiences might seem trivial. But to the earthbound they constitute an epic fit for the finest efforts of a Homer, a Virgil, a Dante or a Milton. 'On another occasion, when attempting

an altitude flight, the propeller flew off the plane in the air, knocking off the air speed indicator which was attached to the wing strut and hitting the strut because of this excess speed.' That is the modest phrase that dismisses a previous experience, an experience that would cause an ordinary man to cover his face with his arms and await the final crash. But not so with Macready. Merely losing a propeller was no cause for surrender with him. It was all in the day's work. * * * * * The story of Lieutenant Macready should be read by every red-blooded person if only to learn how real human courage rises to meet every emergency, even when human ingenuity and skill have been exhausted to anticipate it. It is an epic of the air, in prose, of a brave adventure undertaken not for pleasure or thrill, but for the benefit of science and through science, for all men."

The Dayton JOURNAL, after reviewing the various official altitude records made in the history of aviation, raises the query as to how long this latest altitude record will stand, adding that no man knows what the morrow will bring forth in the science of aviation and the development of the airplane. It makes particular note of the fact that Lieut. Macready made this new record with remarkable ease in less than two hours' time without discomfort and without having that as his major object, his purpose being to test out a new kind of propeller in rarefied atmosphere,- an experiment, it is gratifying to know, proved highly successful. In another editorial, the HERALD mentions the fact that McCook Field, America's greatest aeronautical experimental school, is operating with reduced forces and inadequate appropriations, and expresses the hope that the next appropriation measure will carry a more substantial amount for the purpose of experimental aviation.

The Dayton NEWS has the following to say on Macready's adventure:

"Breaking an airplane altitude record is no small task. Nevertheless, the scientific achievement which has been gained by Lieutenant John A. Macready of McCook Field came to him without any of the inconveniences which Major R.W. Schroeder experienced when he established the former record. Macready's flight into the vast spaces of the sky is a praiseworthy adventure. It is the culminating event to a number of adventures which this daring pilot has had in recent months. Once his airplane fell in flames at one of the eastern fields, but he escaped unhurt. Later on the propeller of his airplane flew off while Lieut. Macready was flying over Trotwood. Again he landed in safety. Now comes his greatest thrill, a journey for 40,800 feet into the sky. He has been farther away from Mother Earth than any other airplane pilot. He has mixed with a part of the natural setting provided by Providence wherein man never before has ventured. The flight on Wednesday is said to have been planned to test a new propeller designed by Frank W. Caldwell, a Dayton man and an aeronautical engineer at McCook Field. Besides demonstrating the worthiness of this propeller, Macready has brought back to earth with him valuable information regarding air currents, atmospheric conditions and the performance of the heavier-than-air machine under circumstances never before encountered. It takes a man of bravery and consummate skill to establish a new airplane altitude record. Macready has demonstrated that Schroeder did not reach the "ceiling of the sky". Perhaps in the course of time another pilot will demonstrate that even Macready hasn't reached limits in altitudinous flight. The world of science will commend Lieut. John A. Macready for his valorous and remarkable air journey. It will watch with concern the official data of his flight for the knowledge the air service can gain from this adventure."

THE BLIMP AS AN OBSERVATION BALLOON

At the Army Balloon School at Ross Field, Arcadia, California, a second test was recently made of using a Pony Blimp as an observation balloon by means of attaching a cable. The Blimp was allowed to rise to a height of 1,000 feet and showed marked improvement over the initial trial as an observation balloon. The test clearly indicated that the motorized observation balloon has great possibilities. It is believed by many airship pilots that the Blimp will soon supplant the observation balloon, as it will be able to remain stationary over a given point by means of a cable. When it is desired to change position this may be done by hauling in the cable and flying to another point. Further tests will be made in the near future.

ALTITUDE RECORD BY URUGUAYAN OFFICER

A dispatch from Uruguay is to the effect that the Uruguayan military aviator, Captain Larre Borges, with two passengers, attained an altitude of 6700 metres (21,981 feet) being forced to descend from that height because of lack of oxygen.

MOTORLESS FLIGHT

A dispatch announces the achievement realized on September 2nd last by the German Engineer Klemperer who, in an airplane without a motor, flew for thirteen minutes, covering a distance of 5 kilometers.

The "Berliner Tageblatt" publishes an account of the exhibition of "planeurs" which gives prominence to the efforts of German engineers in this performance. Three of them, among whom was Klemperer, succeeded in giving remarkable performances. In spite of a contrary wind, Klemperer traveled 1,670 meters in four minutes. The other machines accomplished numerous flights, traveling a distance at least equal to ten times their height above ground.

The closing day of the exhibit brought about a new struggle between the contestants for the possession of the record. Martens kept in the air 5 minutes, 26 seconds, and traveled 3,581 meters. Kohler traveled 4,200 meters in 5 minutes and 5 seconds. Finally, Klemperer succeeded in keeping in the air for 5 minutes and 30 seconds, covering only about 2,000 meters.

AERONAUTICAL NEWS FROM OTHER COUNTRIES.

Ecuador.

Two S.V.A. 130 horsepower planes with a speed of 140 kilometers have been imported from Italy and presented to the Ecuadorian Government by the University Patriotic Club and the Syrian Colony. There are now seven planes in the government service and one more is promised by the Chinese colony. The National Government has contracted with an Italian manufacturer to furnish 12 airplanes with the equipment for repair shops. The Bank of Ecuador and the Commercial and Agricultural Bank have each contributed 15,000 sucres toward the Government aviation field across the river from Guayquil. The total subscription for the field exceeds 50,000 sucres (approximately \$25,000).

Brazil.

The Directoria de Meteorologia e Astronomia of the Brazilian Department of Agriculture has been divided into two separate services, that of meteorology and the National Observatory. The meteorological service will continue the climatological work, established in 1919, standardizing the methods of all meteorological activities in the country and publishing all available data for the last 10 years. It will also establish a forecast service for central and southern Brazil; an aerological service for aviators and for the general progress of meteorological science creating kite and pilot balloon stations; a special coast service for navigation; agricultural and marine meteorology services; a special service of rains and floods; and the usual investigations in every department of meteorology, which may possibly lead to longer ranges in forecasting weather.

An important aerial transport company has been formed in Rio Grande do Sul for regular passenger and freight service between that city and distributing centers in the various neighboring states. The machines are of French manufacture.

Japan.

Japanese newspapers report that the Army Balloon Corps will participate in the maneuvers with the Imperial Guards Division at Suson near Mt. Fuji from September 12th to the 15th. The R model captive balloon will be used for observation purposes. Five officers of the Balloon Corps and several additional observation officers will take part.

AERONAUTICAL NEWS FROM OTHER COUNTRIES (CONT'D)

Japan (Cont'd)

Ten civilian aviation students at the Army Flight School at Tokorozawa graduated August 31st. This is the first civilian class at Tokorozawa, but it is expected that these classes will be continued regularly in the future.

A small, non-rigid type airship was recently purchased by the Japanese government from the Vickers Company, London, according to the Japanese "Aviation" Magazine. The airship performed its final test of four hours continuous flight on April 27th, successfully, only 30 men being required to handle it, and it ascended and descended very readily. The airship is described as having one "ship" in the center, capacity 5 men, and with a speed of over 50 miles per hour.

The graduation flight of the Naval Air School at Kokosuka took place on July 10th. The course was from Oppama (near Yokosuka) to Shinmaiko and return, six graduates taking part. Only one machine reached the latter place, the other planes being forced to descend into the sea. Bad weather conditions prevented this one plane from attempting the return journey.

Germany.

The Bavarian authorities are making arrangements to establish an air station of first-class importance at Munich. Discussions between the Federal State have taken place on the subject of Munich's favorable situation in relation to the continental airways of the future. An air service has been established between Danzig and Riga, linking up with the service from Danzig to Germany three times a week.

Engineers of the firm of Zeppelin had devised a metallic monoplane with four Maybach 250 h.p. engines, which would carry sixteen persons with their luggage. This machine, however, was declared by the Allied Control Mission a military plane and suppressed. The same firm also produced new types of metallic seaplanes with 185 or 250 h.p. engines to carry six or seven persons. The Germans have in most cases adopted for their aerial building, the metallic aeroplane. This type of plane can even dispense with a shed, and may be easily transformed into a bombing plane. The Junkers' factories at Dessau have constructed a duralumin aeroplane which can carry six passengers, although it only has an engine of 185 h.p. (JL-6 in U.S.)

Powerful groups have been formed in Germany for the development of aerial mails. These groups are seeking the cooperation of foreign companies in Sweden, Denmark, Holland, England, Italy, Austria, and the United States, in order to develop the international lines of the future. Ten lines are already established throughout Germany. This aerial system, according to the Germans, will be the beginning of an international system which will include France, America, Italy, Spain, Africa, Austria, the East, and also Russia.

England.

Four British airplanes recently left London for Madrid for delivery to the Spanish military authorities for use in Morocco against the Moors. They were assembled at the Aircraft Factory at Croydon by the Aircraft Disposals Company. Three of the airplanes are Bristol Fighters, equipped with 300 h.p. Hispano-Suiza engines, a type that proved most successful during the closing stages of the war, while the other is a DH4 Daylight Bomber, fleets of which carried out the first daylight raids on the Rhine towns. This is the second batch of British fighting airplanes flown to Spain and delivered to the Spanish Military Air Service.

The only British airplane to compete for the Henry Deutsche de la Meurthe Cup scheduled to take place in France on October 1st is the Napier-Gloucestershire Mars I, which won the Aerial Derby recently held in London, when an average speed of 163.34 miles per hour was attained. Hopes are entertained that a greater average speed will be obtained in France. Certain modifications have been made to the plane, which will again be flown by Mr. J. H. James.

AERONAUTICAL NEWS FROM OTHER COUNTRIES (CONT'D)

France.

An engineering firm in France, according to the Paris "Echo", has just completed an airplane which will alight on water as well as on land and will carry six passengers, this plane being intended for the London-Paris service, and will come down on the Thames and the Seine. Service between the rivers of the two capitols has long been under consideration, saving as it would nearly an hour in the time taken for the journey from London to the heart of Paris. It is more than probable that by next Spring a Thames-Seine airway will be inaugurated.

A DH9 airplane belonging to the British DeHaviland Aircraft Company, making a tour of Europe, recently reached Paris after a remarkable flight covering a distance of 4,250 miles. The airplane left London in August and went first to Paris and then, by way of Brussels, Hamburg, Copenhagen and Stockholm, to Christiana. Returning to Copenhagen, it then flew to Berlin, Warsaw, Prague, Vienna, Venice and Milan, reaching Paris by way of Mimes. The tour was completed without a mishap and on schedule time.

Portugal.

A regular daylight airplane service between Paris and Lisbon is announced by the Portuguese Company of Aerial Navigation for this winter. Next year it is proposed to extend the line to London, Brussels, Amsterdam and Berlin.

The Netherlands.

Advertisements recently appeared in the leading Dutch newspapers offering for sale 36 new German airplanes, of which eleven are said to be ready for immediate use. The advertisements state that the machines are equipped with 200 h.p. Benz and 120 h.p. Mercedes engines, and that all spare parts are also available.

Italy.

Italy is said to be contemplating the inauguration of an aerial postal and passenger service from Genoa via Munich, Berlin and Copenhagen, to Stockholm. The flight is expected to take 15 hours.

Australia.

Interesting figures on the cost of the operation of commercial airplanes have recently been given out by the High Commissioners for Australia. An Avro-Dyak airplane belonging to the Queensland and Northern Territory Aerial Services, Ltd., was flown 7,400 miles in 111 hours, with 285 passengers, at a cost (exclusive of the pilot's salary) of 8½d per mile, or 4½d per mile as the cost for carrying each passenger. Another plane, a BEZE machine, had flown 6,370 miles in 98 hours, with 296 passengers, at 41s. per hour, or .7½d. per mile. These costs are little, if any, above those of a 3-passenger motor in the same territory.

Czecho-Slovakia.

The progress made in Prague in aerial transport since its inauguration there last February is striking. Daily services of airplanes connect Prague with Paris, Strasbourg and Warsaw, while the next few months will see the city linked with Budapest, Belgrade, Bukarest, Constantinople, Dresden and Berlin. During February only three persons made the journey from Prague to Paris by air. By June the figures had risen to 76 for the month. The Franco-Roumanian Air Navigation Company has some 40 airplanes in service, some of which carry five passengers, together with their luggage. This company has already conveyed over 500 passengers and so far not a single mishap has been recorded. In the transport of parcels, newspapers, etc., still more rapid progress has taken

AERONAUTICAL NEWS FROM OTHER COUNTRIES (CONT'D)

Czecho-Slovakia (Cont'd)

place. In February 16 lbs. of parcels were conveyed; in June, exclusive of newspapers, some 7,000 lbs. were carried. In February the quantity of newspapers taken by air was some 3 lbs weight. By June this had grown to a little more than $1\frac{1}{2}$ tons weight.

For the extension of the air services to Constantinople a large airplane is on order. It will possess four motors with 1,200 h.p. and will be fitted for the accommodation of 16 passengers with their luggage. It will attain an average speed of 120 miles an hour.

SQUADRON NEWS

Balloon Company No. 31, Camp Knox, Ky., Sept. 9-17.

On the 31st of August the company lost 40 men by discharge. The camp looks very lonesome, indeed, but the next morning, notwithstanding this loss of personnel, the balloon was up bright and early.

The spirit and morale seems to have picked up since the discharge of these enlisted men, as naturally those who are staying are contented with the Army and all are pulling together.

The Recreation Room is very prettily decorated with curtains. The new pool table is well patronized.

The Field Artillery School opened on Monday, September 12th, about 160 officers being present. Thirty of these officers are 2nd Lieutenants recently commissioned from civil life.

Preliminary pistol practice by the company has been completed. It will be followed by instruction practice, and good results are expected, as the preliminary practice has been very thorough.

Ross Field, Arcadia, Calif., Sept. 6-19.

One of the regular semi-monthly hops recently given at the Officers' Club was attended by about 75 couples. The affair was preceded by numerous individual parties. An unusual diversion was caused during the progress of the affair by the burning up of a warehouse in Arcadia. The warehouse in question was located about three-quarters of a mile from the post. The conflagration started about 10 p.m. and was first observed by officers of the post. Everyone at the dance immediately proceeded to the scene of the fire to render any possible assistance. The fire siren on the post sounded the alarm and the government apparatus reached the scene of the fire and had three streams playing on it before the town apparatus arrived. Dancing was resumed upon the return of the party from the fire and was continued until one o'clock a.m.

Flying time during two weeks ending Sept. 6th consisted of 127 observation balloon flights for a total of 157 hours and 10 minutes, and 11 free balloon flights for a total of 15 hours and 34 minutes. The observation flights were for purposes of instruction in the Air Course and the free balloon flights for purpose of training student officers. The following officers qualified as pilots: Col. C. G. Hall, Major W. W. Vautsmaier and Capt. Wm. D. Wheeler.

The close of the week ending Sept. 12th ended the ground instruction for all sections undergoing instruction at the school. Section 23, consisting of 16 junior officers, is now nearing the completion of its air course and should be finished in approximately two weeks. Section 25, consisting of 4 junior officers, commenced the air course on September 12th, and has approximately four weeks' instruction in that work yet to do.

Flying time for the week of September 12th consisted of 119 flights in observation balloons for a total time of 138 hours and 15 minutes. This time consisted of various problems in the air course. Two free balloon flights were made for a total of 3 hours and 20 minutes, these flights being solos by Lieuts. John P. Temple and Albert J. Clayton, which qualified them as free balloon pilots. The total flying time of all kinds for the week was 121 flights for a total of 141 hours and 35 minutes.

The Athletic Officer, Captain G. D. Watts, has been invited to meet with the Southern California Football Officials Association in Los Angeles in the near future to discuss the subject of football. Hope is entertained that this field will be among those represented when the football season commences, and that it will be possible to arrange games with other posts, or with the American Legion posts of nearby towns.

The Officers' Club of Ross Field held an election recently, and Major M.F. Davis, A.S., was elected President for the coming season, Captain P. D. Moulton, M.C., Vice President, and Captain Edgar Sorenson, Secretary and Treasurer. An active social schedule is being planned for the winter months.

At the invitation of Colonel T. A. Baldwin, Jr., Congressman H. Z. Osborne inspected this station on September 17th. The Congressman was especially interested in the school building, which represents quite an exhibit of lighter-than-air materiel and equipment. He observed the working of the newly installed radio system and the operation of balloon observers conducting artillery fire.

Ross Fld., Arcadia, Calif., Sept. 6-19. (Cont'd)

Mr. Osborne was much interested in a flight in the Pony Blimp, and expressed great pleasure over his visit. He was accompanied by Mr. Ross Montgomery, an architect from Los Angeles.

The class of students which started the observers' course last spring has about finished its work, and within a few days a considerable number of new fliers will be wearing their wings. Prior to the commencement of the next course, starting on or about November 1st, a considerable amount of new equipment will be installed in the school buildings, and the courses amplified and made more interesting in many respects. A chief feature will be the adoption of illustrated lectures by means of motion pictures. The student officer is required to have considerable knowledge about the theory of handling a balloon prior to his actual air work and to the end that this may be made more instructive and more quickly and readily absorbed it is believed that motion pictures of such matters as the inflation, deflation, packing and operation of various kinds of balloons will be of much aid. An instrument room will be installed with some modern testing apparatus added to the present equipment. New methods of testing balloon instruments will be undertaken and a number of new devices tested out.

One of the most enjoyable dances ever held at Ross Field was that of the graduating class of the Observers' School at this post on Wednesday evening, September 14th, in honor of Colonel and Mrs. T. A. Baldwin, Jr. Several officers of the Navy were guests of Colonel and Mrs. Baldwin.

Carlstrom Field, Arcadia, Fla., Sept. 22.

Lieut.-Colonel Wm. E. Gillmore, who has been at this station since the middle of August, has completed his primary training and has gone to Kelly Field, San Antonio, Texas, where he will receive advanced flying training. Colonel Gillmore expressed his appreciation of the treatment he had received at Carlstrom and was most enthusiastic over the amount of flying he had learned there. He was impressed with the work being done at the field and departed a decided booster for Carlstrom Field.

With well over 30 men out for daily practice, the football team is rounding into shape. The backfield and ends are showing up well. The line is rather light, but full of scrap and pep. With a few cool days to work in the team will be in shape to open the season in style.

Recruiting has again been resumed, with a quota of fifty men assigned to Carlstrom Field, making it possible to get back some of the men who were recently discharged and who have found out how nice the Air Service really is with "three a day".

Flying time for the week was as follows: "A" Flight, 100 hours, 5 minutes; "B" Flight, 114 hours, 50 minutes; Headquarters Flight, 48 hours, 15 minutes; total 263 hours, 15 minutes.

Flight "B", 91st Squadron, Camp Lewis, Wash., Sept. 17.

Preparations for the removal of the entire flight to Eugene, Oregon, are rapidly nearing completion. The radio stations at Forks, the patrol stop, and at Camp Lewis, have been dismantled, the equipment packed and ready for shipment. It is expected that the trip will be made, by motor transportation and airplane, sometime during the coming week.

Mather Field, Mills, Calif., Sept. 19.

The formal and official opening of Crissy Field, at the Presidio of San Francisco, Calif., on Saturday night, September 17, 1921, was celebrated by a dance and buffet supper. The following members of this command attended: Major B. M. Atkinson, Lieuts. E. B. Bayley, F. S. Gullet, J. A. Madarasz and H. C. Minter, Lieut. and Mrs. N. Schramm, Lieuts. W. S. Sullivan and P. L. Williams, and Captain C. Kindler, Q. M. Corps. The opinion of the guests was that it was one of the prettiest and most delightful affairs they ever attended.

Cadets Ayers and Hix left Sept. 13th for the Air Service Recreation Camp near Blairsden, Calif. Although occasional frosts are reported in that section, the camp is still running and the fliers are glad to take advantage of this

Mather Field, Mills, Calif., Sept. 19. (Cont'd)

opportunity to get into the woods. Capt. A. D. Smith took a party hunting recently, and after three days of ill luck and just before returning to camp on the last day they saw several deer and shot two bucks. Everyone in camp has been feasting on venison ever since.

Lieuts. Gullet, Schramm, Minter and Cadet Means left by plane on Sept. 11th for Rockwell to obtain new ships for use on forestry patrol. They returned to Mather Field on the 15th, picking up Cadets Archer and Smith at March Field. These two flying cadets were transferred to Mather Field for advanced D H training.

France Field, Cristobal, Canal Zone, Sept. 19.

The smoker and opening of the new Post Exchange recently was quite an event. Captain Quinn, the hustling E. & R. Officer, arranged a very successful program for the smoker. One of the several numbers of the evening's entertainment was the Ohio Wesleyan Glee Club. This club of young college men, on a tour of the Canal Zone, contributed thirty minutes of entertainment that will long be remembered by the personnel of France Field. Drinks were served gratis by the new Post Exchange fountain.

The basketball season has just closed, with France Field in third place, the Navy taking both first and second places. France Field played in hard luck all season, sickness and accidents placing the team out of the running. The season was begun with the team winning five out of six games, and then the old "jinx" got on the job.

With the new sodded diamond and a strong line-up, baseball looks like a sure thing this season. Polo is also looming up. Two new ponies and new equipment have just been received. Practice will begin just as soon as the rainy season slackens up.

Lieut. Kenneth Garrett just returned on the last transport from the United States where he has been on leave. He says that France Field looks good to him and that he is delighted to be back.

Letters from Lieut. Samuel M. Connell, now on leave in the States, lead to the belief that he will be pleased to return. There is something about this place that "kinder gets in your blood".

With the arrival of the new units slated for France Field, it is expected to have one of the best stations in the Army. Shortage of personnel has long been a handicap in both training and athletics.

Work with the Coast Artillery in their annual target practice will begin shortly. This will be a welcome change from the preparation training that has been carried on for several months.

Kindley Field, Fort Mills, P.I., August 13.

On August 13th Kindley Field, in collaboration with the rest of the post, celebrated "Occupation Day" amidst one of the worst downpours of the season; all the flying that was supposed to have been done over the old memorial spot that made the day famous was performed in the milder and more appropriate form of barrack flying.

In view of the limited amount of flying, due to readjustment of the supply situation, whenever an urgent official flight is about to be made the flying personnel are seen to gather over in one corner to see who is to draw the lucky straw.

The Headquarters N. 9 Seaplane which has been undergoing some changes at this station, being fitted with a new pontoon, was delivered to Paranaque on Wednesday by Lieut. Dallas.

The 17th Balloon Company basketball team has won its first four games this season and now holds first place in the basketball league at this post.

Hqrs. Det. Fourth Group (Obs.) Paranaque Beach, Manila, P.I. Aug. 13.

Sergeant O'Briant arrived on the Transport SHERMAN with twenty carrier pigeons for the Civil Government. The Sergeant turned over his charges to the Director of the Philippine Air Service and then reported to the Headquarters Detachment for duty.

Hqrs. Det. Fourth Group (Obs.) Paranaque Beach, Manila, P.I. Aug. 13. (Cont'd)

Lieutenant Pardy, Air Service, was an incoming passenger on the Transport SHERMAN. He has been assigned to the 3rd Squadron at Clark Field.

Major B. Q. Jones, Air Officer, has outlined a course of training for enlisted observers.

The Air Service contingent in the Philippine Islands loses about 100 men who leave for the States, having completed their foreign service tour. These men came over with the 2nd and 3rd Squadrons during 1919. They have had a great deal of extra work to do on account of the construction projects not being completed when they arrived, and consequently were obliged to go through a tropical rainy season in tents, convert a piece of cogon grass into a flying field, and do a number of other things that their replacements will be spared.

Ross Field, Arcadia, Calif., Sept. 26.

On Thursday evening, September 22nd, Professor A. H. Merrill, of the California Institute of Technology, delivered a lecture at the school building to the officers and ladies of the post. The subject, "The Meaning of Physics With Some Thought on Einstein's Point of View" was explained in a manner which stamped Professor Merrill as far above the average in handling a subject of this depth. Each step was illustrated by such homely examples that could not help but register.

The regular semi-monthly officers' hop was held at the Santa Anita Officers' and Enlisted Men's Club last Friday evening. A large attendance participated in the festivities.

Orders have been received from the Chief of Air Service authorizing the inclusion of a course in Primary Airship Training at Ross Field. The new work will commence with classes starting October 3, 1921. For the present, the Pony Blimp will be used for instructional purposes, but in the near future, a type "C" or "D" airship will be sent to this field. The above announcement means the enlargement of the school and the installation of much new equipment. The importance and standing of Ross Field will be greatly enhanced thereby.

Captain Horace W. Mooney and Lieut. Karl S. Axtater, A.S., have just returned from a five-day hunting trip. These officers report a very enjoyable time.

Mrs. Martin, wife of Lieutenant Bruce N. Martin, A.S., has just returned from a month's vacation in San Francisco.

There were 64 flights in observation and free balloons at this station during the past week, for a total time of 92 hours and 26 minutes.

Langley Field, Hampton, Va., Oct. 1.

Assistant Secretary of War, Mr. J. M. Wainwright, was a Langley Field visitor Thursday. Mr. Wainwright made the trip to the field from Washington by airplane, having as his pilot Captain Wright of Bolling Field. Shortly after his arrival here Mr. Wainwright was met by General Mitchell and escorted by the latter to the scene of the recent bombing of the Alabama, this trip also being made by airplane with General Mitchell at the stick.

Captains T. S. Voss and Frazer Hale, Adjutant and Personnel Adjutant of Langley Field, have been relieved of their duties preparatory to their attendance at the Field Officers' School at this station. First Lieutenant Isaiah Davies has been placed on temporary duty as both adjutant and personnel adjutant vice the above named officers. Lieut. Davies is an old hand at the adjutant's desk, having served in this capacity here for nearly two years prior to his detail as commanding officer of the 50th Aero Squadron.

Captain Bean and Lieuts. Denton and Burlis have been ordered to Camp Knox, Ky., for duty; Lieut. Rex Stone to Pope Field and Lieut. Melville to Aberdeen.

Lieut.-Colonel A. Guidoni, Air Attache of the Italian Embassy at Washington, visited and inspected Langley Field on Thursday.

A number of officers and ladies of Langley Field attended the party at the Naval Air Station Friday night, which was given in honor of Lieut. Commander Eliason. Guests from Fort Monroe and Langley Field were taken to and from the Naval Air Station at Norfolk by a sub-chaser which docked at Old Point.

Captain and Mrs. Arthur E. Easterbrook sailed from New York Thursday on board the Cantigny for two and one half months' leave in Europe. They will spend the greater part of their time in Coblenz, Germany.

Langley Field, Hampton, Va., Oct. 1, Cont'd.

Mrs. Hanley motored to Washington Wednesday, where she will spend two weeks as the guest of Major and Mrs. Walton, formerly of Langley Field.

Mrs. T. S. Voss entertained with a bridge tea at the Officers' Club on Tuesday in honor of Mrs. R. B. Hough and Mrs. H. E. Sturcken.

12th Sdn, Obs, Nogales, Ariz., Sept. 17.

The officers of this organization have been doing liaison work with the Cavalry and Infantry at Fort Bliss, Texas; Camp Furlong, Columbus, N.M.; Camp Harry J. Jones, Douglas, Arizona; Fort Huachuca, Arizona; and Camp Steven D. Little, Nogales, Arizona, during the tour of inspection by the Corps Area Commander.

Kelly Field, San Antonio, Texas, Oct. 3.

On September 24th Lieut. J. A. Laird and mechanic made a cross-country trip to Laredo, Texas, and return in 3 hours and 50 minutes. On the 26th Lieut. Albro and mechanic made a cross-country trip to Fort Bliss, Texas, and return, in 11 hours and 20 minutes. On the same date Lieut. Gilbert and mechanic made a cross-country trip to Laredo and return in 3 hours and 10 minutes.

Captains John G. Colgan and Victor Parks, Jr., and Lieutenants R. D. Bigs and D. M. Myers, Air Service, have been transferred to Langley Field, Va.

Orders have been issued for Captain Frederick R. Lafferty of this field to proceed to the Philippines on transport scheduled to sail November 5th.

Captain Manuel Arozarena, Cuban Army, has reported at this station and assigned to the 2nd Group (Bombardment) for training.

Captain Henry Pascale, formerly of Kelly Field and now on temporary duty at Langley Field, Va., has been ordered to McCook Field, Dayton, Ohio, for the purpose of taking the course of instruction at the Engineering School.

Flying formation practice has been carried out every day during the past week by flying students (officers) of the 2nd Group (Bombardment), which has proved successful. There was a heavy rain here Thursday night, which lasted from 10:15 p.m. to 11:30 p.m., preceded by a strong wind blowing at about 50 miles per hour velocity. A very cold wave followed, lasting until about 7 a.m. The weather then became settled and warmer. Flying practice was carried out on Friday morning, although the field was still soft. Visibility was poor all day, due to thick low clouds.

On Thursday at 2:30 p.m. a DH4B piloted by Captain E. E. W. Duncan crashed to the ground in the middle of the flying field. Captain Duncan was slightly hurt about the face and scratched on his hands, and mechanic Kocian, 20th Squadron, who was passenger in the plane, had his face slightly cut.

Flying Cadet Murray B. Chidester received his Reserve Commission as a 2nd Lieutenant, A.S.R.C., effective June 17, 1919. He successfully completed the prescribed course of training and was rated as pilot by Special Orders, Hqrs. Kelly Field No. 216, Sept. 1921.

Leave of absence for 30 days was granted 1st Lieutenant Paul E. Burrows, Air Service, effective Sept. 26th.

It is contemplated organizing a Dancing Class amongst the enlisted men of Kelly Field if a sufficient number of them are interested in the new venture.

Steps are now under way to organize the Kelly Field football team, and candidates for the team have been called for. Members of the 3rd Group (Attack) are going to make the team a success if their plans come up to expectations. About five-sixths of the team are members of the Group, and if they clean up in football for this season as some of the organizations did in baseball along the border, another shelf will have to be built to accommodate the football trophies.

The 13th Squadron reports that they have received the first of the ten XBIA planes assigned to the organization from the San Antonio Air Intermediate Depot. This plane, described by McCook Field Bulletins as "Night Observation", is very compact and well designed for the purpose intended, and is powered with a "Wright" 300 h.p. engine. Much impatience is being manifested by the eager pilots of the Group (3rd Attack) to try out the "American Bristol" which in trial flights has shown greater speed than the DeHaviland.

Final arrangements are being made for participation in the annual tactical inspection of the Second Division, which will be conducted on the Camp Stanley

Kelly Field, San Antonio, Texas, Oct. 3. (Cont'd)

Reservation. Eight planes, together with the necessary personnel, have been assigned to the 2nd Division, and will be employed for liaison with the various units in simulated battle tactics during the week of October 3rd. Infantry Liaison, Artillery Relage, Photographic Missions and patrols will be called for. 1st Lieut. Lewis A. Dayton, 90th Squadron, who has been with the organization constantly since its reorganization in 1919, has recently been assigned to the office of the Air Officer, 8th Corps Area, Fort Sam Houston, Texas, for special duty.

1st Lieut. Robert D. Moor, who has been absent from the organization on detached service at Langley Field, Va., in connection with the Bombing Experiments carried on there, has returned to the 90th Squadron for duty.

On September 22nd Kelly Field won an interesting baseball game from the 16th Cavalry, overcoming a 5 run lead the Cavalrymen obtained in the 2nd inning.

In the operations of the Bombardment Group during the past week the flying time for various classes of training work was as follows: Reconnaissance flights, 17 hours, 45 minutes; Test flights, 9 hours, 10 minutes; Practice flights, 16 hours, 25 minutes; formation flights, 133 hours, 25 minutes; instruction flights, 1 hour, 55 minutes, attack flights 9 hours, 50 minutes; bombing raids, 2 hours and 15 minutes; total flying time 190 hours, 45 minutes.

Polo activities at Kelly Field have been greatly augmented with the arrival of a large number of officers who are interested in this sport. The Polo Association has now a membership of about forty, eleven of whom are active polo players and the remainder are doing equitation work preparatory for polo. It is expected that this field will enter at least one team in the 8th Corps Area Polo Tournament to be held in the near future. In connection with this sport, about 20 ladies of the post have organized a riding class which is being held twice a week, and it is planned later to extend this work to jumping and hunt practice.

About four enlisted men out of each outfit have been placed on flying status, in compliance with letter from the Office of the Chief of Air Service.

March Field, Riverside, Calif., Sept. 24.

March Field is now in quite a state of excitement over recent receipt of orders to form two squadrons for duty in Hawaii. In pursuance of these orders the Pilot School has been disbanded and the work of organizing and equipping the two new squadrons is well under way. The personnel will be drawn almost entirely from March Field.

It is understood that the 19th Squadron (Pursuit) will be under the command of Captain F. I. Eglin, and the 23rd Squadron (Bombardment) under the command of Captain A. F. Herold. The permanent station of both squadrons will be at Oahu.

Captain A. F. Herold and Lieuts. Younger A. Pitts and E. S. Norby flew to San Francisco Sept. 17th to attend the formal opening of Crissy Field. A very delightful and entertaining program, under the supervision of Major H. H. Arnold, was enjoyed by a representative gathering from the entire Corps Area Air Service.

There are no casualties to report, except that Major Stephen H. Smith, that battle scarred and veteran King of Bachelors, has finally succumbed to the dart of Cupid. It is rumored that the Major's forthcoming leave is to end in defeat for one of the most staunch and capable members of "Bachelor Hall", and great is the rejoicing in the ranks of the Benedicts. Congratulations are extended, but bachelors listen and take heed. If the fair sex capture this doughty warrior "they ain't no safety" in the world.

Captain Beeson, Medical Corps, has returned from his leave and reported for duty.

"And I learned about flying from that". Thus spake Lieut. Milo Clark after making an unsuccessful attempt to turn an SE5 back into the field when the motor quit.

Chaplain T. N. Harkins has been ordered to Ross Field, Arcadia, Calif., for duty.

Major George H. Peabody has been transferred to Ross Field for a course of training in Lighter-than-Air.

Flight "B", 12th Squadron, Nogales, Ariz., Sept. 17.

During the past week orders were received at this post for this Flight to make preparations to move to El Paso as soon as possible. Due, however, to an inspection held here by the Commanding General of the 8th Corps Area, moving was held up for several days. Flights A and B will consolidate at Fort Bliss, Texas, and will be stationed there on temporary duty. The squadron will move overland. Flight B will use two Dodge touring cars, two White trucks, one ambulance, one gas truck, and one kitchen trailer on the trip. Most of the heavy freight will be shipped by train, and the remaining freight will go by truck. Three enlisted men will accompany the freight shipped by train, four officers and four enlisted men will ferry Flight B's planes to El Paso, and the remaining enlisted men will go with the truck train, 1st Lieut. Harvey W. Prosser in charge. It is estimated that the trip will be made in six days. This same trip was made by this flight during April, 1920, from El Paso to Nogales by way of Aden, N.M. and Douglas, Arizona. Shotguns and ammunition will be issued to some of the men to hunt during meal hours and late in the evening, as game is very plentiful along the road.

The 12th Squadron (Obs.) has been on the Mexican Border twenty months, and during this time border patrol and forest fire patrol has been carried on very successfully. Both flights are very anxious to get to their new station.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE OCTOBER 26, 1921.

FREE BALLOON FLIGHT OVER MANILA BAY

Floating in Manila Bay for over two hours in an almost submerged basket, with a half-inflated balloon acting as a sail and dragging the basket through the water at the rate of about ten miles an hour was the exciting experience of a party of three aeronauts who attempted a free balloon flight from Corregidor Island to Manila on August 10th last.

An interesting report covering this flight has just been received from Lieutenant W. A. Gray, Commanding Officer of the 27th Balloon Company, stationed at Kindley Field, Fort Mills, P.I., who was the pilot of this balloon.

The equipment used for this flight was an old leaky Type R balloon, which had been condemned as unserviceable for observation purposes, and a basket equipped with Kapok floatation rings. The purpose of the free balloon flight was to give the observers practice both in handling and landing a Cacquot type balloon in case of an accidental breaking of the cable.

In about a ten mile breeze blowing towards Manila City, the balloon "weighed off" at 9:25 a.m., with 12 bags of ballast, the crew, in addition to Lieut. Gray, the pilot, being Warrent Officer R. E. Lassiter, aide, and Captain I. H. Edwards, 2nd Aero Squadron, passenger. When about five miles from Corregidor, the wind died down entirely and numerous clouds were encountered at an altitude of two thousand feet. Whenever a cloud would pass over the "bag" and cool the gas - in addition, the cooling effect of the water at an altitude of six hundred feet had also to be considered - the balloon would then descend rapidly, necessitating using ballast. Approximately, after five minutes of a cloud the sun would appear and the balloon would then ascend rapidly until the automatic valve would function, thus causing the "bag" to again descend to where some other clouds would be encountered, causing further descent. It seemed impossible to get and maintain an equilibrium, which was possibly due to the weather conditions, the automatic valving and the porous fabric of the balloon. In addition to this, more ballast was used than actually necessary, due to the fact that the only instrument used was an altimeter, which was at least 200 feet slow in registering.

About an hour and a half after the beginning of the flight the balloon was in the middle of Manila Bay, some eight miles north of Corregidor, and it was seen that the ballast would not hold out much longer. Preparations were therefore made for coming down in the Bay. The inside lining of the basket was ripped out, in order that when landing the water would not force it up and throw the passengers out. Meanwhile, the occupants of the balloon undressed. After two hours and fifteen minutes in the air, and with only one bag of ballast remaining, the balloon slowly descended and the basket landed in the water. The drag rope, weighing about sixty pounds, was still rolled up and tied to the basket, but as soon as the basket hit the water it was cut off altogether. No sooner was this done than the balloon began to ascend again. The valve rope was pulled, stopping the ascent when an altitude of 400 feet had been reached. Again the balloon descended and with the remaining bag of ballast an excellent landing was made. The balloon still had a large quantity of hydrogen, only the tail being in the water, and, as there appeared to be no danger of it falling and enveloping the basket, the rip panel was not pulled. The water meanwhile was within a foot of the top of the basket and just below the floatation rings, but it was apparent that the hydrogen remaining in the top of the balloon was what actually kept the basket afloat.

It was fully believed that the plight of the balloon could be easily seen from Corregidor, so that no anxiety was felt for the first forty minutes. When, however, no boat was seen leaving the island, it began to appear as though no help was to be expected from there. There were several small fishing smacks

about a quarter of a mile from the balloon, and although repeated signals were sent to them they did not respond. After about an hour and a quarter of aimless drifting, a breeze blew up, and the half-inflated balloon acting as a sail began pulling the basket through the water at the rate of about ten miles an hour. When the basket began moving, one side of it went under water, but all concern as to safety vanished, for with the wind holding out it was only a question of time before Manila would be reached. After being in the water about one hour and fifteen minutes, a boat was seen to leave Corregidor, and one hour later, or at about two o'clock, this boat picked up the balloon, basket and passengers, fifteen miles from Corregidor. It is estimated that about six miles were covered in sail boat fashion.

The results of this flight were more valuable than if Manila Bay had been crossed and land reached, as it proved that there is not any danger in a balloon of this type falling on the basket when landing in water and that, so long as any hydrogen remains in the "bag", it should not be ripped. This flight also demonstrated that when flying at this station baskets should be without an inside lining and should be equipped with floatation rings, or life preservers, and two straight bladed knives.

ASSISTANT SECRETARY OF WAR VISITS CAMP KNOX, KY.

Assistant Secretary of War Wainwright, on September 19th, inspected the 31st Balloon Company at Camp Knox, Ky. This was a tactical inspection, the balloon being in the air, and the men were inspected in their tactical sections. At the conclusion of the inspection, the Assistant Secretary went aloft with Lieutenant Farnum to look over the camp. A 20-minute trip was made, and a comprehensive study of the territory was reported.

THE SOUTH AFRICAN AIR FORCE ✓

The South African Air Force, with headquarters at the Swartkops Flying Station, Pretoria, has two hangars, six machines and six trained pilots. There are at Pretoria now eighty commandants from various parts of the Union undergoing military training, and they are taking a great interest in the air depot. They were agreeably surprised when it was explained to them that 112 aeroplanes with every sort of spares and equipment had been made a free gift to the S.A. Air Force.

In October, a committee under the Minister of Defence will select additional personnel. They have already had 1,500 applications for the ten flying officer appointments, and 10,000 applications for enlistment.

Commissions, which are for three years, and may then be renewed, are available from the ranks. The selected candidates will receive six months' training at a military establishment, six months at the air depot, six months at a flying station and six months actually learning to fly. Pilots must be between 18 and 30 years of age.

In addition to Pretoria, there will be stations at Bloemfontein and Maritzburg. It is proposed to use aircraft in cooperation with the police in the Transkei and Swaziland.

OPERATION OF FORESTRY PATROL ✓

A report from the Air Officer of the 9th Corps Area, summarizing the forest fire patrol activities for the entire season of 1921 up to September 1st, gives the number of fires discovered as 832; the number of patrols, 396; number of miles covered, 148,113; number of square miles observed, 7,230,459; flying time 561 hours and 50 minutes; and the number of planes in commission, 47. The patrol bases were located at Camp Lewis, Wash.; Eugene, Oregon; Mather Field, Mills, Calif.; Corning, Calif.; and Visalia, Calif.

Due to the rainy season having begun, patrols in the States of Oregon and Washington were discontinued on September 10th, after having completed a very successful season, despite the shortage at times of gasoline and oil, necessitating the temporary suspension of operations.

A report from the Department of Agriculture states that the entire forest area in the United States covers 463,000,000 acres, and that this region is being burned over at the rate of 10,000,000 acres yearly, reforestation requiring a minimum of 20 years.

According to a statement which recently appeared in the newspapers, in 1920 the Air Service in 2½ months' operation of the forest fire patrol, saved from destruction by fire standing timber valued in excess of \$35,000,000. or considerably more than the entire appropriation that year for the air defense of the United States.

This is a fitting testimonial to the great utility and value of the airplane in peace time pursuits - not to mention its functions in war - and a striking illustration of the important part the airplane is playing in conserving the natural resources of this country.

The excellent results obtained through the patrol by airplanes in locating forest fires has attracted wide attention and has led the Canadian Government and large timber corporations in the Dominion to establish the foundation for similar services.

ELK HUNTING BY AIRPLANE.

As time goes on one cannot escape the growing conviction that the field of usefulness in which the airplane can be utilized is practically without limit. Mr. J. S. Hunter, of the Fish and Game Commission, hit upon the airplane as the means of fulfilling his desire to ascertain the number of elk in the vicinity of Buena Vista Lake, California, and with that end in view a special airplane flight was made from Visalia, California, on September 11th last.

A plane, piloted by Lieut. G. A. McHenry, Air Service, with Mr. Hunter as passenger, took off from the Visalia Field at 6:15 A.M., when a direct flight was made to Button Willow. At an altitude of 1,000 feet, flight was made along the edge of Elk Hills towards Buena Vista Lake. A return course was then taken a few miles north, and here a herd of ten elk were located and pictures of them were taken by Mr. Hunter. The entire country from the mountains on the south to the Kern River on the north was patrolled at various altitudes. This open country was covered in a manner that assured Mr. Hunter that there were no elk there. Going east towards Bakersfield Mr. Hunter observed another herd in the trees along the Kern River, but owing to an attack of "air sickness", he did not call the attention of the pilot to this fact. He stated that owing to the heavy growth along the river it was not possible to estimate the number in this herd.

While this flight did not give an estimate of the number of elk in this section, it did show that the number here had been overestimated in the past.

AIRSHIP C2 AT ABERDEEN, MD.

Through the efforts of the Ordnance Department of the Army, an airship hangar of sufficient capacity to house a C-Type airship of approximately 108,000 cubic feet of gas capacity and having a useful lift in excess of 2,000 pounds at bombing altitudes, has been erected at Aberdeen, Md. At the present time the Airship C-2 is housed in this hangar and is successfully operating therefrom. A suitable bombing rack and suitable sights are being installed on this ship for the dropping of bombs up to 1,000 pounds in weight.

The purpose of the Ordnance Department in requesting the assignment of this ship to Aberdeen was to carry on extensive tests with bombs. Being able to hover and thereby capable of making a very high percentage of hits, the airship in this respect is superior to planes which have heretofore carried out experimental bombing with large sized bombs.

RECORD-BREAKING HYDRO-AIRPLANE FLIGHT

Climbing to a height of 11,500 feet (corrected to 12,580 feet) above Alameda, California, on October 2nd, William R. Davis, Jr., of the Allied Fliers Club, smashed the Pacific Coast altitude record for a one-man single-engined hydro-airplane. Davis also took the first test for hydro-airplane pilot license of the Aero Club of America.

The altitude record for hydro-airplanes of this class up to this time was 9,600 feet, established by Jacob Struebel in 1915, while flying a 100 h.p. Christofferson ship. Davis flew an H-4-H Standard seaplane, equipped with a 175 h.p. Hall Scott engine.

The tests were conducted by Harvey M. Pugh, president of the Allied Fliers; Reed Chambers, A.E.F. pilot; Walter E. Baird and Dr. Lloyd Jones of the University of California. Baird and Dr. Jones are members of the Aero Club of America, which issued special authorization to Pugh to conduct the tests.

THE AIRPLANE IN FUTURE WARS

"The airplane will be the most destructive force in the next war, which will be fought with all the horrible and terrible inventions that the mind of man can conceive," according to Mr. Hudson Maxim, the noted inventor, in an address he recently delivered before the Dayton, Ohio, Chamber of Commerce. Mr. Maxim declared that it will be possible to send the airplane anywhere, and there will be no force that will be able to combat it effectually; that when the next war comes the aviation forces will prove the greatest enemy of the navy, as Super-dreadnaughts and the latest inventions for naval warfare will not be able to fight this enemy in the sky. It will be necessary for the United States to have a merchant marine of the air which will equal that of any other nation and which can be easily converted into war machines. Without any such force, he contended, any country will be at the mercy of a nation which equips itself with such protection. The marine of the air is the only solution for the problem. Airplane production must be made so that ships will be perfectly safe, and decision to establish a merchant marine will mean the production of ships on a great scale both for industrial and military purposes.

COMMERCIAL AVIATION IN HAWAII

The "Star-Bulletin" of Honolulu is favorably impressed with the possibilities for the successful operation of commercial aerial transportation in Hawaii, stating that the conditions, climatic and geographical, are ideal in this group of islands for an all-the-year airplane service. Storms of great severity are extremely rare, and each island offers its haven of peaceful, protected ocean water for seaplanes which, of course, are the types of flying machines best adapted for inter-island service. It believes that the transportation of the mails, express, and passengers, should give to a commercial airplane service sufficient business to make the venture profitable and, if not at the outset, at least as soon as a period of successful operation convinced people of its practicability. Army and Navy airmen who have made many inter-island flights are virtually unanimous in the opinion that a commercial service is feasible. It is they who have done the flying, the blazing of the air trails, so to speak.

The "Star-Bulletin" is most gratified at the interest evinced by Major-General Summerall, Department Commander, in the development and promotion of aviation in the islands, and in suggesting as he did the establishment of flying fields on each of the islands in the Hawaiian group. In Hilo serious consideration is being given the proposal, and in Honolulu a site for a field has been tentatively selected.

MOVEMENT OF AIR SERVICE TROOPS

Orders have been issued relieving the 1st and 5th Squadrons, Air Service, from temporary duty at Langley Field, Va., and directing their return to Mitchel Field, Long Island, N.Y. These two squadrons present 6 officers and about 75 enlisted men.

TO HAVANA, CUBA IN NINETEEN HOURS

The airplane has reduced to 19 hours flying time the journey from New York to Havana, Cuba, a distance of about 1,521 miles, which by railroad and boat takes four days. The Aeromarine Navy HS-2 six-passenger flying boat "President Zazas", which left the Airport City of New York at 82nd Street and Hudson River on September 22nd, inaugurating the Southern season of the Aeromarine Airways, the present schedule of which calls for the departure of two boats a month for Havana from New York City, made stops at Atlantic City, Beaufort, S.C., Miami, Fla. and Key West, Fla., and arrived at Havana on September 25th. It is believed that the schedule will develop into a weekly service before the first of the year.

Last season the price of a flying boat ticket to Havana was \$750. Today the fare has been reduced to \$225 per passenger, which compares more favorably with the railroad price, which is around \$140. Under the new schedule it is possible for passengers to board an Aeromarine flying boat in New York in the morning; fly to Beaufort, S.C. the first day, transfer there the following morning to another boat flying to Miami, where another transfer is made, and from there to Key West and Havana, arriving at the latter place the afternoon of the second day.

HELIUM FOR AIRSHIPS

In the course of an interview with a correspondent of a British newspaper shortly following the recent ZR2 Airship disaster, Major P. E. Van Nostrand, of the Balloon & Airship Division, Office of the Chief of Air Service, was to have returned to America aboard the big dirigible, asserted that airships can be made safe, and that while Helium is the best gas known for airships - and he hoped the time will come when not only naval and military airships but commercial airships as well will be filled with Helium - petrol rather than hydrogen is the greater menace to the safety of airships. He is of the opinion that hydrogen can be used, and used safely, pointing to the fact that the hydrogen gas in the latter part of the ZR2 apparently did not explode, but came down intact, demonstrating that buoyant gas, if it stays in the bag, is a help rather than a danger. He added that if the ZR2 had been filled with Helium, the result of the accident would have been little more than a casual wetting for the men aboard her - provided a less explosive fuel than petrol had been in use.

At the present time, in view of the fact that the supply of Helium is very limited and difficult to obtain, the problem is to find a less volatile liquid for burning than petrol, and this, in Major Van Nostrand's opinion, is an easier proposition to obtain than Helium.

While touching on the subject of Helium, it might be well here to give a brief history of this new gas for use in airships, its present rate of production and the experimental work now being conducted therewith.

Helium is a gaseous chemical element discovered by Sir William Ramsay who, after numerous experiments, found that it refused to oxidize when sparked with oxygen. It is the lightest of absolutely inert gases, and occurs in the air in proportion of 0.000056 percent by weight, or about one volume of Helium in 250,000 volumes of air. It also occurs in many minerals, including monazite sands, in the gases of many mineral springs, and in comparatively large quantities in several of the natural gases of Canada and the United States.

Commercially pure Helium has 92.6% lift of pure Hydrogen, and being absolutely inert has no deteriorating effect upon balloon fabrics, and is safe from combustion under all conditions. It is the all-round ideal balloon gas so long sought by scientists.

Up to April, 1918, Helium had been obtained only in extremely small quantities, and for scientific purposes only - the total amount probably not exceeding 100 cubic feet, at a cost of about \$1,700 to \$2,000 per cubic foot. The most promising fields thus far discovered are located in Texas, Kansas, and Ohio. It is believed by scientists that other sources of supply will be discovered, susceptible of development for the production of Helium in balloon quantities, as the result of exploration work. At the present time such an exploration program is being actively prosecuted by the Government.

After our entry into the war three experimental plants for the production of helium from natural gas obtained from the Petrolia pool at Petrolia, Texas, were erected. Two of these, known as Plants #1 and #2, were located at Fort Worth, Texas, the gas being supplied through a pipe line from the former place, and the last plant, known as Plant No. 3, was established at Petrolia.

The cost of producing one cubic foot of Helium in a mixture of 92% purity in Plant #1, the most successful plant to date, was about 39¢, showing the extremely remarkable reduction in the price of producing Helium, especially when the fact that this was an experimental plant and not of such proportions as to give lowest cost, is taken into consideration.

After Helium of 92% purity was produced in Experimental Plant No. 1, the Navy, acting for the Army and Navy, entered into a contract with the Linde Company for the erection of a large production plant at Fort Worth. Latest figures on the cost of producing Helium in the new production plant, as estimated by the Navy Department, which is in charge of its operation, show that 94.5% Helium costs \$150.01 per 1,000 cubic feet, and 92.9% Helium as \$280.12 per 1,000 cubic feet.

Helium provides the United States with a weapon of warfare which is apparently not available to any other nation, because nearly all of the practical supplies of Helium so far discovered are contained within the borders of this country. On account of the anticipated further reduction in the cost of this product below the present figure, it would seem advisable that the Government should not relax its endeavors to further the exploration and development of this gas, for with an adequate supply of Helium the future of the airship in this country would be assured.

The average production of Helium in this country at the present time is such that, when compared with the production figures in the past, would indicate that Helium production is making encouraging progress.

One of the most important problems that will have to be solved in connection with the use of Helium in lighter-than-air craft is the question of its loss by expansion and consequent valving. Due to the excessive cost of this gas, a radical departure will have to be made in the method of handling the gas pressure than obtains at present with automatic valves in Type R balloons and airships. The Navy is preparing to conduct aerial experiments with Helium in an airship of the C Type, and the U.S. Army Air Service will do likewise upon the completion of an airship that is being designed particularly for the use of Helium.

With regard to the repurification of Helium, the Army Air Service has two plants under construction for conducting this work - one the Railroad Repurification Plant in Washington, and the other a stationary Repurification Plant at Langley Field, Hampton, Va., both of which are under the jurisdiction of the Bureau of Mines.

The Railroad Repurification Plant at Washington is now approaching completion, and consists of two cars, one utilized for producing power for the operation of the apparatus contained on the other car. This apparatus, through the process of refrigeration, absorbs the impurities (consisting principally of air) contained in the Helium. The capacity of this plant is approximately 2,000 cubic feet per hour. Being built on standard railroad cars, the plant is capable of being transported to any section of the country upon short notice. It is intended to utilize it for the repurification of Helium in use at isolated stations where it is inadvisable to locate permanent repurification plants, the impure Helium at these stations being allowed to collect for a period of six months or so, stored in cylinders and then repurified upon the annual or semi-annual visit of the Railroad Repurification Plant.

The plant at Langley Field, Va., which was designed and developed for the Army Air Service by Dr. Harvey M. Davis, Mechanical Engineer, Harvard University, has a capacity in excess of 2,000 cubic feet per hour, and the method used is the liquification of impurities from the Helium. Dr. Richard B. Moore, Chief Chemist of the Bureau of Mines, is in charge of this plant, assisted by Mr. Ferris of that Bureau, the latter being stationed at Langley Field. The plant is operated in conjunction with the hydrogen plant at this station.

It is anticipated that both the Railroad Repurification Plant and the plant at Langley Field will be ready for operation about the first of next year. The successful operation of these plants is assured, inasmuch as the laboratory designs which have been tested out have proved very successful.

PROGRESS IN ASSEMBLING THE AIRSHIP "ROMA". ✓

The Airship "Roma", recently purchased by the United States from Italy, arrived at Langley Field in excellent condition in every respect, the envelope which contains the gas coming through in exceptionally fine shape. The envelope is at present inflated with gas, and the keel, which runs along the entire length of the ship is completely assembled, as well as the greater part of the 6-power units.

It is expected that this ship will be ready for its trial flights in this country by November 1st, or shortly thereafter.

The "Roma" has a range of action of approximately 3,500 miles at 80 miles per hour. At cruising speed, a distance of 8,000 miles is estimated. Its capacity is 1,200,000 cubic feet, length 410 feet, width 82 feet, height 88.6 feet, and useful load in the neighborhood of 19 tons. It is driven by six 12-cylinder, 400 h.p. Ansaldo motors. It is contemplated substituting Liberty motors of corresponding horsepower for them at such time as they will require replacement. The ship is of a semi-rigid design, and practically no internal pressure is required to maintain its form under flight conditions.

Upon its entry in service numerous experimental projects in connection with the functioning of the Army Air Service will be carried out, including long-distance reconnaissance flights, photographic missions, coast patrol work, and the carrying of supplies for heavier-than-air units.

Under favorable conditions this ship is capable of making a non-stop flight from the Atlantic to the Pacific coast.

England.

An officer of the R.A.F., proceeding home from Mesopotamia in the ordinary course of duty, determined to make the trip in the shortest possible time. Accordingly, he flew from Baghdad over the newly-surveyed route to Egypt. He left the former place at 6 a.m. on September 15th, and made the flight across the Syrian desert to Amman, 515 miles, in 8 $\frac{3}{4}$ hours on the same day. Starting early next morning, Heliopolis, another 325 miles, was covered by 9 a.m. Continuing the flight, he reached Aboukir the same day, the mileage for that day being a total of 440. The flight had been arranged to connect with the sailing of the S.S. "Vienna" from Alexandria, and within 40 minutes of arriving at Aboukir the officer embarked for the remainder of the journey to England by steamer and rail. He arrived in London on the evening of the 21st, having been actually six days and fourteen hours on the passage, a clear saving of from ten days to a fortnight on the next most rapid means of travel.

Captain Muir, of the Surrey Flying Services, has been exceptionally busy lately. He has purchased a large number of Siddeley "Puma" engines, and has a staff of mechanics busily reconditioning them in one of the aerodrome hangars. There is quite a demand for "Puma" engines.

Captain Muir states that so far this year he has taken up over 7,000 people for joy-rides. This is in addition to inland "taxi" work and cross-Channel flights. There is evidently still a good thing to be made out of joy riding.

In order to afford R.A.F. officers facilities for advanced technical studies, arrangements have been made for a limited number of officers to attend certain courses at the principal universities in the country. These courses have been instituted mainly to enable officers to qualify themselves for technical duties in engineering, wireless, navigation, research and other branches. The courses are the following: Special course in engineering subjects at Cambridge University; post-graduate course at the Imperial College of Science and Technology ("Design and Engineering"); special course in aeronautical research, also at Imperial College; course in mathematics and kindred subjects at universities in the United Kingdom. While attending these courses officers will receive full pay and allowances of their rank, and will be required to pay all personal expenses. Those taking the mathematics course will also be called upon to pay all university and other fees, and those who take the post-graduate course are to contribute £20 towards the fee, payable to the college. An officer will not be eligible to attend a university course unless he holds a permanent commission and fulfills certain other conditions.

France.

Captain Bernard de Romonet, one of the finest pilots France ever produced, was killed through the breaking of a wing of the machine he was flying at Etampes on September 23rd. He had a highly distinguished career as a war pilot, winning the Croix de Guerre with a number of palms, and the Legion d'Honneur. After the war he continued flying as a test pilot and showed himself to be in the class of Le-Sadi Lecointe as a conductor of record-breaking airplanes. Last year he and Le-Sadi Lecointe for several weeks each in turn beat the other world's record for speed, de Romonet on a Spa and Lecointe on a Nieuport. At a flying meet held at Monaco he showed himself to be as skillful with a flying boat as with a land machine. France has had no greater aviator, and his death is a blow to the progress of the world's aviation.

Spain.

A new air line is to be opened between Spain (Seville) and Morocco (Laroche). The service will be operated by the Seville-Laroche Air Transport Company, and is to be a daily one. DH machines are to be used.

According to Mr. Piercy, a British pilot in the employ of the Bristol Company, who has been engaged in ferrying airplanes to Spain, that country is an "Eldorado" for any enterprising firm which has a few machines and is prepared to lay itself out for business. It appears that the Spanish local authorities in many of the towns and villages are so keen on flying that they are ready to pay quite large sums to a firm who will undertake to give a flying week in their particular locality, while the enthusiasm of the Spaniard for joy-riding would also mean a considerable amount over and above any sum the municipalities might give.

The Netherlands.

Dutch newspapers state that commercial aerial transport of both passengers and freight has become so popular that the lines will continue to operate this winter.

SQUADRON NEWS

Kindley Field, Fort Mills, P. I., August 20.

On the evening of August 15th the entire personnel of the 2nd Squadron, commissioned and enlisted, and their families, gathered in the Squadron Mess for a dinner given in honor of the departing members of the 1st Detachment of the 2nd Squadron. The dinner was an excellent one, and was enlivened by speeches made by the Commanding Officer and other officers and enlisted men possessing oratorical ability. After everything complimentary had been said and the "eats" disposed of, the band, which had furnished a few selections during the dinner, moved to the Recreation Room, where a regular dance was staged, which continued until the strains of "Taps" was heard, when everybody wended their way homeward, doubtlessly with the thought that the evening had been a decided success.

The Commanding Officer of the 2nd Squadron, 1st Lieut. J. P. Richter, and 1st Lieuts. J. B. Patrick and Cyrus Bettis have been ordered to report to the Department Air Officer for duty.

Forty enlisted men, assigned and attached to the Second Squadron, departed from this field on the 19th for Manila, from whence they will sail for the United States on board the U.S. Army Transport SHERMAN. The strength of the squadron will remain intact through the assignment of men, formerly unassigned, to this Squadron.

Two H.S.2 L. Flying Boats have been placed in commission during the past week by the limited number of men now working in the Engineering Department. Test flights will be made when the supply status is adjusted and favorable weather conditions arrive.

The three Basket ball teams, representing the three organizations of Kindley Field, are still playing steadily in an effort to win the Silver Loving Cup offered by the Post to the winner. Out of the fifteen games played with other organizations of this post, the Air Service has made the high consolidated percentage of 933.

Clark Field, Pampanga, P. I., August 20.

The first contingent of the old Third Squadron (Observation) 68 in number, is leaving for the States via the U.S. Army Transport SHERMAN, August 20th, by reason of having completed the two-year foreign service tour.

These men were among the first to enlist when the Third Squadron was in process of organization at Hazelhurst Field, Long Island, N.Y., early in 1919. Many of them had just returned from France. Instead of going back to civil life they elected to join an outfit bound for the far off Philippine Islands. Very few of them regret the step.

Aviation was in its infancy in the Islands when these men arrived. Most of them were at once sent to what is now Clark Field, where they found pioneer work awaiting them. Their work was to transform a bundoc into a flying field. This they did, and too much credit cannot be accorded them.

On the same boat bound for the States with the above men will go Captain Charles T. Phillips, Air Service, who organized the Squadron in 1919, and commanded it during its stay here. With the men and their old Commanding Officer go the best wishes of the commissioned and enlisted personnel remaining, who hope that in the not distant future they may again be gathered together and in retrospection live once again the old Clark Field days.

Headquarters Detachment, Fourth Group (Obs.) Paranaque Beach, Manila, P.I. Aug. 20.

A free balloon from Corregidor carrying as pilots Lieutenant Gray and Warrant Officer Latimer, with Captain Edwards as passenger, started for Manila at about 9:00 a.m. August 9th, but failed to put in their appearance at 11:00 a.m. A Headquarters plane was detailed to go in search of them and report their location if found. The plane sighted the balloon twenty minutes later about five miles south of Cavite. Seeing that the occupants were safe, the plane returned to headquarters and reported accordingly. The occupants of the balloon were returned to Corregidor by the GENERAL LAWTON, which had also been sent out in search of them.

The Weather Bureau states that some 21.4 inches of water fell during Sunday, Monday and Tuesday of the current week. The precipitation for the past week

Headquarters Detachment, Paranaque Beach, Manila, P.I., Cont'd.

amounted to very nearly 30 inches. This explains why flying in the Islands generally falls off in volume during the months of July and August.

Major Poole, M.C., Captain Phillips and Lieutenant Lee, Air Service, leave for the States on the Transport SHERMAN. Major Poole was flight surgeon at Clark Field, Captain Phillips until recently in command of the field and also of the Third Aero Squadron, and Lieutenant Lee has been stationed at Corregidor, filling several positions at that station, but chiefly that of Transportation Officer of Lindley Field.

The authorization of motor transportation to the terminus of the Manila Street Railway Company's line has helped to raise the morale of the detachment considerably and has done much towards making Paranaque Beach the ideal station of the Islands.

Carlstrom Field, Arcadia, Fla., Sept. 28.

Friday night the Cadet Recreation Room was most fittingly decorated on the occasion of the first dance given by the Cadets. The main feature in the decorative scheme was a Gnome motor suspended from the ceiling, tipped with lights and decorated with flowers, while from it crepe paper festoons reached to all parts of the room. The walls were fittingly decorated, the insignia of all the famous American Squadrons in the late World War being displayed.

At nine o'clock the dance "took off" to the strains of "Whispering", and from that moment until twelve-thirty not an idle moment was found. Throughout the evening punch and sandwiches were freely disposed of, and at eleven o'clock, during intermission, ice cream was served. The dance program was unique, being of salvaged airplane covering, many with camouflage on them. The dance was a great success, and all are looking forward to the next one. The guests of honor were Lieut. and Mrs. Welch, Chaplain and Mrs. Reynolds, and Dr. and Mrs. Shore.

Monday morning the Post Adjutant, Lieut. Pardoe Martin, returned to his desk in headquarters with the "smile that won't come off". Lieut. Martin had been on leave for twenty days, and explanations were in order. The officers of the field were already "wise" to the latest developments, and so all there was to it was "Well, congratulations, old man". Dan Cupid has scored another victory in the Air Service, and everybody was satisfied. The details are as follows: Married at Langley Field, Va., on Saturday, September 17th, by the Post Chaplain, (Lieut. R. E. Boyd) Lieut. Pardoe Martin and Miss Sadie Maude Stonebreaker of Arcadia, Fla. The wedding occurred at the home of the bride's sister, who is the wife of Capt. Harding, M.C. Captain Harding is stationed at Langley Field, and Mrs. Martin was visiting with her sister during the bombing maneuvers.

Lieut. Martin saw many of the old bunch that were formerly stationed at Carlstrom, and many wore the regrets expressed at being away from Carlstrom. Lieut. Martin had the privilege of flying over the Battleship ALABAMA which was being bombed Friday, and had a small part in the great event. Carlstrom offers the toast "Long life and much happiness" to the happy couple.

Interest this week centers around the football squad, which is rapidly rounding into shape. The hot weather has hampered the physical condition of the team to some extent, but Lieut. Vidal is hammering the plays home just the same. The prospects look pretty good for the tenth, when the team takes on Florida State at Gainesville. One thing is lacking - the ability to take the Carlstrom bunch of rooters with the team on these games away from home, thus losing that moral support which is so helpful to the game.

Mather Field, Mills, Calif., Sept. 26.

A particularly fitting and beautiful service was held at the Mather Field Service Club at 8:00 p.m. Sunday, September 18th, in memoriam of Flying Cadet Robert G. Noelp and Sergeant Thomas J. Whissiel, late of the 9th Squadron (Obs.) who were killed at Montague, California, in an airplane accident on September 4th, while flying forestry patrol.

Chaplain Thomas L. Kelley arranged the order of exercises, which opened with the hymn "Lead Kindly Light". Appropriate solos were sung by Miss Hazel Bryson and Mr. A. R. Taber, who were ably accompanied by the pianist of the little group that came out from Sacramento and who, by their kind cooperation, made the service one of dignified beauty. The Rev. R. O. Carter chose for the subject of his address "The measure of a man's morals is the measure of that man's consecration". He brought out very aptly that the soldier's allegiance to his country, his obedience to orders and faithful performance of duties meant the measure of

Mather Field, Mills, Calif., Sept. 26, Cont'd.

his manhood and, therefore, the measure of his consecration, and that these two martyrs to aviation had consecrated their lives with as great purpose as though they had died on Flanders Field.

The reading of the funeral service by Chaplain Kelley was followed by that exquisitely solemn service call "Taps" by Bugler Jonkins. The service closed with the hymn "God Be With You Till We Meet Again", sung by the entire assemblage.

Visitors at the field this week were Captain Herold and Lieutenants Norby and Pitts. They had attended the formal opening of Crissy Field on September 17th and stopped here before returning to March Field on the 21st.

Major Francis H. Poole, M.C., reported at Mather Field from Camp Stotsenburg, P. I., on the 21st. Mrs. Poole and two young sons, Bill and Jack, accompanied Major Poole, who is assigned here as Flight Surgeon.

Mather Field, Mills, Calif., Oct. 3.

The arrival of the hunting season found several officers here availing themselves of week end opportunities to go deer and duck hunting. No phenomenal luck has been encountered, but the Officers' Club has been able to serve venison and ducks brought down by the hunters and generously presented by them to appease the "game" appetites of members of the mess.

At the request of the Forestry Service, a special flight was made from the Visalia sub-station on the 24th over the Buttonwillow District to estimate the number of elk in that district.

Plans were consummated to take aerial photographs of the forest patrol routes from each station, and those patrols out of the Corning sub-base were the ones most recently photographed by Corporal Larsen, of this command, and Sergeant Klutz, who arrived from Crissy Field on September 28th. The men have been very successful in this special assignment.

Lieutenant and Mrs. Grandison Gardner are very happy in their new baby daughter, who arrived on September 27th. The young lady is as lovely as she is tiny - she only weighted $6\frac{1}{2}$ pounds, but is growing steadily. Mrs. Gardner is expected back at this field this week.

Recent orders have assigned Lieut. G. Gardner to Mather Field for duty, also Lieut. S. Carter, who stopped here en route from Eugene, Oregon. Lieut. Carter is on a three months' sick leave of absence. Both officers were formerly assigned to the 91st Squadron (Observation). Lieut. F. D. Hackett, who has been attached to this field for the past several months, will join the 91st when it goes to Crissy Field. Lieut. Gardner will relieve him as Post Engineer Officer.

With the arrival of eight planes from Eugene, Oregon, on the 25th of September, all but one of the cadets who were attached to the 91st Squadron, are back at Mather Field. Lieut. B. S. Catlin, who was recently transferred to the 91st Squadron, was in charge of the flight. Cadets Draper, Fisher, Harper, Hillman, Montieth and Morrison each piloted a ship down to this station. Lieut. Catlin and Cadet Kelly returned to Oregon pending the transfer of the 91st Squadron to Crissy Field.

Lieutenant Eugene Bayley started October 1st on a leave of absence for about a month. He will go to Los Angeles, where he is to be married the early part of this week, and then the couple will spend their honeymoon on an automobile camping tour through Oregon. Lieut. and Mrs. Bayley will live in Sacramento upon his return from leave. During his absence Lieutenant Gullet has assumed the duties of Operations Officer, and Lieut. P. L. Williams will take over the command of the 9th Squadron (Obs.) and 28th Squadron (Bomb.) temporarily.

Hdgrs. 91st Squadron (Obs.) Eugene, Oregon, Sept. 24.

In spite of the rainy weather, which has lasted nearly all week, preparation for leaving the local field go on just the same, and the squadron property is rapidly getting into shape. Thirteen chauffeurs were sent to Camp Lewis for driving motor transportation from that station to East Portland for shipment to Mather Field. The movement of "B" Flight from Camp Lewis to Eugene will be made at the same time, and upon arrival there will remain little to be done before the Squadron is ready to proceed south for the winter.

Hdqs. 91st Squadron (Obs.) Eugene, Oregon, Sept. 24. Cont'd.

Major Jacob E. Fickel, A.S., was a visitor at this field on the 23rd from Portland, Oregon. After a few practice hops at the local field he returned to Portland in his Hispano-Suiza motored Curtiss. He was brought down from Portland in the morning by Sgt. Guile.

On Saturday, Sept. 24th, Lieut. Catlin proceeded to Mather Field, Calif., with a formation of eight planes, flown by Cadets Kelly, Monteith, Hillman, Fischer, Morrison, Draper and Harper. There the planes will be stored until the arrival of the squadron, about October 5th. The formation got off in good shape, and this flight marks the end of the forestry patrol training of all the above enlisted men.

Lieut. B. S. Catlin, of Flight "B" Detachment at Camp Lewis, brought down five machines this week, piloted by Cadets Hillman and Monteith and Sergeants Guile and Rouse. Lieut. Catlin brought as a passenger Captain A. F. Doran of the 77th Field Artillery.

The activities of the 91st Squadron for the past week consisted largely of cross-country flights in connection with the contemplated move to Mather Field of the squadron about October 2nd. Captain L. H. Smith's flight, with Sergeant Westover as passenger, from San Francisco, California, to Eugene, Oregon, in three hours and fifty minutes net flying time, is believed to be a record flight over that course. The closest previous time was about five hours, made by Captain A. D. Smith sometime in 1919.

March Field, Riverside, Calif., Oct. 3.

In compliance with instructions contained in letter from The Adjutant General of the Army, dated August 30, 1921, the Air Service Pilot School has been disbanded, and the 19th Squadron (Pursuit) and the 23rd Squadron (Bombardment) have been organized, effective October 1st, for duty at Oahu, Hawaiian Department. The personnel of the Pilot School has been divided and transferred to the two new organizations. The commissioned personnel of the 19th Squadron (Pursuit) consists of Captains Frederick I. Eglin and Richard J. Kirkpatrick and 1st Lieutenants Harold H. George, Charles R. Melin, Carl B. Fry, Earle H. Tonkin, Edward H. Wood, Younger A. Pitts, Harold D. Smith, Harold A. Moore, Raymond Morrison, George W. Snow, Milo N. Clark and Oscar L. Rogers.

The commissioned personnel of the 23rd Squadron (Bombardment) consists of Captain Armin F. Herold, 1st Lieutenants Albert B. Pitts, A. B. Ballard, N. R. Laughinhouse, John V. Hart, Henry H. Raily, Charles A. Horn, Orville L. Stephens, Harold Brand, Harry F. Colliver and 2nd Lt. Gerald H. Fitzpatrick.

Nothing is yet known as to probable date of sailing of these squadrons.

1st Lieutenant Harry A. Dinger, Air Service, has been ordered for duty to the Philippines, and will sail on the November 5th transport.

It is reported that 1st Lieutenant Earle H. Tonkin is seriously considering joining the ranks of the benedicts.

Captain Evan M. Sherrill (Infantry) has been relieved from further detail in the Air Service and assigned to the 25th Infantry, Nogales, Arizona, where he will report upon expiration of his present sick leave. Captain Sherrill is rapidly recovering from the serious injuries received in a crash while under flying instruction at this field.

The following-named officers are on leave of absence from this field: Major George H. Peabody, Captain Richard J. Kirkpatrick, First Lieutenants Harold H. George, Fred B. Wieners and Carl B. Fry.

Hdqs. 91st Sqdn. (Obs.) Eugene, Oregon, Sept. 30.

This week has marked the practical wind-up of the Field Service season for this squadron. The property and equipment is now being loaded on box cars for the trip south to Mather Field, California. Monday, October 3rd, is the day set for the big push-off, when the 91st Squadron will tell all their Eugene, Oregon, friends "Good-bye", shoulder their packs or their flying clothes, and set out for "green fields and pastures new". It is a dead certainty that the Squadron never has, and probably never will, come in contact with a finer, more sociable section of the world's population than it has at this station, and the stay here this last summer will be long remembered by all members of the Squadron.

Hdqs. 91st Sqdn. (Obs.) Eugene, Oregon, Sept. 30.

Cross country flights this week were: Captain L. H. Smith to Vancouver Barracks early in the week, and to Salem, Oregon, on September 29th; Lieut. B. S. Catlin and Sergeant McMurrin to Portland on September 30th; Sergeant Eckerson and Private Root returned from Portland Monday.

The motor convoy pulled in Wednesday, Sept. 28th, 100% present at the finish, with one or two narrow escapes through the wilds of Washington, but no one hurt. This convoy was bringing motor transportation from Camp Lewis to East Portland, Ore., to be shipped by rail to Mather Field. Four truck loads of supplies and equipment were brought to Eugene, to be shipped with the property of the 91st Squadron.

Kelly Field, San Antonio, Texas, October 11.

Commencing Monday, October 3rd, members of the 3rd Group (Attack) have been cooperating with the maneuvers of the Second Division at Camp Stanley and Camp Bullis. The Second Division marched to Camp Stanley in five columns, halts being made for ten minutes each hour, with a noon halt of one hour. Eight planes from Kelly Field were furnished for liaison with Infantry, these were to report the progress and advance of the columns on the different routes followed, with Kelly Field as a base. Eight observers were furnished by the 2nd Group (Bomb.) No telephone was permitted to be used in transmitting orders, wireless being used as a means of communication throughout the maneuver. One forced landing, on account of motor trouble, was reported. These operations were performed successfully by all concerned.

The report of the 13th Squadron covering its participation in these maneuvers is along the same line as those of other participating organizations, and is as follows:

The past week has found this organization busily engaged in preparing for and conducting maneuvers with the Second Division. The 13th Squadron furnished its quota of planes and personnel starting Monday, October 3rd, for observation of the divisional march from Camp Travis to Camp Stanley. Inclement weather made observation impossible before 11:30 a.m., after which time the position of each of the five columns were reported on by coordinates. Additional planes were furnished Wednesday and Thursday, operating from the landing field at Camp Stanley, under the direction of an Air Service officer assigned to the Second Division. Reconnaissance patrols succeeded in locating the enemy advancing to attack the Second Division, the advance being so rapid that the landing field was abandoned and another field occupied several miles to the rear. Operations were continued Tuesday from the new field. Missions were conducted by photographic, Infantry Command, Infantry Contact and Artillery planes.

Photographs were made by Sergeant Rhodes, 1st Photo Section, of the troops at Camp Bullis and Camp Stanley. These photographs, which were very good, were in G #3 the day after they were taken.

Leave of absence for thirty days has been granted to Captain L. B. Jacobs, Executive Officer of the Post, effective October 1, 1921.

The following-named officers were graduated as Airplane Bombardment Pilots on July 12th: Major Blackburn Hall, 1st Lieuts. F. D. Lynch, W. T. Meyer, H. A. Craig, C. P. McDarment, F. P. Sessions and F. P. Booker.

On October 8th, the following-named Officers of Class 2 will be graduated, providing they pass the final flight test: Captains W. P. Hayes, F. P. Lafferty, E. B. Duncan and 1st Lieuts. Park Holland, T. L. Gilbert, J. A. Laird, A. S. Albro and A. Hornsby.

During the month of September 375 hours were flown by officers undergoing instruction in the Bombardment Group, with a total of 791 flights.

Lieut. Kotzebue flew two hours and forty minutes, 3 flights, and Lieut. Ratcliffe flew one hour and five minutes, during the month of September. These two officers are members of the Reserve Corps.

Kelly Field was defeated in the last game of the series for the Army Championship Pennant in a baseball game played October 7th.

The total flying time of the 3rd Group (Attack) during the month of September was 122 hours.

Lieut. J. B. Barton, Reserve Officer, made three flights, with a total flying time of 45 minutes during the month of September. Lieut. Samuel J. Cox, Reserve Officer, reported to Kelly Field for flying, and after his physical examination was approved, orders were issued by Wing Operations Officer assigning him to the 3rd Group (Attack) for flying.

Kelly Field, San Antonio, Texas, October 11, Cont'd.

On October 4th Lieut. Harbeck and Lieut. Gardner made a cross country flight to Fort Sill, Okla., in 5 hours and 55 minutes. On the 5th Lieut. Harbeck and Mechanic made a cross country trip to Fort Sill, thru Dallas, Texas, in 5 hours and 40 minutes. On the 6th, Lieut. DeShields and Lieut. Selzer made a cross country flight to Del Rio, Texas, for training purposes, and return to home airdrome in 5 hours.

Lieut.-Colonel W. E. Gillmore has successfully passed modified course in aerial bombardment for pilots and will be en route for Dayton on October 8th and then for his permanent station in the Office of the Chief of Air Service. The best wishes of Kelly Field go with Col. Gillmore.

1st Lieut. Vincent Meloy, formerly from the 8th Aero Squadron, has taken command of the Bombardment Group, which has greatly increased in efficiency. Lieut. Meloy was a former stage commander at Kelly Field, Texas, in 1917 and 1918.

Student officers of Class 3 have been receiving instruction in map sketching under Warrant Officer Howry.

Flying training during the past week was carried out as follows: Attack, 1 hour 25 minutes; Formation, 53 hours, 55 minutes; Camera Obscura, 3 hours; dual instruction, 20 minutes.

Captain W. C. Hayes, U.S.A. and Captain Manuel Arozarena, Cuban Army, made a cross country flight to Ellington Field and return, 4 hours and 20 minutes being the actual flying time, two flights. Lieut. Albro and Corporal Arnold, as Observer, made a cross country trip to Eagle Pass, Texas, total flying time 3 hours, two flights.

Planes of the 2nd Group (Bombardment) flew over Seguin Fair Grounds on October 4th, 5th and 6th; also bombing raids have been conducted by student officers, Class 2, to Beeville and Castroville. Raid reports indicate that bombing formation was slipped by enemy alert.

Bombing formation led by 1st Lieutenant Meloy working from Austin as a base successfully bombed San Antonio, passed through the alert patrol of student officers. This raid was carried on at an altitude of about 1,000 feet, succeeding in passing through the alert patrol without being seen.

Hdqs. 12th Squadron (Obs.) Fort Bliss, Tex., Oct. 1.

Flight "B" of the 12th Squadron (Observation) left Nogales, Arizona, at 4:35 a.m., September 23rd by truck train for El Paso, Texas, making the trip in five days. This Flight spent the night at the Airdrome at Douglas, Arizona, where Flight "A" was to join the train and both Flights travel together, but due to a delay in getting cars loaded at Douglas, Flight "B" continued the trip alone, Flight "A" following the next day. Both flights had a very successful trip. On the arrival of the entire Squadron the camp was soon put in good condition. Officers and enlisted men seem to like their new station much better than the ones they have just left.

The 12th Squadron is composed of seven officers and sixty enlisted men, having eight DH-4B and four Curtiss planes. This squadron has a very good record of work done on the border.

Hdqs. 12th Squadron (Obs.) Fort Bliss, Tex., October 8.

During the past week three new recruits have been received at this station, and it is thought that within six weeks this squadron will be filled to its proper strength.

Fort Bliss is forming a post Football Team, and eight men of this squadron have been trying out with the team during the past week. Three of these eight men have been selected to play in the first game of the season to be played the latter part of next week.

The 12th Squadron baseball team ended the season with a very good record, having won thirty games out of thirty-eight played.

Ross Field, Arcadia, Calif., October 6.

Plans are under way for the installation of necessary equipment for a course in primary airship training to be taken up at Ross Field. This includes the installation of a well balanced plant for instruction in gas engines. It will be patterned after the latest ideas in teaching this subject.

Captain Raymond E. O'Neill, Air Service, and Mrs. O'Neill have just returned from a 15-day leave spent in San Francisco, Calif.

A new arrival on the post is a baby girl, born to the wife of Captain Hawthorne C. Gray, Air Service.

Major Archie W. Barry of Section 24 completed his Balloon Observers' course on September 29, 1921.

Captain Hawthorne C. Gray, Air Service, has been assigned to temporary duty at Rockwell Field, San Diego, Calif., to take a course of instruction in motors.

During the past two weeks Mrs. Hawthorne C. Gray has been visited by her mother.

There were 63 flights made at this field during the past week in observation balloons, for a total time of 92 hours and 54 minutes.

M. E.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE NOVEMBER 2, 1921.

GENERAL PATRICK VISITS LANGLEY FIELD VIA AIRSHIP C-2.

Major General Mason M. Patrick, Chief of Air Service, accompanied by several other Air Service officers, experienced an interesting trip in the Airship C-2 on October 18th from Bolling Field to Langley Field, flying as they did under unfavorable weather conditions with dense clouds close to the ground through which it was necessary to pass.

The airship left its base station, Aberdeen, Md., at 5:30 a.m., the crew consisting of Lieutenants Max F. Moyer and R. S. Olmsted, pilots; Major R. M. Jones, observer, two engineers; a radio operator and two rigging sergeants; and accomplished much of the trip to Bolling Field before daybreak. At the commencement of the trip the clouds were very low, and landmarks could not be distinguished until a point in the vicinity of Baltimore was reached. The compass course estimated before starting was maintained throughout and brought the ship directly to Bolling Field without any deviation therefrom. During this stage of the trip a head wind of about 15 miles per hour was encountered. The landing at Bolling Field was made at 7:30 a.m., and General Patrick, Major Oscar Westover, Major J.A. Mars and Lieutenant Courtney Whitney were taken aboard. Major R. M. Jones and one rigging sergeant here left the airship.

The C-2 took the air again at 7:50 - its scheduled time for leaving - and started on the trip to Langley Field. Head winds estimated at from 15 to 20 miles per hour were encountered. The ground was visible during the first portion of the journey and until a point approximately 20 miles north from where the crossing of the Potomac River occurs when traveling in an air line to Langley Field, after which dense fogs were encountered, rendering it impossible to see the ground when flying at an altitude of 600 feet. To avoid the possibility of striking hills or other objects, the airship ascended higher and maintained an altitude of from 800 to 1,000 feet for the remainder of the trip. Dense clouds were rolling along the surface of the ground, and it was not until about an hour and a half of flying through the fog that the ground was visible again, except for a brief interval when the ship crossed the Potomac River. At a point in the vicinity of the Rappahannock River the fog dissipated somewhat, and thereafter the ground was visible. During the flight through the fog the wind changed to a more easterly direction and veered the ship some 8 to 10 miles off its course.

After some difficulty upon emerging from the fog, the exact position of the ship was ascertained, and the remainder of the trip was uneventful save for the loss of about 15 minutes' time due to one of the engines cutting out on account of an oil pressure line vibrating itself loose upon the right motor and shortly thereafter when both engines cut out due to the non-functioning (float valve clogged up requiring adjustment) of the sump tank into which the main gasoline tanks of the airship drain. The practicability of carrying out minor repairs upon an airship during flight was demonstrated in these two emergencies; in the instance of the oil line Sergeant Nolan was able, after cutting out the motor involved, to crawl out upon the engine gantry and thereby reach and tighten the offending, loose, oil pressure line. The line effected was that running from the oil tank to the pump. In the instance of the gasoline feed trouble, both motors involuntarily cut out for lack of gasoline supply systems.

There is a small tank of approximately five gallons capacity located in the extreme bottom of the car below the level of all three gasoline storage tanks. Gasoline flows into this tank equipped with a float check valve, which is filled by gravity from the main tanks. In the slip stream and close to the propellers upon either side of the car are located two Robinson cup type propellers which operate a pump, forcing the gasoline from the small tank above referred to up into another relatively small tank located above the level of the carburetors and midway between the motors. This is the first instance on record

of this simple and effective gasoline supply system, above described, clogging up. Hang gasoline pumps permanently installed and provided for just such emergencies were operated after it had been ascertained that the trouble lay in the non-functioning of the sump tank. In each of the two above instances when the motors cut out, the ship was found to be in almost perfect equilibrium.

At a point approaching the York River planes from Langley Field, consisting of three DH4's and one heavy bomber, met the airship, forming an escort for the remaining distance to Langley Field. The airship landed at Langley Field at 12:50 p.m.

In the afternoon, at 3:00 p.m., the airship with all passengers carried on the down trip, and in addition with Lieutenant George F. Parris aboard, took off for the return trip to Bolling Field, which was accomplished without incident, the visibility being good. A wind of about 15 miles from the southeast helped to speed up the trip very materially, and the landing at Bolling Field was made at 5:15 p.m., when General Patrick, Major Westover, Major Mars and Lieutenant Whitney disembarked, and 15 minutes later the ship took the air once more upon the last lap of the trip to Aberdeen, Md., taking on as passengers Lieutenants Wm. E. Connolly and Earle J. Carpenter. It was dusk when the ship reached the District Line, and the remainder of the trip was made in gradually increasing darkness. When passing over Edgewood Arsenal, the airship hangar at Aberdeen Proving Grounds, well provided with lights, was seen. Landing at Aberdeen was made at 6:50 p.m., without incident.

As a whole the trip was a pronounced success, and all occupants of the ship had ample opportunity to judge the characteristics of flight in a small airship under dense foggy conditions. At one time, when it was thought likely that it would be necessary to land at Langley Field in the fog, which was then rolling directly upon the ground and of sufficient density to preclude the possibility of seeing the ground from a greater altitude than 50 feet, a radio communication was obtained from Langley Field to the effect that a ceiling of 900 feet obtained at that field. This news proved somewhat of a disappointment to the crew of the airship, as they believed it would have been very interesting to have located Langley Field at the end of a four to five hours' run in such a fog and make a successful landing. Under such conditions a captive balloon at 3,000 feet altitude would definitely have located the field, as the upper limit of the fog was not over 2,000 feet, and such a balloon could have been seen at distances in excess of 20 miles. Another very effective method would have been to arrange a smudge pot at Langley Field, throwing up a great column of hot smoke, plainly visible under average conditions to altitudes of three and four thousand feet. The Italians used this last method during the war on the Austrian front very effectively.

The C-2 is a non-rigid airship, powered by two 150 h.p. Hispano I engines. Its length is 192 feet, maximum diameter 54 feet, capacity 181,000 cubic feet, and it is capable of attaining a speed of 60 miles per hour.

With the advent of the "Roma" into active Army Air Service flying, flights similar to the above under practically any weather conditions and for greatly extended distances will be perfectly feasible. Comfort, reliability and remarkably fast time for the longer distances will be assured. Frequent runs to the Pacific Coast from Langley Field, the home of the "Roma", are perfectly practicable, and such a run as General Patrick took in the C-2 from Washington to Langley Field and return will doubtless find its magnified and improved counterpart in a not distant future run from Washington to Los Angeles and return.

While at Langley Field General Patrick and Major Westover inspected the airship "Roma", which was found to be about 73% erected and fast approaching completion. General Patrick evinced great interest throughout the trip in the meteorological conditions prevailing and in the operation of the airship and its general performance. On alighting at Bolling Field he expressed himself as well pleased with the trip.

THE 1921 INTERNATIONAL BALLOON RACE ✓

A report just received on the recent James Gordon Bennett International Balloon race, which started at Brussels, Belgium, recounts the experiences of Balloon No. 10, representing the City of St. Louis, piloted by Bernard Von Hoffman and his assistant pilot, J.S. McKibben. The weather conditions, which during the week preceding the race were such as to make a flight to Russia possible, suddenly changed on the day of the race, making a flight for England, and possibly Ireland, probable. Strong surface winds prevailed on the day of

the race, and but for the shrewd foresight and remarkable organization of the Belgian Aero Club in cooperation with the military forces, a postponement of the race would have been necessary.

Promptly at four o'clock the first balloon, representing England, left the ground amidst the cheers of thousands of people lining the field. Messrs. Von Hoffman and McKibben decided to try for a wind which would carry them over the south of England and Wales across the Irish Sea and into Ireland. Leaving the ground at 6 o'clock and climbing rapidly to a height of 1500 metres, they encountered a 35-mile wind which carried them in a northwesterly direction. Passing rapidly over the battlefields of northwestern Belgium, they soon came within hearing of the roar of the ocean. At eight o'clock they passed directly over the towns of Ostende and Zeebrugge, which played such an important part in the war. A few moments later all sight of land had disappeared and only occasionally could they see the lights of a passing steamer and the flash of the lighthouses along the coast. Two hours later they reached the English coast, sailed swiftly across the mouth of the Thames River, and then drifted all night over the kaleidoscopic fields of England. At midnight the distant light of London was seen to the south.

Early morning found them drifting across the Malvern Hills of western England, and knowing that it would not be long before salt water would again be reached, they dropped down into a sheltering valley - so close to the ground that the drag rope trailed the ground - and ascertained from some natives that they were five miles northeast of Aberystwith, which lies on the southern extremity of Cardigan Bay and the Irish Sea. Cardigan Bay was reached ten minutes later, and once more they were racing out to sea. At that time they had 18 bags of ballast and were moving at the rate of 25 miles an hour in a northwesterly direction. The Irish coast being about 100 miles distant, they decided after a careful survey of weather conditions that they would reach it early in the afternoon and drift to the western boundary to a victorious conclusion of the race. At this stage, however, fortune turned against them and the wind began slowly but surely to diminish in speed. Eleven o'clock found them approaching the rugged promontory fringing the northern edge of Cardigan Bay and every effort was made to reach it, inasmuch as it was extremely doubtful whether the wind would continue long enough to permit them to reach the Irish coast. After jiggering around for 15 minutes at different altitudes for the most favorable wind, they broke through the top of the clouds about them and saw at approximately 8 miles to the southwest another balloon, which they recognized from its appearance to be the Swiss entry.

Realizing that if they landed on the promontory and the Swiss balloon made the Irish shores that they would be beaten, they decided to take a sportsman's chance in crossing the Irish Sea and making for Ireland. Their hopes were buoyed up by the fact that since their balloon was the lightest in the race by several hundreds of pounds they must have as much or more ballast than the Swiss. Accordingly, they dropped low to the water where they knew the current of air with the most northwesterly direction to be, and half an hour later overhauled the Swiss balloon which then appeared higher and heading directly to the South. Seeing that the American balloon was making better speed, the Swiss dropped into their current, and it was a neck and neck race from then on. Soon the enveloping clouds again hid the Swiss from sight, and slowly and with ever diminishing rapidity the American balloon drifted toward the west northwest.

At four o'clock in the afternoon they were within sound of the Irish Coast. They could hear the lap lap of the waves upon the shores, the shouts of men, the rumble of wagons over the roads, the barking of dogs, and numerous other sounds which denoted land. At this time they were proceeding directly north, and try as they might for a westerly wind there was none and every wind latitude tended to bear them more toward the east. The balloon was getting low, and there were but 4 sacks of sand left. Passing directly over a steamer and a lightship they knew that should they care to drop in the water they could soon be rescued, but the rules of the race were such that if they landed in the water they would be disqualified in the race, and the thought that the Swiss must be a few miles to the south decided them to fight it out to the last ounce of ballast.

Drifting slowly northward and directly off Dublin Bay, the balloon turned more easterly. Off to the east they saw two islands, but to make them was impossible due to the northern trend of the winds. From a study of their charts they knew that once these islands were passed a landing in water would be inevitable, as land lay 70 miles or more in the direction they were proceeding, and at the rate the balloon was traveling it must take at least 10 hours or more to

reach land. At 5 o'clock in the afternoon two steamers were spied and the balloon was allowed to sink slowly toward the water, and a Holmes distress light was dropped overboard. One of the ships turned towards them and for a moment they thought they would be rescued, but the ship again turned away, and soon both steamers had disappeared toward the east. Every effort was bent to stay in the air as long as possible. The drag rope, 300 feet long and weighing 100 pounds, was pulled in and cut up into small lengths to use as ballast. Soon two of the remaining three bags of ballast were gone, and the drag rope also, and it was decided to throw overboard all dispensable food, water, instruments and unnecessary clothing.

At eight o'clock all ballast was gone and they cut off all ropes on the basket which were not necessary to hold the basket to the balloon, and used same as ballast. The balloon slowly began descending into the sea when that fortune which had been so adverse now favored them with a warm sea breeze which heated the gas and checked the fall, but this was only momentary. At 9 o'clock the balloon again began a slow descent when off to the west was seen a semi-circle of black smoke and two white lights and a red. The balloonists realized that this was their last chance for safety, as they were already north of the steamship line lying between Dublin and Liverpool. As the balloon slowly sank downward the last Holmes signal light was released, and a moment later they were a few feet above the ocean. Mr. McKibben was at this time standing on the basket and the two were bracing themselves for the shock upon hitting the water. The balloon hit the water sooner than was expected and Mr. McKibben, momentarily stunned by a blow on the head by the lead ring, was thrown into the water. Released of his 160 pounds of weight, the balloon shot upward at a terrific speed. Von Hoffman did the only thing that was left - pulled the rip cord which tears a complete panel out of the upper side of the balloon. He heard the rush of escaping gas, and the split of the cloth as the under half of the balloon whipped up against the top. The balloon formed a parachute and descended into the water, no harder than if he had jumped from the top of a table.

Releasing himself from the wreckage he swam toward the boat, and half an hour later the life boat from the ship, the "Thistle" picked up both aeronauts and conveyed them to Reyshan Harbor, England. The balloon was lost, and the last its late occupants saw of it was it's floating on the water like a giant mushroom. Because of the danger from the enclosed remaining gas the steamship officials could not be prevailed upon to rescue it.

FOKKER AIRPLANES ON EUROPEAN AIR LINES

A communication received from the Netherlands Aircraft Manufacturing Company states that the maximum efficiency on the air lines of Europe is being given by the F-3 five-passenger monoplanes designed and manufactured by Anthony H.G. Fokker in Amsterdam. These are the same planes as those being shown by the Netherlands Aircraft Mfg. Co. at Curtiss Field, Mineola, Long Island.

The European record is all the more striking when it is known that the planes used carried an average of one thousand pounds of passengers, freight or mail on each trip and attained their high average of efficiency with motors of only 240 h.p. The performance of this type of plane has induced several of the most ably managed air lines to scrap their converted war planes and entirely re-fit with Fokkers.

The following summary shows that on four air lines the planes flew 166,600 miles without accident or loss of any kind, and that a total of 693 out of 725 trips were successfully completed.

	Route in Miles	Number of trips scheduled	Number of trips carried out	Miles Flown	Accidents involving injury to persons or loss of freight
Number 1	265	243	230-95%	61,000	Nil
Number 2	280	186	176-95%	50,000	Nil
Number 3	180	242	233-96½%	42,250	Nil
Number 4	270	54	54-100%	13,350	Nil

No. 1 - London-Rotterdam-Amsterdam - Period April 14 - Aug. 28.

No. 2 - Rotterdam-Amsterdam-Bremen-Hamburg - Period April 14-August 1st.

No. 3 - Danzig-Konigsberg-Memel - Period April 1 - August 1st.

No. 4 - Extended during August to Danzig-Konigsberg-Memel-Riga-Period up to Sept. 1.

CAN THE AIRPLANE BE MADE SAFE?

In the November issue of the Scientific American Mr. Harry A. Mount states that the biggest and most important problem confronting the pioneers in commercial aviation is to make flying safe and that, despite of all that has been said and done to prove the contrary fact, flying today is not safe, relatively speaking. Mr. Mount contends that the number of accidents lately have served perhaps more than anything that has yet occurred to warn the layman of the dangers of flight, the aerial sight-seeing business greatly suffering thereby.

Quoting figures recently given out by the Manufacturers Aircraft Association, covering aircraft accidents in commercial aviation in the United States for six months ending July 1, 1921, which show one death for each 464,285 miles flown, Mr. Mount asserts that this is not safe enough, and that if the railroads maintained such a casualty rate they would kill off their entire force of engineers every few months. To successfully compete with the railroads in the commercial field, the airplane must approach the degree of safety the railroad affords. Mr. Mount believes, however, that the Manufacturers' Aircraft Assn. made the worst of a bad situation, inasmuch as 200 of the 1200 aircraft in commercial operation come under the classification of "gypsy" flyers, piloting converted war machines, under whom most of the accidents have occurred.

Regarding the elimination of risk to aircraft, Mr. Mount states that while a high factor of safety is maintained by all the large airplane makers in this country -and any up-to-date standard make of plane, given proper care and inspection, may be depended upon absolutely not to fail in the air - the motor is the "sore spot" of the machine mechanically. Present-day aviation motors are wonders in reliability, but the best of them still are unreliable, the difficulty appearing to be that the high speed internal combustion engine is basically unreliable. There are a large number of rapidly moving parts, some exposed to very high temperatures, which cannot be dispensed with; and there is always the danger of failure in one of these parts which will put the motor out of commission. Two manufacturers have expressed the hope that the steam engine can be brought to a state of perfection so that it can replace the internal combustion engine on aircraft. There is said to be at least one promising experiment along this line being conducted in this country.

Of safety devices, Mr. Mount believes that only one holds promise that it will add much to the safety of air passengers, and that is the parachute. Perhaps the average man does not relish the idea of stepping off into space with a little silken bag to save his life, but as a last resort he would do it, and the chances that he will live to tell of his experience are greater by far than if he were dropped in the middle of the Atlantic from a sinking ship with a life preserver about him. He believes that accidents rarely happen because the flyer or his assistants are incompetent. The fact that many accidents happen because the pilot takes foolish chances ought rather to be attributed to defects in organization, where there is room for great improvement. The development of landing fields will, of course, be slow - just as slow as the development of commercial aviation. In all the United States there are now only 214 adequate municipal or civilian air ports, yet terminals are as necessary to aerial transportation as they are to shipping or railways. Every added flying field is an added factor of safety to commercial aviation: it reduces the chance that in an emergency a plane will have to land in a fence corner or a highway.

In the remaining portion of the article Mr. Mount deals with the need of national air laws and a registration system to eliminate the possibility of pilots flying unsafe machines, with steps now taken by the Underwriters Laboratories with regard to the issuance of insurance on aircraft, and with the benefits to be derived from a system of weather signals and instructions to flyers while in the air through wireless communication.

Despite the discouraging attitude which the author of the above article appears to assume in the first part of it with regard to the progress of commercial aviation, it is apparent that he does not consider the situation as hopeless, since he enumerates various means whereby improvements in aeronautics may be effected. It must be remembered that aviation has not yet gone beyond its infancy state, but when one pauses to consider the strides thus far made in the improvement of the airplane it can truthfully be said that we are living today in a world of progress. When the airplane was first built its limit of speed was about 40 miles per hour, and it was unsafe to fly a machine

in any but perfectly calm weather. Usually flights were made before sunrise or sunset, when there is a lull in the wind. Nowadays some airplanes travel four and five times as fast, and pilots have been known to fly through some rather severe storms. An hour in the air was considered quite a feat with the early type of plane. Today the airplane has some very remarkable records behind it, such as a non-stop flight across the Atlantic Ocean; a flight from the Pacific to the Atlantic Ocean, with three stops and a total flying time of 22 hours, 27 minutes; a flight from England to Australia; a flight from New York to Nome, Alaska, etc. And the airplane has not by any means yet reached its limit of perfection. Today many inventors are working on improvements in the plane which will not only tend to make it stronger, safer and more reliable, but which will do away with many of the difficulties now encountered in flying. The landing field problem - a big problem by the way - may be solved to such an extent that large fields will not be required in which to land planes. Most high-powered types of present-day planes require a large space for landing, due to their excessively high landing speed, and recent inventions such as the reversible propeller, automatic brakes, slotted wings, etc., may, when perfected, make it possible for planes to land in a comparatively small area. At least one present type of machine, the Messenger Airplane, designed at McCook Field and manufactured by the Sperry Aircraft Co., can land and take off from fields less than ten acres in size.

The danger of planes catching fire, and which has been responsible for quite a large percentage of fatalities amongst pilots all over the world, may be averted in the near future, as several inventors have already designed safety gasoline tanks, fireproof dope for wing fabric, and fireproof aviator clothing, and tests of same are now being conducted by certain aircraft manufacturers.

The great drawback to the development of commercial aviation in this country appears to be due, as stated by Mr. Mount, to the prevailing opinion in the minds of the public that flying is dangerous. An apt illustration of this attitude was shown in an article in the newspapers recently, when a member of the Louisiana State Legislature made a formal protest against the Governor of that State taking airplane rides and begging of him not to further risk his life in that manner. On the other hand, a commercial flyer at a recent aviation meet reported that in some parts of the country where he operated some people were very enthusiastic about flying and repeated their rides.

A review of recent performances of aerial transport companies in the United States and Europe lends encouragement to the belief that, despite the attitude of some people anent the dangers of flying, commercial aviation is making favorable progress. The American Trans Oceanic Aviation Company carried during all of its operations over 5,000 passengers and traveled 300,000 miles without an accident to passenger or pilot. In six months' operation of its lines from Key West to Havana and other West Indian points, the Aeromarine Airways carried 1,044 passengers and made 463 trips without accident to passenger or planes. The Farman Company in France, for 12 years builders of aircraft and today conducting most extensive operations in European airways, have maintained their lines over two years without an accident. A recent report from England shows that for 18 months ending last January there were some 48,000 flights made by civilian aircraft, carrying 82,000 passengers and traveling over a million miles, during which time there was one fatality for every 40,000 passengers carried.

Not so long ago one had but to pick up a newspaper to find a report of a railroad wreck somewhere, with all the gruesome details and a long list of killed and injured. The rarity of such news items today indicates the efforts railroad men have made to improve the service, with the consequent result that in the mind of the average person now boarding a train it is almost safe to say that no thought of danger enters. The same state of affairs may ultimately result in connection with aerial transportation. Automobile accidents have become too commonplace to attract general attention, and were a list of them compared with a list of airplane accidents one may have good reason to waver in his belief regarding the danger of flying.

It might be added that newspaper, which play so important a part in moulding public opinion, can aid very materially in disabusing the minds of the public as to the danger of airplane travel. Accidents of the air are usually given first page publicity, and some newspapers are prone to create a sensational article out of an airplane accident and weave a romance around the affair-

a waiting sweetheart about to be married, etc., etc. Naturally such stories can have but one effect on the mind of the average individual.

A London technical journal in an article on coming aeronautical developments concluded with the following statement: "Let aerial transport, whether by flying machines or dirigible airships, attain an equal degree of safety, economy and trustworthiness to that of the railroad and the steamship, and it will be impossible for the public to avoid accepting it as a part of its daily life."

THIRD AVIATORS ARMISTICE DINNER.

Who of us who were in the Air Service - Army, Navy, Marine Corps, French or British, will ever forget the FIRST ARMISTICE DINNER on November 11, 1918?

Some of us were in France with squadrons at the front, some were at schools in the rear, some were in England, in Italy and other points in Europe, and some of us were at schools and embarkation points here in the United States- but no matter where we were there was a dinner; and that dinner with its eats, drinks, songs and speeches will forever remain in our memories. No other Armistice Dinner can ever be the same as the old one held on November 11, 1918.

However, since that time there have been two other Armistice Dinners given by the Aero Club of America - first at the Hotel Commodore in 1919, and last year at the Hotel Astor. Will any of us who were present ever forget them? We should say not. They get better and larger every year, and this year the Third Aviators Armistice Dinner at the Hotel Pennsylvania given under the direction of the Aero Club of America will surpass all others.

This third aviators "get together" is growing in a series of "graceful leaps and bounds", as some reporter of a country newspaper once wrote describing a landing made by a high ranking Air Service officer from one of the Air Service schools in the south.

Reservations from all over the country are being received by the Armistice Dinner Committee of the Aero Club of America, and many of the old squadrons are engaging special tables. Last year the 90th, 27th and others made wonderful records in getting their old gangs together, and already this year former members of these squadrons have assured Colonel Hartney, Executive Secretary of the Aero Club of America, that their representation will be larger and better organized than ever before.

Don't forget the date.

Hotel Pennsylvania.

Bring your friends.

Wear the old uniform.

Make reservations at once for your tickets (\$10.00 per cover) to the "Dinner Committee", Aero Club of America, 11 East 38th Street, New York City.

FREE BALLOON FLIGHT

On Tuesday, October 4, 1921, a free balloon, 35,000 feet capacity, took off from Ross Field amid the shooting of motion picture cameras, and eventually made three highly successful hops. The first landing was made after a flight of 87 minutes, at Monrovia. The second lasted 79 minutes, and the balloon landed in the Big Tujunga Canyon. The third landing, after 116 minutes, was made at Newhall on the main pike to San Francisco. Captain C. P. Clark was pilot, with Captains L. F. Stone, H. E. Weeks and Lieuts. G. G. Cressey and H. G. Montgomery as passengers.

FIRST AIRSHIP ARRIVES AT MCCOOK FIELD

The Balloon and Airship Section of McCook Field received its first airship September 19th. It is a P-B type, non-rigid, manufactured by the Goodyear Tire and Rubber Co., of Akron, Ohio. It was ferried to McCook Field by Lieut. G. W. McEntire, who is stationed at Akron supervising the construction of a larger airship which will probably make a trial flight to McCook Field about the first of the year.

This small airship made an average speed of 44 miles per hour on this trip, averaging 12 miles to the gallon of gasoline, and used less than three quarts of oil.

The airship is to be used at McCook Field to test out various kinds of equipment, now under design and construction by the lighter-than-air Sections.

A recent review of the press reveals the fact that ships of this type are used by motion picture concerns for the taking of aerial scenes, and that two Los Angeles sportsmen flew a Pony Blimp from their home to Catalina Island for a few hours' fishing trip, and brought back their catch without leaving the ship.

THE COUPE DEUTSCH ✓

The London, Eng., aeronautical publication FLIGHT gives the following account of the race for the Deutsch Cup at Etampes on October 1st.

"It cannot truthfully be said that the race was a great success. Italy and Great Britain were represented by only one machine each, while France had made full use of the rules for the race by entering three machines. Thus from the start, apart from any relative merits of the machines, France had a three-to-one chance as against either of the other two countries and a three-to-two against the field. Even then, except for the troubles which beset the other two countries' representatives, the French pilots would have had a hard fight of it, as both Brack Papa's Fiat (Italian) and James's Mars I (British) proved very fast, indeed. How fast exactly one cannot say with any degree of accuracy, but sufficiently fast to prevent the Frenchmen from having a walk-over. Unfortunately, the race was robbed of much of its interest by the various mishaps which befell the competitors. It is, however, fortunate that the race, such as it was, did not contribute any more fatal accidents.

As France still had four machines entered for the race after the deMonge had been crashed, there should have been elimination trials on September 28. The Hanriot, which was to have been flown by Rost, was not, however, ready until that date, and M. Hanriot, refusing to let Rost's first test flight be also an elimination flight, withdrew the monoplane, as he considered it unfair to let a pilot fly an untried machine in a race. While admiring his standpoint and entirely agreeing with him in his decision, we must admit that the absence of the Hanriot was a disappointment, as it was fairly certain to have beaten the G.B. Nieuport biplane flown by Lasne, and there thus would have been three new machines in the race on the French side.

The first man to start was Sadi Lecoinge on one of the Nieuport-Delage "Sesquiplans". He got away about a quarter of ten in the morning and reached the turning point at la Marmogne in about nine minutes (giving a speed of nearly 207 m.p.h.). As the minutes passed and Sadi did not return, great anxiety was felt for his safety, and search parties went out in motor cars to look for him. After about twenty minutes' absence Lasne, who was one of the search party, returned with the information that Lecoinge had crashed near Toury, and was injured, although not, it was thought, fatally. Later this proved to be the case and, apart from cuts and bruises, Sadi was thought to be in no danger. It appears that his propeller burst, and he had to make a forced landing. How he escaped being killed while landing in a field at about 100 m.p.h. is a mystery. His machine was smashed, but Lecoinge, to the infinite relief of everybody is safe.

The next to start was Brack Papa on the Fiat with 700 h.p. Fiat engine. After flying for about half an hour, and covering 150 km. in 30 minutes 19 seconds (184 m.p.h.) he had to force-land owing to a leak in the petrol system. He made a safe landing near Ruau.

James on the Mars I, Napier "Lion" engine, started shortly after three p.m. He covered the first out-and-home lap in fast time, but shortly after starting on his second lap he was seen to be returning. He made a priceless landing, and it was learned that he had to give up as he noticed the fabric of the top plane was beginning to lift. It was fortunate that he discovered this in time, otherwise there might have been another bad accident owing to this cause. Quite possibly the "Titanine" dope helped materially in holding the fabric together until a landing could be made. James made the outward journey to la Marmogne (50 km.) in 11 mins. 12-1/5 secs., corresponding to a speed of 166 m.p.h., and the return trip in 10 mins. 57-2/5 secs. (171 m.p.h.) and as he was probably not going all-out until by the time he discovered the fabric lifting, it will be seen that the Mars I is capable of very good speed. We understand that it is intended to have the machine officially tested over the kilometre course, timed by the official French time-keepers. It will be interesting to see the result.

With Lecointe, Brack Papa and James out of the race, there was little interest in the rest of the proceedings. Kirsch flew the course on the Nieuport-Delage "Sesquiplan", his time for the 186 miles being 1 hour, 4 minutes, 39 seconds, or at an average speed of 173 m.p.h. Lasne on the Nieuport biplane was second, taking 1 hour, 9 minutes, 55 seconds to cover the distance. The race will presumably therefore be held in France again next year."

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England.

An order has been issued directing that the R.A.F. Airship Base at Howden, Yorks, be closed down not later than March 31st next. This order is in conformity with the policy already announced of ceasing all further activities with airships for Service purposes, owing to the necessity for the utmost economy, and making existing airships available for civil operation. The airship personnel is being transferred to other branches of the R.A.F., and a number of officers from Howden have already begun courses of instruction in order to fit themselves for new duties.

Mr. O.P. Jones, a commercial pilot, must now hold the record for number of passengers carried by one pilot. Recently he passed the 10,000 mark, and it seems improbable that any other pilot has carried as many as 10,000 passengers. Mr. Jones began his work as a "joy ride" pilot in February, 1920, and his total to October 2nd was 10,100. His Avro G.EASF has carried 8,000 passengers, which must be a record for small machines. He has visited over thirty different towns all over Great Britain, and has made return visits to some. He has given exhibitions and joy rides from all conceivable sites and in all kinds of weather.

Sweden.

Reports from Sweden indicate that it is intended to hold an Aero Show in Goteborg, Sweden, in 1923. The time tentatively fixed for the Exhibition is July 7-31. It is stated that the Society of British Aircraft Constructors and the Chambre Syndicale des Industries Aeronautiques (France) have been approached on the subject of participation in the Exhibition and have given favorable replies. It is also hoped that Italy, Germany, Czecho-Slovakia and the United States will participate.

Australia.

The first of the series of aerial mail services in Australia under control of the Commonwealth will be inaugurated on October 30th or, if subsequently fixed by the Minister of Defense, not later than November 30th. While a limit of £25,000 has been placed by the government on the total amount of any tender, tenderers are to be given the option in forwarding parcels to maintain a greater or less number of trips than is provided in the conditions-contract. Tenderers must name two guarantees to the amount of £5,000 for safety of mails and fulfillment of contract, and must specify the class of machines, number proposed to be provided, with their speed, radius, petrol consumption, carrying capacity, etc. The scale of charges for passengers and freight will be subject to the Minister's approval.

France.

It is understood that the Franco-Roumaine Air Line contemplates a regular service to Constantinople next Spring. It seems an ambitious project at present, but in five stages with stops at Strasbourg, Prague, Budapest and Bucharest it should be quite possible and could be accomplished in 24 hours. This will be an important step in the accomplishment of the air route to the East. Moreover, the country is nearly all the way excellent for flying.

It is understood that the French firm of Farman Freres have under construction the biggest "air liner" yet produced. It is said to have a span of 58 metres and to have four engines, probably Lorraine-Dietrichs, Hispanos or Renaults. Or perhaps the report that the French are to build Napiers may have some connection with this machine. The machine is said to be destined for the Cie Grands Express Aeriens for the Paris-London service.

UNUSUAL INCIDENTS IN AVIATION

Flying Boat as an Aerial Ambulance.

From Kindley Field, Fort Mills, P.I., comes a report on rapid work done in transporting a wounded man to the hospital in an H.S. 2 L. Flying Boat, which proved itself a fairly efficient aerial ambulance. On August 28th, a soldier stationed on Carabao was severely attacked by a shark while swimming. Facilities for operating on him not being available on Carabao, the Commanding Officer of the 2nd Squadron at Kindley Field, upon notification, directed Lieuts. Hine and Franklin to make the flight to Carabao. A hasty launching was made, and in less than twenty minutes actual flying time the plane returned with the injured man laid across the front and upper part of the hull. Upon reaching Kindley Field a waiting ambulance made the trip to the post hospital. In spite of the rapid transportation, however, nothing could save the mutilated man.

Mushroom Hunt by Airplane.

Going mushroom-picking by airplane is the latest idea, according to the London Evening NEWS.

Mr. A.S. Keep, chief pilot of the Westland Aircraft Company at Yeovil, likes mushrooms so much that when all the known places were found to be barren he decided to go aloft and "observe". He had almost "worn himself to a shadow" walking round the country. Mr. Keep started off in his machine and, flying at a height of 50 feet, suddenly saw a field with small white dots. He promptly landed and found himself in a veritable nursery of mushrooms. In a short time he had collected about 8 pounds, which he put in the cabin of the plane and flew home rejoicing.

Snake in an Airplane.

In previous issues of the NEWS LETTER there have appeared stories of a frog and a goat taking joy rides in an airplane. Now comes along Mr. Snake, a resident of France Field, Panama Canal Zone, who, not to be outdone by the creatures aforementioned, decided to get a taste of "high" life for a change. Unfortunately for the snake, but fortunately for the pilot, his wish was not gratified, as the following story proves:

"One of our pilots had 'snakes' the other morning. Don't misconstrue the above statement, because we don't mean that he had the 'D.T.'s'. Below is what really happened. The pilot climbed into the cockpit of his 'old bus' the other morning and began the usual preparations before calling 'switch off'. Suddenly things grew very quiet in the cockpit, then the pilot was seen to slowly emerge from same by sliding out towards the rear, muttering to himself and keeping his eyes glued on something in the cockpit. Upon clearing the cockpit he jumped to the ground and called to the crew chief who ran over to him. He was seen to whisper something in the chief's ear, whereupon the crew chief climbed upon the side of the fuselage and took a look into the cockpit just vacated by the pilot. Evidently one look was sufficient, judging by the alacrity shown in removing himself from the immediate neighborhood of that cockpit. A happy expression spread over the face of our pilot and he was heard to exclaim: 'Dog-gone it! I just knew it was real, 'cause I haven't been to town for a week'. The cause of all the worry and fright was a 'Tom Goff' snake, a very deadly tropical reptile, that had entwined himself about the pressure pump. The snake evidently entered the fuselage by way of the tail skid. The pilot is still trying to figure out what he would have done had the snake been discovered after the ship was in the air. When our pilots get to the point where they can't be sure whether they are seeing real snakes or not, we feel that we have gone the 'Philippine Frog Story' one better. We consider our 4.7 percent pretty potent anyway."

8-Year Old Girl Flies to the Yosemite.

Time was when children grew up with horses and dogs. When little eight-year old Virginia Varney, daughter of Walter T. Varney, head of the Varney Airplane Company, grows up she probably will yawn and say: "I grew up with airplanes." The youngster landed recently in Yosemite Valley by airplane, having flown the entire distance from San Francisco. The story is told by the San Francisco CALL. She is, so far as known, the first child to make

the trip from the Pacific Coast to the Yosemite Valley through the air.

Perhaps up in 1943 or thereabout they will be talking about the trip made by Virginia Varney as they now talk about crossing the plains by ox team or the first steam train or the first Atlantic to Pacific trip of an automobile.

Mrs. Varney made the trip with her daughter and Mr. Varney made the trip alongside in another ship. Only two hours and twenty minutes were required for the trip. After a vacation in the Valley the Varney family will fly back home.

Daring Leap from High Altitude.

During an aerial exhibition recently staged at Dayton, Ohio, Harry Eibe, a former balloon man, who performed at many county fairs and exhibitions, staged two spectacular parachute stunts, and despite the danger resultant during the performance escaped uninjured. The first was dropping from an airplane while it was in a tail spin. He next dropped 1,500 feet from a high altitude before he pulled the cord permitting the chute to open. During this time he turned over innumerable times.

Pony Blimp Goes On a Rampage.

The Pony Blimp at Langley Field, which is evidently the pet out at the Lighter-than-Air station, recently took a notion to act like a full grown horse and broke away from its moorings and began a very violent fit of bucking which threw Major Fisher and Lieut. Burt from the gondola, and then started on a wild race to sea, carrying Master Sergeant McNally with it. Major Fisher sustained slight injuries and was taken to the hospital at Fort Monroe. Lieut. Burt was not injured. According to the latest report the Blimp was captured out in the Bay, a short distance from Fort Monroe.

Negro Aviatrix to Tour the Country.

A recent newspaper dispatch from New York states that ten months ago Bessie Coleman, a 24-year old negro woman, left her home in Chicago, where she had been employed as a manicurist, for Europe. She returned to this country on the steamship MANCHURIA the latter part of September as a full-fledged aviatrix, said to be the first of her race. She attended an aviation school in France and plans to engage in exhibition flying in this country.

SQUADRON NEWS

Hqs. Det. 4th Group (Obs) Manila, P.I., August 27.

Three of the officers from the Seaplane Squadron on Corregidor have come to Headquarters Detachment to replace three others about to leave. Captain Eaker and 1st Lieut. Longfellow are departing on a three months' leave, at the expiration of which they will report for duty in the United States. Lieut. John Blaney, Detachment Commander, is leaving on the September transport for a five weeks' leave in China. The new officers are 1st Lieut. John B. Patrick, who will be the new Executive Officer replacing Captain Eaker; 1st Lieut. Cyrus Bettis, who will replace Lieut. Blaney as Detachment Commander; and 1st Lieut. Richter, relieving Lieutenant Longfellow.

On August 26th Captain Eaker flew the qualification test prescribed by the Air Officer for all pilots leaving the Department. Captains Keesling and Ervin, and Lieutenants Hurd, Wood and Ellicott acted as technical assistants to the Air Officer in grading the tests. The formation flight, which is a part of the test, was flown by Major Jones, Captain Eaker, taking the test, and Lieutenant Blaney.

The Detachment has just received one DH-4B complete, with armament and radio. A similar plane has been tested at Clark Field, and when delivered to the Detachment will complete the number of planes allotted to the organization by the Basic Tables.

Hqs. Det. 4th Group (Obs.) Manila, P. I., Sept. 3.

Captain Ira C. Eaker and Lieut. Newton Longfellow left on the 2nd on the Shipping Board steamer "West Caddoa" for a trip around the world. Captain Eaker, who has been acting as Assistant Air Officer in this Department, is under orders to proceed to Mineola, N.Y. for station. Lieutenant Longfellow, who was recently Transportation Officer at Clark Field and for the past month has been on duty in the office of the Air Officer, preparing plans for the temporary Air Base at Camp Nichols, as well as the permanent Air Base, is under orders to proceed to Mather Field for duty. Both these officers have obtained leaves of absence, which enables them to make the trip home by way of Europe. The Shipping Board has extended the opportunity to Army Officers to take passage aboard their ships, paying a rate of \$5.00 per day. On this trip from Manila stops are made at Southern China, Siam, India, Northern Africa, Southern Europe, Northern Europe and thence home. The trip requires about eighty or ninety days to accomplish. The Air Service in this Department will seriously miss the service of these two young officers, as they have performed most excellent service, and have shown intense industry, in addition to being most enthusiastic and capable fliers. In accordance with the policy which has been promulgated in the Philippine Department, Captain Eaker was given his qualification test just prior to his departure. Lieutenant Longfellow could not be given his qualification test because of injury sustained to his knee while playing basketball.

Paranaque Beach has been selected as the site for qualification testing of Air Service personnel in this Department. Every effort is now being made to complete the gunnery and bombing ranges, puff targets, radios and visual communication facilities, etc., which will enable every Air Service officer to actually demonstrate by test how proficient he is in the multitudinous aerial duties required of Air Officers. Under this policy of training, every Air Service Officer is held individually responsible for his own proficiency; in other words, the old gag of "passing the buck" is "finished".

Major A. H. Gilkeson has just arrived on the Transport THOMAS and has been assigned to command Clark Field.

Major and Mrs. A. P. Christie, en route to Japan, where Major Christie will act as Assistant Attache on matters pertaining to aviation, arrived on the Transport THOMAS, and have been recovering their "land legs" at the Manila Hotel. Major Christie has made several flights at Paranaque Beach in DH4's.

Sergeant Friedel arrived on the Transport THOMAS as replacement for Sergeant Dwyer, who will return to the States, his orders requiring him to report for duty at Rockwell Field, San Diego, Calif.

Hqrs. Det. 4th Group (Obs.) Manila, P. I., Sept. 3, Cont'd.

Lieutenants J. B. Patrick, J. T. Richter and Cyrus Bettis arrived at Manila for duty. Lieut. Patrick has taken over the duties of Administrative Assistant to the Air Officer, and is on duty at Headquarters in the office of the Air Officer, and living at the Army & Navy Club. Lieutenant Richter has taken over the duties as Supply Assistant to the Air Officer, and is on duty at Department Headquarters in the Office of the Air Officer, and resides at the Army & Navy Club. Lieutenant Bettis has been assigned to duty with the detachment at Paranaque Beach and will reside there. Lieutenant Blaney, who has been commanding the detachment, has requested a leave of absence, with authority to visit Japan and China. Lieutenant Blaney plans to leave on the Transport THOMAS for Japan.

Major B. Q. Jones, Air Officer, made a flying trip to Corregidor in the old N.9H which has been rendering faithful service at Paranaque Beach for some time. The pontoon, however, has been giving trouble, so the plane was left at Corregidor and instructions given to have it replaced with another N9H. The airplane equipment at the Beach is rapidly being reduced to that which is actually prescribed in the Tables of Organization. The Air Officer has issued a policy under which every attempt will be made to operate according to the peace time Organization Tables, reducing all equipment to the quantities and types, where possible, prescribed in the Equipment Tables. Naturally, the reduction of airplanes to the limit prescribed for Group Headquarters - two - makes it impossible for each officer to have his own pet airplane. Actual trial, however, is demonstrating the wisdom of this policy, in that the work required in maintaining the airplanes is being reduced to within the limitations of the personnel available, which in turn results in equipment being kept in better shape. Furthermore, the policy of the Air Officer, which requires airplanes to be flown with full equipment at all times, except for ammunition, bombs and pyrotechnics, is driving home to the Air Service personnel their lack of familiarity with equipment which they will have to operate in case of war. Lack of facilities and personnel will probably delay for some time the execution of all the changes in Air Service equipment which the Chief of Air Service has prescribed.

The detachment at Paranaque Beach is to be moved to Camp Nichols, just one-half a mile from the Beach by road, as soon as the hangars are erected. Regular quarters will be available at Camp Nichols for the enlisted and commissioned personnel.

Kindley Field, Fort Mills, P. I., August 27.

All special work at this station was completed August 23, 1921, and all organizations of this command resumed the regular operations in their various departments.

On August 23rd Major B. Q. Jones, Department Air Officer, flew from Manila to Fort Mills in Plane No. 229, for the purpose of making an inspection.

Now that all supply work at this field has been completed, all men working at the hangars are cleaning up the ships and getting them in flying condition.

The special work of the 17th Balloon Company was completed August 23d, and regular operations were resumed in various departments of this organization. The Department Air Officer inspected the organization on August 25th, no irregularities being found.

On August 27th the balloon was flown for the first time since July. Numerous ascensions were made by both the commissioned and enlisted personnel on flying status.

Kindley Field, Fort Mills, P. I., Sept. 3.

The 2nd Squadron Basketball team added another victory to its string by defeating the 20th Company, Coast Artillery Corps, at the Army Service Club, by the score of 10 to 9. It was a fast and well played game from start to finish.

Clark Field, Pampanga, P. I., Sept. 3.

On August 28th flying was resumed after quite a period of inactivity incident to the clean-up of the supply situation. Every pilot got in some hops and felt much relieved.

Clark Field, Pampanga, P. I., Sept. 3, Cont'd.

Major A. H. Gilkeson, Air Service, arrived at this station via plane from Manila on September 2nd, and will assume command of Clark Field, relieving Captain Lloyd N. Keesling, Air Service, who will temporarily fill the office of Adjutant during Lieut. Lindgrove's tour through China.

With Major Gilkeson's arrival plans are being formulated for an ambitious program of refreshed ground and flying training, extending from September 12th to October 27th. In consideration of the great length of time most officers, pilots, have been engaged on administrative work, which has prevented their securing more than required flying time, all are enthusiastically contemplating the air exercises planned, which will give a touch of old times to duty at this field. Six enlisted men have qualified in mental and physical tests for the course for observers and will, besides their special training, be given advantage of pilot's ground training. Scarcity of funds necessitated the relief of most of the men from flying status, some of them being on duty requiring constant aerial work. It is pretty hard on them, as the extra pesos help considerably here.

Lieut. Wm. R. Sweeley and Mrs. Sweeley have returned from their visit to the Southern Islands, and have many interesting tales to relate and curios to show. Lieut. Sweeley relates of having seen the interesting remains of a Moro who was worsted in an attack on a Captain who is now stationed at Pettit Barracks. The Moros, who are of the Mohammedan religion, believe that an exalted place in heaven is given them by killing a male Christian, females having no souls. The greater number of Christians killed the higher their throne in the Hereafter. This Moro, naturally desiring to cinch his position, set Zamboangaward to get his Christian, and so he came across Captain Alger who, not desiring to pay the passage to heaven of any Moro, remonstrated with seven 45-caliber slugs, all of which entered the Moro. The Captain, perceiving these availed him naught, then threw his Colt. Finally, it took a native soldier, who had viewed the onslaught, to brain the Moro with a shovel. Nothing seems to stop them when they become Jormentatos (or Christian hunters). These men would kill their own mothers for less than a nickel.

Balloon Company No. 31, Camp Knox, Ky., Oct. 7.

The officers of the garrison entertained the student officers of the Field Artillery School on September 29th at a dancing party held at the Field Artillery School Club. Jordan's Orchestra from Louisville furnished the music.

The past three weeks have been devoted to pistol practice, preliminary training being given one hour each day followed by instruction practice and record practice on the range. Eleven men out of eighteen firing qualified.

On Monday, October 3rd, Lieut. Farnum lectured on Lighter-than-Air at the Chaplains School.

On Thursday evening a reception for Brigadier General Dwight E. Aultman, the new Commanding General of Camp Knox, was held at the Central Officers Club. Dancing followed.

Balloon Company No. 21, Ft. Kamehameha, H. T. Sept. 16.

The Coast Defenses of Pearl Harbor have commenced their season target practice, starting on September 2nd with Battery Jackson, six inch, for fire analysis. Observations were rendered from Balloon Terrestrial Observatories, C-1 and BC station. Balloon sensings apparently proved their value to the Coast Artillerymen, although observations were made by spotting only.

Tracking instruments similar in design to those used in the Coast Defenses of San Francisco have been constructed with several mechanical improvements, and it is hoped to demonstrate the utility and adaptability of this type of instrument for coast defense firing in these defenses in the near future. The plotting board is now 85% complete and has several mechanical improvements looking toward greater accuracy than those boards now in use. Instead of using strings running from the re-locating stations on the board to the azimuth scales, metallic bars have been installed and joined in such a way that they may be moved simultaneously and the balloon arms locked in the desired position by one man only on each balloon arm.

The construction of Air Service buildings at this station is nearing completion, and the past two weeks have been devoted to grading the flying field,

Balloon Company No. 21, Ft. Kamehameha, H. T. Sept. 16, Cont'd.

overhauling and painting of 1021 gas cylinders and building of work rooms in hangar. Several improvements have been made in the hangar, such as the amber staining of all upper windows to reduce sun rays and heat waves. The materials for an asphalt layer over the cement floor have been received, and the same will be spread in the coming week. The new warehouse was accepted a month ago, and a system of warehousing by sections inaugurated, which will insure the War Set being on hand in excellent condition at all times. In this connection, with the exception of a few articles on outstanding requisitions for over six months, the war set of the organization is complete and in excellent condition.

The morale of the organization is especially good. All are looking forward to the day when they can move into the newly constructed quarters, which will be about October 1st. At that time it is expected to give the second company dance, the first being given on August 5th in the pavilion of the Officers' Club at this post, and pronounced by many as the most successful affair of its kind held at this post in years.

A few weeks ago the company challenged and defeated at competitive guard mounting (formal) the pick of the Coast Defenses of Pearl Harbor - the 1st Company, C.A.C. Many of the organizations of the post were present to witness the defeat of the "first" and among the "outside officers" present was the Department Air Officer, Major Curry, who appeared extremely gratified to see the "Green and Black" carry away the honors.

Mather Field, Mills, Calif., October 8.

Ten planes landed at this station on the evening of October 3rd just after sunset, bringing back Captain L. H. Smith, Lieuts. E. C. Batten, E. Kiel and W. A. Maxwell, Sergeants DeGarmo, Rouse, Andert, Eckerson and Helpman, and Cadet Kelly, who for the past several months had been on forestry patrol duty in Oregon and Washington. They were the vanguard of the 91st Squadron (Observation), the remaining troops, with Captain E. Reinartz, M.C. and Lieut. B. S. Catlin, A.S., in charge, arriving by motor and train transportation on the 4th. The 91st is scheduled to remain here for a short time only, having been permanently assigned to Crissy Field, Presidio of San Francisco, Calif.

Lieut. Liggett, former Radio Officer at Mather, who has been on detached service at Crissy Field for over a month, has been assigned to the latter station for permanent duty.

Two civilian planes came into the field on the 1st - one an Ansaldo from San Francisco with the three Morris Brothers, and the other a Standard, piloted by the two Clevenger brothers. Both ships left on the 2nd. Mather is becoming quite a hospitality center for civilian ships owned by individuals who believe aviation is the coming mode of travel and have sufficient courage to support their belief.

The final forest patrols of this season out of the sub-bases at Corning and Visalia were flown on the 7th. Lieutenants Morgan and McHenry will bring the detachments in just as soon as their equipment can be packed and shipped. Patrols from Mather were discontinued on the 8th. All flying cadets of the command who were on forest patrol duty getting their advanced training will be ready for final examinations during the months of November and December. Some of the men have not yet decided whether they will accept discharge and commission in the Reserve or revert to their former enlisted status.

Master Sergeant Joseph E. Minor, Sergeant Major of the 9th Squadron (Obs.), retired from active service in the Army on the 7th, ending a continuous record of 30 years in the military establishment. As an expression of their friendship and high regard for him, the officers and enlisted men of the 9th and 28th Squadrons presented Sergeant Minor with a 23-jewel Howard watch, appropriately engraved, and a set of pipes, gold mounted, with stems of real amber. The gifts were presented during the huge banquet which was served at 8:00 p.m. in the Squadron Mess Hall. Major B. M. Atkinson, Commanding Officer of the Field, delivered an address on "Thirty years of Service", dwelling on the high regard thirty-year men were held by all members of the military forces. Master Sergeant Albert A. Fletcher, Sergeant Minor's friend of long standing, followed with "An Appreciation", and First Lieut. Paul L. Williams, Squadron Commander, chose for his subject "Service Honest and Faithful". In attempting to reply to the speeches Sergeant Minor was almost overcome - his remarks were short, but every man of the

Mather Field, Mills, Calif., October 8, Cont'd.

command realized that "Joe" was appreciative beyond any power of expression. Sergeant Minor first enlisted at Des Moines, Iowa, June 24, 1898, and has many years' foreign service in the Philippines to his credit. During the war he held a commission as Second and then First Lieutenant; was discharged from commission in April, 1919, being ineligible for commission in the Regular Army only on account of his age. In addition to his ability in administrative work, he was a qualified pilot. He was an excellent soldier, and by his example to the younger men and his untiring efforts in behalf of his organization he did much to assist in the forming and successful operation of the 9th Squadron. Sergeant Minor's aged father recently came to California from Iowa, and they have made all arrangements to establish their home at San Diego.

Hqs. 91st Squadron (Obs.) Mather Field, Sacramento, Calif., October 8.

During the past week the 91st Squadron (Obs.) moved all equipment and personnel by air and rail, from Eugene, Oregon, to Mather Field, via Roseville, Calif. The movement was accomplished early in the week. The property and transportation was loaded on 29 flat and box cars. During the trip the guard was overpowered by an army of about 200 hoboes. They demanded free passage, and upon departure took with them what they pleased in the way of tools, etc., from the cars.

The Squadron will remain at this station only long enough to turn in excess property to the local Supply Office, and will then resume the journey to Crissy Field, San Francisco, Calif., its permanent station. The trip will be made by motor convoy of forty-three cars and trucks, comprising a train approximately $3\frac{1}{2}$ miles in length.

There has been considerable cross country flying during the past week, most of it in connection with change of station. Two formations of six ships each flew from this post to Crissy Field for the use of the 91st Squadron upon its arrival at that station.

The Squadron loses two officers this week - Lieutenants Gardner and Carter, who have been with this command since its reorganization in October, 1919.

France Field, Cristobal, Canal Zone, Sept. 30.

A very successful dance was staged last week at the Service Club, which was suitably decorated for the occasion, a very pleasing decorative effect being obtained with flags and palm branches. The recently organized France Field orchestra furnished very good music. The fact that some thirty-five gallons of punch were consumed indicates that the dance was well attended. The officers and ladies of the post were in attendance during the first half of the program. The dance was voted a huge success by all.

Lieut. Homer B. Chandler, Post Supply & Exchange Officer, is packing "the old kit bag" for a three months' leave in the States. Mrs. Chandler and son left for the States last July, and the prospect of that family reunion in the States is causing Lieut. Chandler to wear the smile that won't come off. He is a veteran France Fielder.

Several very successful shoots have been conducted with the Coast Artillery during the past week. Firing was done by a 4.7 Battery at a moving target. This is the beginning of the Coast Artillery target practice and will extend over a period of several weeks.

All attempts at cross country flying the past week were unsuccessful, due to heavy rains encountered prior to reaching destination, necessitating the return of the ships to the home field. It is expected to collect much data on landing fields and airways during the coming dry season, as that is the only time of the year that cross country flying can be done.

Carlstrom Field, Arcadia, Fla., October 4

The baseball team of Carlstrom Field has enjoyed a most popular season. There have been some ups and downs, but more of the former. The team was the best that ever represented the Field.

Carlstrom Field, Arcadia, Fla., October 4, Cont'd.

Lieut. Haddon and Sergt. J. T. Smith flew over to Daytonia the past week end and reported a very pleasant trip.

Lieut. Bivins, Corporal Sheftick and Private Gasque flew to Sanford the past week end and reported a very enjoyable trip.

Interest now centers in the football team, as the first game with Florida State next Monday draws near. The team has a fine backfield but the line needs more weight.

Flight "A" flew 86 hours and 50 minutes during the past week; Flight "B", 114 hours and 25 minutes; Headquarters Flight 79 hours and 35 minutes; total 280 hours and 45 minutes.

Prayer of a soldier: Give us this day our long delayed pay, and forgive the bugler, the mess sergeant, the Eat and Rest Department, And all those with Bars on, And lead us not into the Army again; But deliver us from all service stripes, For thine is the Army, The M.P.'s, The Q.M.C.'s, And the Air Service Corporals, For ever and ever. Amen.

Langley Field, Hampton, Va., Oct. 15.

The football smoker held at the Post Theatre Wednesday night was undoubtedly one of the greatest smokers ever staged on the Peninsula. A large crowd was present and something was doing at all times to keep them well entertained. Wrestling and boxing bouts were the main attractions, while between these Tanguay's Tantalizing Hounds of Syncopated Jazz kept the audience swaying back and forth in perfect rythm to his musical selections. The pictures of the sinking of the Alabama was the last number of the program, which was enjoyed very much by the crowd.

Major and Mrs. H. H. Van Kirk have as their guest Major Van Kirk's mother from Columbus, Ohio.

Captain and Mrs. T. S. Voss and daughters motored to Greensboro, N.C. early this week, where they will visit the parents of Captain Voss.

Lieut. Whitley has left to spend three months' leave of absence in Europe.

Major and Mrs. Canady have arrived and are quartered at No. 6 West.

Lieut. and Mrs. Guy Kirksey have returned from Tennossee, where Lieut. Kirksey and Lieut. Boyd were engaged in photographic work. Lieut. and Mrs. Kirksey leave very soon for Bolling Field, where Lieut. Kirksey has been permanently assigned.

Lieut. and Mrs. Glen Gorten have as their guest his sister, of Corning, N.Y., who is spending several weeks with them.

Mrs. Harold Rouse was hostess at the Bridge Tea given at the Club on Wednesday afternoon in compliment to Mrs. Franklyn Rouse and Miss Francis Rouse. Her guests numbered about thirty. The prize for high score went to Mrs. Walter Reed, and Mrs. E. B. Bobzien received the consolation prize.

Lieut. and Mrs. Walter Reed are now occupying quarters at 24 West.

Mrs. J. M. Woodward entertained about twenty ladies of the Post at Tea at her quarters Tuesday afternoon in honor of her mother, Mrs. L. H. Cargill, and Miss Hazel West, both of Denver, who are her guests.

Mrs. Isaiah Davies entertained with a Bridge Tea at the Officers' Club Friday afternoon for Mrs. E. L. Canady. Thirty-five ladies of the post were her guests.

Mrs. L. G. West and little son, of Houston, Texas, are guests of Lieut. and Mrs. J. M. Woodard.

Langley Field eleven swamped the strong Camp Eustis pigskin warriors at Langley Field, Saturday afternoon, by the score of 32 to 0. The game was played on a wet field, and most of the second quarter was marred on account of heavy rainfall. The Langley Field team played an excellent game and it would be unjust to pick out the individual stars, but the all-round playing of Ignico and Armour were the outstanding features of the game.

12th Squadron (Obs.) Fort Bliss, Texas, October 15.

On Tuesday, October 11th, while 1st Lieut. R. D. Knapp was ferrying a DH-4E plane from Nogales, Ariz., to El Paso, Texas, and while over one of the highest peaks southwest of El Paso, his motor suddenly died. After making a successful landing, Lieut. Knapp carefully examined the plane and found a connection on one of the gas leads had come loose, causing all the gas to leak out. A wire was sent to the Airdrome at Fort Bliss, and thirty minutes later 1st Lieuts. McKinnon and Milyard were on their way with gas and oil and new connections for the force-landed ship. Forty-five minutes after help arrived the plane was ready to take off, and the remainder of the trip to El Paso was made without incident.



The purpose of this Letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE NOVEMBER 10, 1921.

THE FRENCH ANTI-AIRCRAFT SERVICE.

The following is a translation of an article on the above subject which appeared in recent issues of "Revue De L'Aeronautique Militaire":

A temporary organization was created in 1914, but notwithstanding the efforts made, the service has always lacked the required resources and organization. The law of March, 1919, attached the Anti-Aircraft Service to the Army Air Service and authorizes, in time of peace, the following:

An Anti-Aircraft Bureau within the Air Service of the War Department; five regiments; one central establishment; one technical section; one school. The regiments have a special composition to meet the requirements of mobilization. The service must be ready to act from the moment any political tension makes its appearance and must be able to put its units in the field simultaneously with the Army and arrange for the defense of the interior.

The composition of each regiment is as follows:

- 1 Motorized group of 4 batteries of 75's.
- 1 Mobile group of 4 batteries of 75's mounted on platform carriages for all-round fire.
- 1 Mixed company comprised of 2 Searchlight companies, 1 Machine Gun Company, and 1 mixed company from the balloon and camouflage services.

The motorized group and a part of the mixed group are used, at the time of mobilization, for the formation of anti-aircraft units for field service with the Army; and the mobile group and a part of the mixed group for the formation of reserve groups for the protection of the interior.

This organization, which at first sight seems very advantageous, has presented many difficulties in the way of command for regiments and groups and for the instruction of units and reserves. The regiments, because of the covering role which they play, have been distributed along the eastern frontier and near the two large centers of Paris and Lyon. They are at present in garrison at Paris, Lyon, Sedan, Toul and Lure.

The central establishment, which is charged with administration and the greater part of repairs to materiel, is located at Chartres. The technical section, handling all research work, is located in the suburbs of Paris, and the anti-aircraft school is temporarily located at Montgaris.

The Anti-Aircraft Service of the Future.

Its future development will be in proportion to the development of the Air Service, and will be of vital importance. What will it be used against? It was almost impossible for it to reach aircraft of the 1918 epoch, and it will be still more difficult for it to reach that of the future, whether the latter fly close to the ground at high speed, or high out of range. The problem confronting the Anti-Aircraft Service is therefore a complex one, because it consists not only of perfecting its present equipment, which will soon be obsolete, but of finding weapons which will render it more efficacious in the future. The field is a wide one for investigators and inventors and we will leave the problem to them, confining ourselves at the present time to the question of perfecting present equipment.

The machine gun bullet will be ineffective against the low-flying plane of the future, because the latter will be completely armored. It will be replaced by a more powerful type of gun, or a quick-firing cannon of small calibre having a high rate of fire and a great muzzle velocity, throwing a shell which will explode on contact. The time when cannon will be powerless

against aircraft may be looked forward to, but certainly not in the near future. There will always be airplanes that will fly at average height, but they will be faster, quick in evolution and more immune from gun fire. To succeed against them, a cannon of small calibre with a high rate of fire and a great muzzle velocity is necessary. As for those flying at 6,000 to 10,000 meters, they can only be reached by powerful cannon having a very great initial velocity. To fire on these aircraft it is necessary to hear or to see them, and if the airplane is but a speck in the sky and cannot be heard, cannon are of no use. Another means of locating airplanes will have to be sought, and it seems probable that the solution may be found in radiogonometrie. It is not believed that an airplane can be made absolutely silent, but it is certain that the roar we have become accustomed to will be more and more diminished as time goes on. We will therefore have to increase the sensitiveness of our listening apparatus and the range and power of our searchlight projectors.

The above, however, deals only with the larger questions of development and does not include the development which will have to be made in projectiles, equipment, protective balloons, camouflage, etc. In 1918 the Anti-Aircraft Service was a part of the Army, and its operations were directed, even down to the smallest details, by the army commander; but the development which is bound to take place in this arm will require its complete decentralization, and in the future we will perhaps see battalions, groups or companies in the front line armed with heavy machine guns and special rapid-firing cannons, maintaining their own defense against aircraft.

The Anti-Aircraft Service was forced, in the late war, to keep in constant touch with the slightest manifestation of activity on the part of the enemy air service and it came to be a veritable information service for its own air service and the High Command. This role, notwithstanding its apparent originality, is not the least important work it has to do, and should be thoroughly understood.

The first duty of the service is to prevent surprise aerial attacks. Every aircraft which flies over the territory should be instantly located, catalogued, and its course followed, and its presence should be signalled to those, and those only, who are interested thereby. This is accomplished by a system of surveillance at the land and maritime frontiers, and which has at its disposal a net work of communications covering the whole of the national territory. This system is composed of one or several lines of parallel watch-stations, situated not more than 15 kilometers from each other, so that it would be impossible for an aircraft to cross without being seen or heard. These watch-stations should be manned by men whose powers of sight and hearing have been rendered acute by long training in such work. The posts are in communication with central anti-aircraft information bureaus, which in turn are connected with the anti-aircraft defense centers. This system of communications should not be used by any other than the anti-aircraft service, except in the battle zone, where it could be used in common with the air service, with priority for anti-aircraft information. Each post communicates to the information bureau the fact that an aircraft has passed, giving, if possible, the type of craft and the route it is following. The information Bureau then communicates this information to the appropriate defense centers.

The defense center, on which rests the responsibility for the defense of a section of the territory, takes the necessary measures, and while it is important that the commanding officer of the center avoid being surprised, it is equally important that he avoid frightening the population and the stopping of work by the sending of unnecessary alarms. For this reason, the communication system employs only the telegraph and the telephone and avoids the wireless, for the latter can be listened-in on by persons for whom the information is not intended.

The most important of these information centers in 1918 was that located in Paris. It handled the information sent by the watch stations established for the protection of the city proper, and also those working for the army in the field and the interior. The Paris defense comprised 80 watch stations in addition to the anti-aircraft artillery posts and searchlight posts. These 80 stations were distributed in concentric circles, the largest of which had a radius of 12 kilometers; they were more numerous in the north and east, as it was from these directions that attacks most frequently came. The entire installation necessitated over 6,000 kilometers of telephone lines.

At the center of the system, where the command of the system was located, the information received was immediately marked on a large wall map and the advance of the aircraft towards the capital closely followed. This information service was reinforced in the zone of the armies by the fact that all anti-aircraft posts, whether mobile or fixed, functioned as watch-stations. It also received information from the anti-aircraft posts with the armies, which were particularly well qualified to report on enemy aerial activity. This information can be furnished either immediately or daily. The immediate warnings are those furnished by the anti-aircraft service of the army to the commander of the army aviation, or directly to the aviation combat groups stationed with the army, which warnings are sent by radio. They comprise: the number of airplanes seen in the various sectors, types of planes and their apparent objective or mission. Information of this sort enables the commander of the combat groups to regulate the action of his squadrons and avoid hours of useless flight.

The daily information furnished in the form of a report every morning gives the activities of enemy planes during the preceding night, and the evening reports the activities during the day. The morning report comprises: the number of planes which have crossed the lines, the routes followed, the bombing operations carried out; the evening report gives the number of enemy planes seen at various hours of the day in the various sectors, the types of planes, the missions, and for the large reconnaissance planes, the routes followed. These reports enable the air service to formulate its plan of reprisal attacks, or that for the following day.

In addition to this information, there is other intelligence which the anti-aircraft service can furnish to the air service. The pursuit plane cruising in the air cannot sometimes see his adversary in sufficient time to get the drop on him; the artillery plane, absorbed in its mission, sometimes does not see the enemy pursuit plane until it is right on top of him; captive balloons can be surprised by an unexpected attack. The anti-aircraft service, however, acting as observer, can see them all and warn his own aircraft in time, for the minute they perceive the craft, even though it be out of range they can send shells in its direction and thus signal its presence. They can also guide friendly squadrons as they take the air by sending a stream of shells in the direction taken by the enemy planes, or by signals from the ground.

The detailed accounts rendered by this service are therefore of great importance to the command, for it enables it to predict the possible intentions of the enemy. Reports covering particular army sectors can be sent to the commander of each army in the field, and reports covering the whole of the front can be sent to the General Headquarters.

In June, 1918, after the last reorganization of the anti-aircraft service, the idea was conceived of making a graphic chart from these reports, having as abscissas the line of the front drawn to scale, and as ordinates the number of planes seen per kilometer of front. Two curves were thus shown, one for the aerial activity of the day alongside of the positive ordinates, the other for the night activities alongside of the negative ordinates.

The study of such a graphic chart can give an interesting view of the enemy's aerial activity on the front, but a study of the chart for several consecutive days will show if the enemy aerial concentrations have a definite object or not, and will give a possible indication of his intentions. Such information, however like all others that come to the command, is subject to interpretation, as camouflage in operations must be taken into account; it is "negative information" in every sense of the word, but it is very often as valuable as positive information, and it is the duty of the officers charged with their analysis to properly interpret them.

ENGINEERING SCHOOL, McCOOK FIELD, DAYTON, OHIO.

At the present time the Engineering School at McCook Field is busily engaged in the study of shop machine work. Recently a tour of inspection was taken of the National Cash Register works, and this plan will be continued throughout the course of study so that the student might get first hand data as to practical methods of production and machine shop routine.

There are 16 officers now enrolled at the school, as follows: Majors A. H. Hobley, Follett Bradley, George E. Lovell, Jr., Henry L. Watson, Howard C. Davidson, Captains Harvey W. Cook, Henry Pascale, Robert L. Walsh, Lieutenants Burton F. Lewis, Oscar Monthan, Carlyle H. Ridenour, Robert S. Worthington, E. A. Palmer, Walter E. Richards, Harold R. Harris and Richard E. Thompson.

RELIABILITY OF AERO ENGINES

The London FINANCIAL NEWS, commenting upon the astounding mileage achieved by airplanes making daily flights between London and Paris, states that the most successful machines operating between these two cities have been the DH-18's which, fitted with a single 450 h.p. Napier aero engine, have a passenger carrying capacity of eight and a total loading capacity of 18,000 lbs. These Napier engines run the remarkable distance of 10,000 miles before they are taken down for examination, not because it is necessary but purely as a precautionary measure as a careful car owner will have his engine taken down after a similar mileage. After examination these engines are reassembled and put into service again. Some of the Napier engines on the London to Paris aero mail have actually covered a distance of 25,000 miles and are still making the daily journey.

SPEEDY MONOPLANES ✓

The Nieuport Monoplane was a plane to conjure with in the early days, and its reputation for speed has outlived that of many of its pioneer rivals. The latest model (Nieuport-Delage) just put up a new record, being flown at 206 miles per hour with a 300 h.p. Hispano-Suiza motor. This new model must, however, still be called a biplane, but the lower plane is so small as to be quite insignificant. It consists of a very reduced surface, one metre square, affixed between the two landing wheels. The upper plane has a span of 8 metres and a breadth of 1 metre and 50 c, the fuselage measures 6 metres, 50 c., and the whole machine when ready for flight weighs 950 kilogrammes.

The latest type of monoplane in England, the Handalula, is a radical departure from current practice, the wing being shaped like that of a bird. This machine, which is now simply called "Alula", was flown by Commander Kenworthy at Northolt Airdrome and attained a speed of 187 miles an hour. It reached a height of 3,000 feet on almost its first flight. This remarkable performance was carried out with only a 300 h.p. Hispano-Suiza engine, but with a larger machine of modified design and engined by a 1,000 h.p. Napier "Cub", a much greater rate of speed is expected. The Alula wing is a specially high lift wing, said to be very efficient and designed by Mr. Holle, who has been studying bird flight and the subject of high lift wings for 20 years. A London paper, touching on the remarkable speed performances of the above planes, states: "Now that the problem of using larger engines in monoplanes is well nigh solved by mounting them in a fuselage below the wings instead of on top, we may expect that the speed and climbing records will fall like a shower of stars for a while, after which there will be a pause to consider how the designs can be transformed into a little more airplane and less engine."

SUBSIDIES FOR AVIATION BY EUROPEAN GOVERNMENTS.

France and Belgium grant varying sums towards payment of pilots, cost of gas and oil, etc. Germany gives a premium on the number of kilometers flown. England pays a subsidy which, for 1922, is placed at £200,000, which subsidy, it is stated, is for services from London to Paris, to Brussels and also to Amsterdam, the British competing with a Dutch company for the service between Amsterdam and London.

J J J HIGH INTENSITY BEACON ERECTED AT STATEN ISLAND.

The Sperry Gyroscope Company high intensity vertical beacon at Tompkinsville, Staten Island, about 100 feet in from the shore and 1,000 feet eastwardly from the great Municipal Ferry Docks connecting with South Ferry, Manhattan, is now ready. The light will be vertical over this spot, gradually waving between ten and fifteen degrees each side of the vertical, making four beats a minute. The Lighthouse Commission is issuing a circular requesting observation on this beacon. Pilots of the U.S. Air Service are requested to make observation at the first opportunity and report to the Chief of Air Service as to the observation possible under the various weather conditions existing over Staten Island.

GENERAL SUMMERALL COMMENDS AIR SERVICE.

During a recent inspection by the new Commanding General of the Hawaiian Department, Major-General C. P. Summerall, of the Air Service troops at Luke Field, H.T., an aerial demonstration of attack raiding, camera obscura training, acrobatics, two way radio, radio phone, and Fokker stunting was given, which resulted in the following letter of commendation from him to the C.O., Luke Field:

"1. I desire to communicate to you and through you to the officers and soldiers of your command an expression of my satisfaction with the efficiency in every department as evidenced during my inspection yesterday and of my commendation of the personnel in all grades whose loyalty and devotion to duty have produced such pleasing results.

2. The exhibition in the functioning of the Air Service in its different tactical missions was unsurpassed by anything that I have seen. The organization and the functioning of the different departments for the maintenance and operation of the command inspire confidence in the methods pursued for safety and efficiency. I especially wish to commend the experts and the officers in charge of the different sections for their resourcefulness in developing capacity and securing continuity where special training is required.

3. While I might commend each officer by name for his particular achievements, I wish especially to express my appreciation of the demonstration given by Lieut. Miller while flying as an escort during my journey to and from the Island. I wish also to commend the work that is being done by Lieut. Miller in the shops and of Captain Oldys who has demonstrated unusual efficiency in his capacity as Operations Officer."

NEW COMMERCIAL AIRPLANE DESIGNED IN EUROPE.

A recent issue of AUTOMATIVE INDUSTRIES describes a new commercial airplane designed by the Nieuport Company which is equipped with a British Sunbeam "Matabele" 420-h.p. engine. The author of the article, Mr. John J. Ide, states that the reason for choosing a British engine is not known, unless it be that there is no French engine of the required power in production. There are a number of points in the design of the above airplane (Model 30-T) reminiscent of the earlier models of the firm. Among these are the ailerons on the lower wing only (undoubtedly the most efficient position when flying very low), the landing gear, and the method of engine cooling by twin Lamblin radiators. New features include the rearward stagger of the wings and the rectangular section fuselage containing a cabin for five passengers and a pilot's cockpit forward. The cabin is very comfortable and has good visibility, thanks to its eight windows.

The engine is of the 12-cylinder V type, developing 420 h.p. at 2,000 r.p.m. of the crankshaft and 1225 r.p.m. of the 4-bladed propeller. The cylinder dimensions are 4.8-in. bore and 6.3-in. stroke, giving a volume of 1368.7 cu.in. The weight of the engine with water but without fuel or oil is 1091 lb. The engine has two Claudel carburetors, the air being obtained by a scoop on each side of the fuselage.

The rod attached to the two outboard struts on the starboard side was used to carry the Pitot tube for indicating speed during the trials. Normally, of course, the speed is registered by means of the twin tubes on top of the upper plane amidships. Originally all control surfaces were balanced. After preliminary trials, however, the balanced portions of the ailerons were cut off.

The characteristics of the Nieuport 30-T are as follows: Span (upper wing) 50.8 feet; Span (lower wing) 47.5 ft.; Gap 8.5 ft.; Chord, 8.5 ft.; wing area (including ailerons) 700 sq. feet; aileron area 60.8 sq. ft.; Stabilizer area, 64.6 sq. ft.; Elevator area, 36.6 sq. ft.; Fin area, 10.8 sq. ft.; Rudder area, 15.1 sq. ft.; Weight (empty) 3300 lbs.; Useful load, 1980 lbs. (including 550 lbs. of fuel and oil); total weight, 5280 lbs.; Speed 107 m.p.h.; endurance, 5 hours.

The propeller used is of the four-blade type and is geared down to run at about five-eighths engine speed. The cowling which covers the engine has a characteristically French appearance. Carrying the exhaust pipe upward to about the level of the upper wing tends to muffle the noise of the exhaust and renders it less annoying to the passengers. The Lamblin radiators referred to above are torpedo shaped objects below the fuselage.

EXHIBITION OF ARMORED AIRPLANE AT BOLLING FIELD.

The recent exhibition at Bolling Field of an armored airplane built by the J.L. Aircraft Corporation of New York City was a most interesting one, inasmuch as this machine marks one of the very first all-metal airplanes entirely constructed in this country. While the outward appearance of the airplane is nearly identical with that of the J.L. 6 exhibited a year ago, numbers of which were purchased by various government agencies, the construction of the new machine is considerably different.

The plane, known as the "J.L. 12 Attack Plane", is a type in advance of the latest foreign all-metal planes. It is 32 feet long, with a wing spread of 49 feet, and carries 130 gallons of gasoline. It is equipped with a 12-cylinder 400 h.p. Liberty engine, and has a newly designed internal metal bracing system, employing considerably more steel than that in the J.L. 6, which employed mostly duralumin. The duralumin sheathing and wing coverings of the latest model are more than twice as thick as that used on the J.L. 6, and the duralumin itself, which has been developed and produced entirely in the United States, is said to be far superior to that produced in any other country.

All vulnerable parts of the plane and the crew are protected by 3/16" armor plate. The armament consists of 30 Thompson .45 calibre machine guns, so arranged as to fire downward at a slight angle to the vertical. Two machine guns are flexibly mounted so as to be used independently by the pilot for firing either upward, forward or to the side. The machine guns arranged to fire downward are so controlled that their action is begun and controlled by three levers, one firing half the battery, another the other half and the third, or master lever, which puts all of the 28 guns in action with a single motion.

The machine is designed as a ground straffer. It was flown from Bolling Field over the Potomac River near the Army War College, and as a demonstration all of the guns fired into the river. The demonstration was apparently very successful. A speed of 140 miles per hour is claimed for this plane, with greatly improved climbing and maneuvering ability. When manned by pilot and gunner and equipped with 3,000 rounds of ammunition and fuel for 500 miles of flight, it weighs 5,000 pounds.

FLIGHT AROUND THE WORLD.

Looking for more worlds to conquer, Sir Ross Smith, famous for his flight from England to Australia, plans for a flight around the globe in a Vickers "Amphibian" airplane. Sir Keith Smith, younger brother of Sir Ross Smith, who with Sergeant Bennett were passengers on the Australian flight, stated in a recent interview that the most ticklish part of the new venture "will be across the Atlantic, but we are taking every possible precaution to insure the success of the undertaking. If conditions are favorable and we are in good health, we mean to fulfill our mission. We have been working on the details of the journey for the past eighteen months, and I have been over most of the ground studying the conditions which we shall have to face. The route we shall take depends largely on the trade winds. We should like to get across the Atlantic at the outset, as it would be a very big strain at the end of such a strenuous flight. We are sure to come up against some pretty bad weather, but it will not be worse than that experienced in our flight to Australia."

PHOTOGRAPHING THE WHITE MOUNTAINS

One of the latest experiments conducted by the Air Service Engineering Division at McCook Field, Dayton, Ohio, is the photographic work being done with a view of presenting on a map the topography of the country photographed. The experiment was conducted in the White Mountains, and included an area 500 miles square. Information thus obtained is to be used by the U.S. Forestry Service. The expedition from McCook Field was in charge of Captain A.W. Stevens, and the equipment included a special DH4 plane equipped for photographic work, with two topographical cameras designed especially for mapping, and two Fairchild aerial cameras. The experiments occupied a period of six weeks, and practically all pictures were made at an altitude of 18,000 feet.

AVIATION DAY AT MINEOLA

Aviation Day at Mineola, L.I., New York on Sunday, October 16th, brought forth a demonstration of a great variety of airplanes, about thirty in all, of various types and sizes, some of which had been flown to the field from distant localities. The purpose of staging this event was to afford an opportunity to the public to study the latest types of airplanes, through exhibition of aviation equipment and demonstration flights. The Curtiss Airplane and Motor Corporation furnished the largest exhibit, with three Orioles, three JN's and the historic pusher type biplane on which Glenn H. Curtiss in 1911 won the race for the Gordon Bennett trophy by attaining a speed of 47 m.p.h. This old plane looked exactly as it did ten years ago, the only change there being the installation of a 100 h.p. Curtiss XX engine. Pilot Bert Acosta took it up and raced over the field at a speed in the neighborhood of 20 miles per hour, and seemed to be enjoying the experience. Two J.L. all-metal monoplanes and one Fokker, powered with 185 h.p. engines, and all making well over 100 m.p.h. carrying six passengers, besides the pilot, created considerable interest, as did the Loening Model 23 flying yacht.

One of the most interesting machines shown was the Farman "Sport" two-seater tractor biplane. This ship, which is fitted with the 60 h.p. Le Rhone engine, put up a remarkable performance, when the pilot, Captain D. H. Robertson took off time after time after a run of some 40 or 50 ft. and pointed her nose up to an angle of 45 deg., and continued climbing in this position straight as an arrow. The pilot also demonstrated the very low speed the machine is capable of, when he brought her to what looked as the stalling angle, and the ship, having lost nearly all her relative speed (not to be confused with air speed), simply started settling in a manner which reminded one of a person walking down a flight of stairs. This was a very valuable demonstration of the low speed at which some airplanes are capable of landing, a feature which has an important bearing on the safety of air transport. It is obvious that an airplane which can land at 25 or 30 m.p.h. and take off after a run of 10 or 15 yds., is ideal for cross country flights for, as Captain Robertson remarked, it could be "sat" down upon a tennis court if the need arose.

Another highly significant demonstration of commercial flying was furnished by the Lawrence Sperry Aircraft Corp. This firm demonstrated its high-lift monoplane wing mounted on the fuselage of a Canuck biplane fitted with the 90 h.p. Curtiss OX-5 engine. To what extent the Sperry high-lift wing improved the carrying capacity of this machine, which is a two-seater when fitted with biplane wings, was shown when Lawrence Sperry took the ship off with four passengers after a run of 300 yds. The useful load in this case was 1000 lb., and the weight of the machine empty 1100 lb. The climb, as officially recorded by an observer of the Aero Club of America was 1000 ft. in 6 min., 1500 ft. in 9.1 min., 2000 ft. in 11.5 min., and 2500 ft. in 15 min. The speed, as measured over a 2-mile course, was 62 m.p.h. Considering the low horsepower used, the performance strikingly illustrates the commercial advantages of the Sperry high-lift wing.

The Lawrence Sperry Aircraft Corp. also exhibited a Messenger type airplane, built to the designs of the Engineering Division of the Air Service, and intended for quick communication work, also an Avro two-seater.

The E.M. Laird Co. of Wichita, Kans., showed great enterprise in sending one of their Laird "Swallows" to the Aero Club meet. The three passenger OX-5 engined ship, piloted by Buck Weaver, chief pilot of the firm, left Wichita on Oct. 12 at 7.10 a.m., making its first stop at Kansas City, where an air mechanic, W.H. Burns, was picked up and carried as far as Chicago.

Ten hours was the actual flying time of the Laird Swallow from Chicago to New York, 72 gallons of gas being used between these points. The oil consumption for the entire flight from Wichita to New York was only 2 quarts.

By far the smallest airplane present on the field and in the air was the Mummert biplane fitted with a 30 h.p. Lawrence 2-cylinder horizontal engine. This little highly streamlined single-seater was a revelation to many visitors in showing how small an airplane can be built to fly.

Two S.V.A. biplanes and two DH-M airplanes of the Air Mail Service heightened interest in the meeting through their evolutions, and three Curtiss Orioles added a military touch to it by doing formation flying. The military element was further emphasized by the arrival from Quantico, Va., of a Marine Corps DH-4B,

with Lieut. K. B. Collings, U.S.M.C., pilot, and Lieutenant Hale, observer, and of the Air Unit of the Maryland National Guard, under Major Jones. This Unit, which was made up of three Curtiss JN's came from Baltimore, Md., under orders of Milton A. Reckord, Adjutant General of the Maryland National Guard.

While the various airplanes were busy demonstrating their special features or carrying passengers, a parachute competition took place over the field for the shortest distance between the landing point and a marker. This competition was won by Sergt. Joe Develin, A.S., with 43 yd., Sergt. F. Meeks being second with 130 yd., and Major Schauffler third with 175 yd.

The Wright Aeronautical Corp. exhibited in one of the hangars two of their well known engines, of the 180 h.p. and 300 h.p. models, respectively, while in another hangar the Sperry Aircraft Corp. had on exhibition a large assortment of instruments.

At the close of the meeting a 'dansen' held in the field club house of the Aero Club of America, attracted a large and distinguished gathering. - "Aviation".

CHANGE IN LOCATION OF AVIATORS ARMISTICE DINNER.

A telegram received from the Aero Club of America announces a change of plans in connection with the Aviators' Armistice Dinner scheduled for November 11th. The dinner has been amalgamated with another armistice dinner and will take place at the Commodore Hotel instead of the Pennsylvania Hotel.

SQUADRON NEWS

Kelly Field, San Antonio, Texas, October 15.

Four XBIA airplanes have been delivered to the 13th Squadron, and a number of pilots have flown the new ships and are enthusiastic over their speed and climbing ability. These planes are equipped with 300 h.p. Wright motors and Hamilton propellers, and show speed and climbing ability in excess of the D.H. In addition to the two fixed guns for the pilot and twin Lewis guns for the observer, there is a single Lewis gun arranged to shoot through an opening in the bottom of the fuselage. Improved signal and landing lights are provided, and current for operation is furnished by a separate generator. Instruments include banking indicator and inclinometer, which operate very successfully in cloud flying. Night flights have been made, and it is hoped that the restrictions on cross-country flights for this type of plane will be lifted so that its performance on long trips may be determined.

The flying training of the 3rd student class started this week. By Thursday the majority of the students were advanced from dual instruction to solo. A new solo field has been established on the south central part of the flying field, the grass in this section having been closely mowed, making it an excellent place for landings.

On the afternoon of October 14th a serious accident was narrowly averted. Captain Johnson, in taking off from the solo field, failed to see a pile of hay directly in front of him, and as the ship left the ground the pile of hay was struck by the landing gear. The force of the impact sheared the landing gear from the plane, the fuselage striking the ground about thirty yards away, directly against a small Mexican wagon. The wagon was demolished, but it served to break the force of the fall of the wrecked plane. The motor was torn loose from its bed and thrown to the right of the plane. Fortunately no one was hurt.

Cross country flying during the week was as follows: Lieutenant Laird flew to Laredo, Texas, and return in 175 minutes; Lieut. Selzer and Sergeant J. W. Fowler flew to Del Rio and return in 2 hours and 55 minutes. Lieut. Myers and Sergeant Groves flew to El Paso, Texas, but just before reaching Sanderson, Texas, a forced landing had to be made, resulting in the landing gear being smashed and the fuselage slightly damaged. No injuries to either pilot or observer were reported.

Flying activities of the Bombardment Group during the past week were as follows: Cross country, 2 hours, 55 minutes; test and practice flights, 29 hours, 20 minutes; dual control flights, 54 hours, 50 minutes; solo flights, 18 hours, 10 minutes; dual instruction, 15 hours, 45 minutes.

The post football team has been training hard, with the result that its development has been very rapid. The schedule of games to be played will soon be announced.

Chaplain H. R. Westcott, Jr., has been assigned to duty at Kelly Field, relieving Chaplain Swanson, who is slated for duty in the Philippines.

Lieut. "Pop" Myers of the 13th Squadron, veteran of many air battles on the border, was the victim of a forced landing near Lozier, Texas, while piloting a DH4B on a cross country flight. The plane was slightly damaged.

The 90th Squadron has a visitor in the person of Lieut. "Chick" Gardener, now at the Communications School, Post Field, but formerly of Flight "B" of this squadron. Lieut. Gardener was the guest of Lieut. Harbeck, the commanding officer.

Lieut. Moore has secured quarters on the field, and Kelly Field thereby gains another charming hostess in the person of Mrs. Moore.

The men in the various squadrons have been busy putting on new roofs on barracks and making other repairs in preparation for the coming winter.

Hqrs. Fifth Group (Observation) Luke Field, H.T., Sept. 26.

A successful artillery observation mission was flown Wednesday with one of the batteries of the Coast Defenses of Pearl Harbor by the 6th Squadron, during which a pyramidal target in tow behind the C.A.C. tug was destroyed after six rounds. Range only was desired by the Battery Commander from the airplane and owing to the efficient relay on the part of the Group Communications Officer,

Hqrs. Fifth Group (Observation) Luke Field, H.T., Sept. 26, Cont'd.

sensings were submitted to the Battery in advance of reports from the plotting room of the C.A.C. base line. Airplane sensings checked accurately with C.A.C. terrestrial plotting, but were used by the Battery Commander as a check against the latter. Aside from the training for observers in spotting derived from these missions, their only value lies in the confidence gained by the Battery Commanders in the ability of aerial observers to conduct a reglage quickly and accurately over a dependable communications relay. It was difficult to persuade the Coast Artillery Corps to assume war conditions during these practice shoots, owing to their natural desire to provide a maximum of training for their personnel assigned to base line towers, plotting rooms, etc., but during a recent conference with battery commanders the necessity for scheduling a few problems of indirect fire was pointed out in order that the Coast Artillery could become accustomed to relying entirely on airplane sensings. During an emergency certain important targets might easily become obscured from base line vision behind smoke screens, fog, etc., or, as in the case of submarines, partially submerged and invisible to the C.A.C. observation towers, and the batteries would then be practically firing in the dark were it not for air observation. The point was conceded, and arrangements are under way for such a problem to be conducted when the 5th Group receives a shipment of gasoline.

All officers of the 5th Group made a tour of inspection through Battery Hasbrouck, Fort Kamehameha last Tuesday, and were thoroughly instructed in the functioning of C.A.C. plotting rooms.

The 4th Squadron sent out a photographic mission Wednesday during the firing by Battery Ahua to procure obliques of each burst. Every shot was caught and each plate registered not only the burst but the sea and target as well. Complete sets, numbered consecutively, were attached to the reglage observers reports and presented to the battery commanders concerned in the maneuvers.

All officers in the Group are taking advantage of the enforced aerial inactivity by attending daily classes in armament, radio, trap shooting, and blackboard artillery adjustment. Of the eighteen pilots in the different units comprising the 5th Group, there are only four who have not qualified to perform the duties of an observer on any kind of a mission, from reconnaissance patrol to air control of regimental artillery fire. All pilots are also qualified to act as bombers and gunners on offensive raids.

The two sets of bachelor quarters and the officers' mess are nearing completion and should be ready for occupancy within the next three weeks.

Hqrs. 5th Group (Observation) Luke Field, H.T., October 1.

Complete arrangements were made to furnish airplane observation during the service firing conducted last Thursday by the Coast Defenses of Honolulu. Fictif problems were carried out over the target zone by both the Reglage and alerte planes on Tuesday preceding the mission, during which the Communications system functioned perfectly through to the battery. During the mission all shots were directed at a tow target off shore, sensed and photographed accurately. Prints of each exposure were later forwarded to C.A.C. Headquarters.

Last Tuesday the Photographic plane of the 11th Photo Section carried out successfully a mission with the 11th Regiment Field Artillery, firing from Kawaiioa Point. All bursts were photographed, which subsequently proved invaluable to the Regimental Commander in determining the effect of the time firing test.

Advantage is being taken of the aerial inactivity, occasioned by the lack of gasoline, to train all officers thoroughly in Radio, Armament and Blackboard Artillery adjustment. Classes are being conducted daily in each subject, and arrangements have been made for a series of lectures on Artillery firing problems to be delivered next week by the Adjutant of the 11th Field Artillery Brigade. The Air Service mission will be clearly defined for each phase of artillery activities and many previously undetermined points will be cleared up for the improvement of local liaison.

Preparations are being made to conduct a series of problems with the Hawaiian Anti-Aircraft Regiment to determine the liaison necessary in carrying out night attacks on hostile landing parties. Detailed reports of these tests will be made later.

Hqrs. 5th Group (Observation) Luke Field, H.T. Oct. 1, Cont'd.

A flight of four DH4's and one Fokker is being organized to proceed to the Island of Maui for missions of reconnaissance and demonstration.

Luke Field is to have a championship football team this year if the squad maintains the aggressiveness displayed thus far during practice. Although the tennis season has closed, efforts to revive competition have proved successful, and now the title holders are facing challengers on every side.

Orders received by the Group directing the organization of a Branch Intelligence Office resulted in the appointment of Lieut. Ulrich L. Bouquet to be in charge of that office and Assistant Group Operations Officer.

Carlstrom Field, Arcadia, Fla., October 12.

Major Karl H. Gorman has reported to this station for a refresher course. He was a pilot in the Air Service during the war, but has been in the Cavalry since then.

The following is the flying time for the week ending October 12th: "A" Flight, 95 hours, 45 minutes; "B" Flight, 112 hours, 20 minutes; Headquarters Flight, 61 hours, 55 minutes; total time 270 hours.

Here is the spicy manner in which the Information Officer at Carlstrom Field describes a football game recently played by the Carlstrom team:

"This week all interest in everything else was lost as our team went to Gainesville to play the State University eleven. One half the squad flew to Gainesville in DeHavilands and the other half went on the train, and 'A good time was had by all'. Did we give them a jolt? I say we did! The 'Gator' team averaged 205 lbs. and we but 165, yet by speed and an offensive that completely bewildered and baffled the Florida eleven, as the papers say, we threw a surprise and a jolt into those big birds, and walloped them to the tune of 19 to 0. Three nice touchdowns to the good. Speed, that's what did it. In spite of all their pork we held them for downs every time they threatened our goal.

Our passing and unbalanced birds were too much for them, yet they said they were the best team Florida ever had. Well! that's more credit to our team and Lt. Vidal coaching. Now bring on Camp Benning."

Carlstrom Field, Arcadia, Fla., October 20.

Through the cooperation of the merchants of Arcadia, the strong Camp Benning team has been secured to play the Carlstrom Field football team at that field on October 29th. Everything is being done to make the game a success. The game has been insured against rain, bleachers are being erected and everything being done to give Arcadia a first class football game.

Sergeant William E. Winston, the only enlisted instructor at Carlstrom Field, passed the 2,000 hour mark of flying time last Friday. He has flown most of this time at Carlstrom, coming to this field when he had a little over 300 hours to his credit. Sergeant Winston graduated from the Ground School at Princeton, N.J., early in 1918, and took his flying training at Carruthers Field, Texas. He graduated just as the Armistice was signed, and was given a Pursuit rating and commissioned a Second Lieutenant in the Reserve Corps. It is doubtful if there is another enlisted instructor in the Army who can duplicate the record of Sergeant Winston. He has flown ten different types of planes, among them being the TM Scout, the Spad, Nieuport 28, LePere and Vought. He has taken the examination for a commission in the Regular Army, and the commissioned and enlisted personnel of Carlstrom Field wish him success.

Lieut. Henry J. Ward has been directed to take a course of instruction in the Engineering School at Camp Humphries, Va. While at Carlstrom he was in charge of Engineering and Technical Supply.

Langley Field, Hampton, Va., October 22.

The Langley Field football team suffered their first defeat of the season when the Naval Base team defeated them in a fast and exciting game at the Naval Base, Saturday afternoon, by the score of 19 to 7. The Naval team boasts of one of the best teams in the State, and although Langley Field came out at the small end of the horn they accomplished something that no other eleven has done this season - crossing the Naval Base chalk line for a touchdown.

Langley Field, Hampton, Va., October 22, Cont'd.

Major Arthur G. Fisher, who was injured in the Pony Blimp accident, has been removed from the hospital at Fort Monroe to his quarters at this station. He is now well on the road to recovery, his injuries being slight, yet painful.

Lieut. E. H. Guilford, who has been stationed at Langley Field since July, 1919, has been transferred to the Philippines, and will sail on November 5th. He has served in many and varied capacities at Langley Field, chief among which being his development of radio activities. The science of wireless telegraphy, in which he is an expert, has during the past two years been brought to the front at this field, and it has been in this line of duty that he has been most interested and most actively engaged.

McCook Field, Dayton, Ohio, October 15.

Lieut. C. Lester Morse of the Airplane Section, S. & A. and Mildred Corrine Van Ausdal of Dayton were united in marriage on October 10th. Only a few friends were present, and immediately after the ceremony a luncheon was served at the Shrine Club and the couple left in the afternoon to the groom's home in New Hampshire, where they expect to spend their honeymoon.

The stork made a call at the home of Lieut. McCune of the Armament Section and left a fine baby boy Saturday, October 8th.

Major Davidson took a little plane ride not long ago and returned to earth with the wings of his machine resembling the frills on mother's old-time paper fly chaser. The Major has not divulged the secret of just what he encountered up there, but surely it was nothing short of a meteoric shower.

Major Davidson, former Chief of the Supply Section and now a member of the Officers' School, and Miss Mary Perrine Patterson, of Dayton, were united in marriage on Saturday, October 8th, in the presence of only a few relatives and friends. Following the ceremony a buffet supper was served, and later Major and Mrs. Davidson left for a trip to Texas and Mexico.

The engagement of Miss Eugenie Ohmer to Lieut. George B. Patterson, Chief of Technical Data Section, was announced at a bridge party Thursday afternoon, October 6th, at the Dayton Country Club. Lieut. Patterson is scheduled to sail within the next few months for special duty in the Philippines.

Sometime ago Lieut. Sloan and Lieut. Niedermeyer were making a cross-country trip in a plane. Something necessitated a forced landing. The section over which they were flying proved to be a very level bit of Indiana country and the flyers, spying a fine stretch of green lawn in front of a group of buildings, nosed down and made a good landing upon it. A crowd came running from the buildings and collected about the plane eyeing the officers curiously. Finally one of the group approached closer and pulling down his spectacles to the tip of his nose, exclaimed "Well I'll be derned! I've seen 'em come in here on foot, in buggies and in automobiles but this is th' fir' time I ever seen 'em arrive by airship". "What are these buildings", asked Sloan. "Why, this is the Hick County Pore House", replied the spectator.-Slipstream.

Crissy Field, Presidio of San Francisco, Calif., Oct. 15.

The removal of the 91st Squadron (Obs)., from Forest Patrol Duty in Oregon and Washington to Crissy Field, California, its permanent station, was completed during the past week. During the early part of the week the ceremony of turning in surplus property at Mather Field was completed and the Squadron, as a whole, left Mather Field on the morning of October 12th, for San Francisco. The motor convoy consisted of approximately forty-five vehicles and made the trip without serious incident or damage to Government vehicles. The train camped the first night at the foot of the mountains near Livermore, California, and pulled in to the Presidio of San Francisco about noon of the following day.

All the departments in the Squadron are extremely busy taking over various duties in the Post, and in a short time, things should be running up to their usual standard.

The personnel of the 91st Squadron, both commissioned and enlisted, seem to be highly pleased with their new home, on account of the natural beauty of the location, the permanency of the buildings and the place in general, and its convenience to San Francisco and other cities around the Bay.

Crissy Field, Presidio of San Francisco, Calif., Oct. 15 (Cont'd)

The Officers of the Post and their wives were guests of Major H.H. Arnold, the Air Officer of the 9th Corps Area, at a dinner party on the 13th. It was followed by a dance at the Officers Club at the Presidio.

Mather Field, Mills, Calif., October 18.

The 91st Squadron (Observation) made only a short stay at Mather Field, arriving on the 4th and leaving here on the 11th by motor transportation. Lieut. W.A. Maxwell, A.S., was in charge of the truck train, and Captain E. Reinartz, M.C., Sanitary Officer, accompanied the troops. Captain L.H. Smith and Lieuts. E. C. Batten, B.S. Catlin, Jr., and E. Kiel of the 91st, ferried DH ships to Crissy Field, which will be the new permanent station of the 91st Squadron.

A detachment of 92 enlisted men, recently transferred from the Philippines, arrived by motor truck from Fort McDowell on the 11th. The number was divided between the 9th and 28th Squadrons. The enlistment term of the majority of the men will expire within the next three months, but many of them intend to remain in the service.

Lieut. Eugene B. Bayley, who was recently married, visited the post on October 12th. The newly married couple intend honeymooning through Oregon by motor car.

Lieut. Morgan, Detachment Commander of the forest patrol sub-base at Corning, arrived on the 14th with Cadets LeBreton, Herberger, Doles, Templeman, Ryan, Mellon, Lang and Sergeants Coate, Ford and Hurley. The aerial forest patrol work has been completed for this season.

Lieut. George A. McHenry, Detachment Commander of the Sub-base at Visalia, Calif., returned by plane to Mather Field on the 13th, with Cadets Charles, Evetts and Zufall. Captain W. A. Boyle, M.C., who was Flight Surgeon for the detachment, motored up from Visalia. His temporary duty with this command has been completed and he will return to Letterman General Hospital immediately. The truck trains carrying the ground workers and equipment arrived from Visalia and Chowchilla on the 15th.

Captain Albert D. Smith A.S., who has been in charge of the Air Service Recreation Camp near Blairsden, Calif., returned with his small detachment of enlisted men by motor transportation on the 14th. He reports that the weather has been ideal all summer and that there is plenty of fish in the lakes and streams up there and splendid opportunities for getting deer during the hunting. If it is possible to establish this camp next summer, undoubtedly a great many more of the Air Service personnel will take advantage of the hospitality of the camp. Probably the outfit returned just in time to avoid the first snowfall. They had numerous frosts during the past five weeks and, undoubtedly, the rain that the Sacramento Valley got during the past week would mean snow at an altitude of 6500 feet where the camp was situated.

Kindley Field, Fort Mills, P.I., Sept. 10.

Five of the enlisted personnel of the 2nd Squadron (Obs.) left this field early Friday morning en route to Camp Stotsenburg to join their new organization - Air Park No. 11. These men have been on detached service for quite some time, and no doubt they will be missed throughout the various departments of this organization.

Lieut. Ellicott flew the headquarters plane No. 2640 to Manila on Friday. This plane has been at this field for sometime undergoing a general overhauling.

Clark Field, Pampanga, P.I., Sept. 10.

Fifty-six of the men at Corregidor Island, who were transferred to Air Park No. 11 on June 30th, reported at this field for duty. Their arrival will serve to greatly relieve the personnel situation at this field.

On September 9th a technical inspection of the field was conducted by the Department Air Officer, Major B.Q. Jones, Captains Edwards, Erwin, Cole and Lieut. Bettis.

Hqrs. Det. Fourth Group (Obs.) Paranaque Beach, Manila, P.I. Sept. 10.

Major B. J. Jones, Air Officer, led a formation flight of four planes to Clark Field on Friday, September 9th, for the purpose of inspecting that post. The pilots in the formation were Major Jones, Lieuts. Bettis, Hurd and Blaney; passengers, Captains Ervin, Cole and Edwards from Kindley Field, who assisted Major Jones in the inspection.

Major Christie was on the field during the week and made 22 hops in a DH4. Major and Mrs. Christie leave for Japan on the Transport THOMAS, sailing Thursday. Major Christie has been assigned as Assistant to the Military Attache, stationed in Japan, and will concern himself chiefly with Air Service affairs in that country. During his short stay, he made many firm friends in Manila, and the Air Service especially regrets that his assignment was not the Islands instead of Japan.

The Headquarters Detachment is in receipt of a special dual control DH4. This plane is to be used in giving seaplane pilots at Corregidor a refresher course in flying land planes.

Lieut. Richter has been assigned as commanding officer of the Philippine Air Depot for Air Service supplies. The Depot will receive and distribute all Air Service supplies coming to the Islands. Lack of funds, however, has made it impossible to establish a Philippine Air Depot, with the result that this Depot is a depot in name only. It is hoped that the construction of hangars and other buildings at Camp Nichols will be started soon, so that the Philippine Air Depot will actually be started. Camp Nichols is a very attractive post, about six miles south of Manila. There is an attractive Commanding Officer's quarters and three double sets of quarters of the two story style which will house six families.

Due to the lack of funds the Quartermaster of this Department has been unable to purchase gasoline and oil for sale to officers, with the result that officers owning cars must purchase fuel from civilian concerns. Inasmuch as gasoline was purchased from the quartermaster formerly at 25c a gallon and the standard price in Manila at this date for gasoline is about 1.30 or over 60c per gallon, it is easy to appreciate the disappointment the stoppage of the sale of gasoline and oil has occasioned. The Philippines have been hit by the slump in financial matters, as well as the rest of the world, with the result that the sale of second-hand automobiles in Manila is probably worse than it is in the States; hence any parties coming to the Philippine Islands with the idea of disposing of their cars sometime after their arrival here should make sure that the market has materially improved before doing so.

The slowness of the receipt of supplies and materials necessary to provide for facilities to carry on the air practices is occasioning considerable delay in the inauguration of that project. It is believed, however, that facilities will be provided in time to allow the Air Service personnel of this Department to show their true worth. Now that the property situation is gradually beginning to clear up, much effort and enthusiasm is being evidenced by the Air Service personnel over their aerial proficiency, in order that they might be able to make a good showing. The aerial practices will be so arranged as to allow the personnel to be graded, which will establish a relative standing among pilots, and hence can be executed in the nature of competition.

Considerable trouble has been experienced with the gasoline speed launches, so an effort is being made now to secure a 30 ft. steam sailing launch for rescue purposes. These steam sailing launches are very reliable and will always be in commission.

Effort is being made now to secure a buoy, to be anchored within the breakwater in Manila harbor, for the purpose of tying up seaplanes which are required to make visits to Manila. By so doing over an hour's time is saved in getting to and from Corregidor, at the same time the seaplanes will be more protected from the weather, inasmuch as they will be within the harbor.

Ross Field, Arcadia, Calif., October 19.

A new class of student officers will commence their studies on the morning of November 1st, 1921. This class, in addition to instruction in observer's work as formerly taught at this school, will initiate the new course in airship training. As far as possible, present members of the School Staff will be given instruction in flying the larger ships, and as soon thereafter as possible all other observers at Ross Field will be scheduled for this training.

Ross Field, Arcadia, Calif., October 19. (Cont'd)

Work has been started on the construction of two steel hangars at Ross Field. The famous old Lucky Baldwin race track has been leveled to provide space for these buildings. The buildings are to be 220' x 75' x 70' and, according to the terms of the contract, will be ready for occupancy within five months. This station has been advised of the shipment of one airship, No. D-4, complete with full equipment, from Langley Field. The Pacific Coast will see its first big army dirigible upon the arrival of this ship.

The class of cadets which started training October 3rd is making good progress. The cadets, many of them soldiers of considerable experience, have been much pepped up by refresher courses in Infantry drill, the result being evidenced by a very snappy detachment. These students are very much interested in the work, and it is felt that very good results will be obtained.

Colonel T. A. Baldwin, Jr., commanding officer of this post, who has been away on leave, is expected to return Saturday, October 22nd.

The monthly officers' dance was held Friday evening, October 14th, at the Officers' Club. A large number of officers and their families took advantage of this opportunity for a most enjoyable evening.

Lieut. G. C. Wynne, Quartermaster of this post, and Mrs. Wynne, will return on October 19th from an extended leave in the northern part of the State.

The married officers of the post will give a dance to the bachelor officers on Friday evening, October 28th. The bachelors recently provided an evening of dancing and entertainment for the married officers. Many unusual features have been promised for the coming event.

Mrs. W. C. Cummings, wife of Lieut. Cummings, returned from a visit in Chicago.

Captain Ivan B. Snell, A.S., former student officer of Ross Field, who has been in command of the 24th Balloon Company, is expected from San Francisco shortly. His organization has been demobilized and he will be stationed at this field.

A number of officers of the post enjoyed hunting leaves during the recent weeks, traveling to points in Imperial Valley and elsewhere.

Major General Wm. M. Wright, Commanding General of the 9th Corps Area, visited this post Monday on an informal tour of inspection. The General seemed to be very pleased with conditions found here, being especially impressed with the cleanliness at large.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE NOVEMBER 19, 1921.

A MESSAGE FROM GABRIELE D'ANNUNZIO

Gabriele d'Annunzio, Italy's Poet-Aviator, who became quite a figure in international politics as the result of his occupation of Fiume, has given through Major James E. Chaney, Air Service, Assistant Military Attache at Rome, a message to the aviators of the United States, a translation of which is as follows:

"While the wings of new Italy are racing over this reconsecrated lake for the Cup of the Eagles offered by me, I send across the ocean my greetings and the greetings of all Italian aviators to our glorious American companions who with us are steering the aerial plow towards the promise of the future."

Major Chaney states that he met d'Annunzio on September 25th at Lake Garda, on which day were staged the international races for the d'Annunzio Cup. d'Annunzio, since his return from Fiume, has led a very secluded life in a Villa at Gardone-Riviera, overlooking Lake Garda. He is very rarely seen and very rarely receives anyone.

d'Annunzio was extremely cordial, asked many questions about America, and seemed to have a most cordial feeling towards the United States, stating that he was very anxious to go there some time in the near future for some of our big aviation competitions. He is lame and has lost the sight of one eye. This is due to an aviation accident during the war, in which he sustained a broken leg, was temporarily blind in both eyes, and received other slight injuries. When he appeared in public, as he did only twice, hundreds of Italians crowded around him very anxious to get a view of him, were extremely enthusiastic and excited over the short speech he made and they look upon him as a great National hero.

ENCOURAGEMENT TO AVIATION

From time to time we see mention made of various prizes, subsidies, etc., offered by foreign countries towards the development of aviation. England recently offered prizes to inventors for the best type of a safety gasoline tank. Now France comes along with an offer of one million francs for the best aero engine, to be awarded to the constructor of an aero engine which has given proof, in passing satisfactory tests instituted for the purpose, of durability, reliability, ease of dismantling and erecting, and similar qualities indispensable in a commercial engine.

The competition is to be international, under the reservations of the present rules of the Federation Aeronautique Internationale, and foreign manufacturers will be allowed to compete after having undertaken to manufacture their engine in France, if successful. The engines must be ready for test at the latest on June 1, 1923. It is understood that M. Michelin has given a handsome donation towards the prize, and presumably the rest will be raised by the Committee for Aerial Propaganda, which was established last year, its president being General Duval, late Director of the Aeronautique Militaire. The offer appears to be sufficiently generous to make it worth while for manufacturers to compete. Even at the present rate of exchange, the prize should be sufficient to see a firm just about reimbursed for its outlay in producing an engine. It should also be borne in mind that a firm which produces an engine for the competition, even if not actually winning it, would stand a very good chance of selling a fair number, since it is scarcely likely that any one engine can be found which will satisfy

all requirements, and in certain circumstances and for certain uses non-prized engines might be found more suitable than the winning design.

The London FLIGHT states that if it be possible to evolve an absolutely reliable engine, aviation's worst trouble is over, and remaining problems can be attacked with equanimity. Night flying and flying in fogs will lose most of their perils, and long-distance flying over the sea will become possible and safe. With an absolutely reliable engine - and by this is meant its vital accessories as well - and a proper organization of wireless direction finding stations, there will be few places on the globe which cannot be linked up by air services. Furthermore, when night flying becomes safe over long distances, the speed of the airplane will be virtually doubled. That is merely another way of saying that the present high speed need not be maintained in order to compete easily with older means of transport. Consequently, slower machines can be used and a greater paying load carried per horse-power. The result will be a reduction in the cost of air transport which, in conjunction with safety and reliability and regularity, is what the aeronautical fraternity is aiming at and working for. Commercial aviation of the future will in the very nature of things be of an international character, and what benefits one nation will benefit all.

In conclusion, FLIGHT hopes that the excellent example set by France will be followed by other great nations, in which case we shall soon see splendid progress in commercial aviation towards that perfection which is bound ultimately to place it in the very front of means for intercommunication between nations.

It is not difficult to conceive the results that would follow were incentives, such as that furnished by France, England and other European countries, placed before inventors in this country, where commercial aviation is not subsidized and must stand on its own legs. America invented the airplane, but it has not made the forward strides in commercial aviation that some European countries have made. America is the Mecca of the inventor, and when it comes to inventive genius this country far surpasses any other country in the world. One does not have to delve into statistics or make searching investigations to substantiate this contention. No stronger testimony of this fact is needed than the Official Gazette of the United States Patent Office, issued weekly, containing the patents, trade marks, designs, etc., filed with that office. The United States Patent Office is continually swamped with work and it is one of the few government departments that has been self-supporting. And the majority of the patent attorneys in this country are waxing fat and prosperous.

Once in a while there is listed in the Official Gazette of the Patent Office some invention pertaining to aircraft but, as a general rule, such inventions are conspicuous by their absence. The conclusion might be arrived at that the cause for this state of affairs is attributed to the fact that the average American inventor has no great faith in the future of commercial aviation in this country and that there would be no financial return for his efforts to contrive improvements in aircraft. Let this country, however, offer subsidies, prizes, etc., to inventors as a reward for their efforts along aeronautical lines, and it is safe to say that it will not be very long before the United States will become first and foremost in the world of aeronautics, a place that rightfully belongs to her by virtue of the fact that America is the birthplace of the airplane.

Prior to the World War aeronautical activities in this country were practically at a standstill. It required the stress of war to bring forth one of the best aero engines now in existence - the Liberty.

CASUALTIES IN MILITARY AND COMMERCIAL AVIATION

The Paris newspaper "LeMatin" of October 5th, in drawing a comparison between casualties in military aviation and those in civil aviation, states -

"Whereas the toll of loss by Military Aviation averages $1\frac{1}{2}$ persons killed and 3 persons wounded per week, Civil Aviation continues its ascending progress.

The schedule for the month of September 1921 shows the following favorable figures for the aeroport of LeBourget alone:

433 planes arrived and departed.

CASUALTIES IN MILITARY AND COMMERCIAL AVIATION, CONT'D.

1418 passengers safely transported as against 1190 for the same month last year (1920).

16½ tons of merchandise transported as against 12½ tons for the same month last year.

1150 lbs. of mail transported as against 1087 lbs. for the same month last year.

Only one accident reported, that at LeBourget, where the plane from Strasbourg fell in consequence of faulty piloting. Traffic suffered immediately from this accident, only 365 persons traveling during the ten days' period immediately following the accident as against 660 passengers for the 10 days' period immediately preceding it.

The inference one must draw from the above is that civil aviation is far safer than military aviation and, as a matter of fact, such really appears to be universally the case, for this condition of affairs is not confined to France alone but to the United States and other countries as well.

Military aviation and commercial aviation are two radically different propositions, and accidents in the military service must not be taken as a criterion of commercial safety. It is well here to discuss some of the reasons why travel by commercial plane is safer. Let us first take the pilot. In commercial aviation it is safe to assume that practically nine out of every ten flyers have been in the military service, either the Army, Navy or Marine Corps, have mastered all the details of flying, and are competent and experienced pilots. They start in the commercial field with a large number of flying hours already to their credit, and since their work is purely that of flying they are always in flying trim. Naturally this condition does not obtain in military aviation. One of the chief functions of the Army Air Service is the training of flyers. In glancing over the list of fatalities in the Army Air Service for the calendar year 1920 we find that nearly 50% of the accidents occurred among flying cadets or enlisted men undergoing various stages of flying training. Statistics are not at hand at the present moment showing how many officers comprising the remaining 50% were undergoing flying training or taking refresher courses.

Expertness in flying requires constant practice, and in this respect the commercial flyers possess a great advantage over the majority of the flyers in the military service.

Consideration must be given to the fact that a great many officers in the Army Air Service are engaged upon necessary administrative duties. In order that an Air Service officer may draw his flying pay it is necessary that he engage in ten flights per month to keep himself in proper flying training. Some officers find it difficult to get away from their desks to indulge in flying, and many of them will take off several hours on some day during the month in order to get in their ten flights.

Then, again, the character of flying in the Army and in the commercial field is radically different. The commercial pilot flying from one airport to another only does straight-away flying, with no frills. His job is to get his passengers and goods safely to their destination. The military flyer, on the other hand, cannot confine himself to straight-away flying when he is on duty with an aero squadron, for to do so would mean that his value in time of war, when planes must be maneuvered in every conceivable manner to successfully combat the enemy, would be nil.

With regard to the airplane itself, there is a wide difference between the type employed in the military service and that employed commercially. Commercial machines, in the majority of instances, are much larger and of a slower moving type than military airplanes, which are smaller, faster, and much more maneuverable. And this must naturally be so. The Army pilot in time of peace is trained for duties which will devolve upon him in time of war, so that in his peace time training he must pilot planes designed for war service. In war the pilot who flies the faster and more maneuverable plane has a great advantage over his adversary and stands a much better chance of gaining the upper hand, and hence in the design of war machines greater stress is laid on speed and maneuverability than to safety.

It is also well to consider in this discussion the matter of routes traversed and the landing field problem, which are very important factors. In an air journey by a commercial airplane from one designated airport to another a certain

established type of machine is used, and the flight is over a well established course. Emergency landing fields are previously located, and in his routine flying the commercial flyer always has in mind a landing field to go to in case of any interruption in the operation of his plane. What the Army pilot has to contend with in the matter of the landing field problem may be illustrated by citing his duty along the Mexican border and in the forested areas in our Great Northwest. Along the Mexican border the Army pilot, whose duty was to watch the international boundary for hostile bandits, the wary bootlegger or the wily ammunition runner, had to fly over uninhabited country broken by dry washes and covered by mesquite and cactus, with possible landing places few and far between. He had to run the same risk on forestry patrol work, where in case of motor failure or other trouble, he was confronted with the unpleasant prospect of crashing into some tall trees or against the side of a mountain.

PHOTOGRAPHIC FOREST SURVEY ✓

The 15th Aerial Photo Section, located at Crissy Field, Presidio of San Francisco, California, made a photographic survey recently covering the district between Fort Bragg, California, Montague, Calif., and Mather Field, Sacramento, Calif. This survey is to furnish data regarding the value of forest patrol operations during the past summer.

INTERNATIONAL AVIATION RALLY AT LORETO, ITALY

A report on the International Aviation Rally held at Loreto, Italy, on September 11th last, has just been received from the Military Attache at Rome. Major James E. Chaney, Air Service, Assistant Military Attache, attended this meet. The following program was carried out:

7:30 a.m. Three flights of four airplanes each made formation flights over certain assigned sections of the Adriatic Coast to a distance of 30 kilometers inland. The flights were of bombardment, reconnaissance and pursuit planes, and to each flight was assigned a mission involving the principles of these specialties. The flight carrying out the most successful mission was awarded a handsome cup presented by the War and Navy Departments jointly.

10 a.m. Benediction by the Cardinal of Loreto of the airplanes in flight over Loreto.

10:30 a.m. Religious Ceremony.

12:30 p.m. Official reception of all the pilots and authorities at the Royal Palace.

1:00 p.m. Banquet in the Royal Palace.

4:00 p.m. Presentation of insignia and prizes.

A concert, a lottery for the benefit of an orphan asylum for children of aviators killed in the war, fireworks and various other events occupied the rest of the afternoon and evening.

The Rally was attended by high officials of the Italian Government and of the Church, and by representatives of several foreign countries. A squadron of six Swiss airplanes was also present.

This Rally was in recognition of the adoption by Italian aviators and Catholic aviators abroad of the Madonna of Loreto as their patron Saint. The Italian Government has given official recognition to this patronage just as the Infantry, Artillery and Cavalry arms of the service each has its patron saint.

It may be interesting to know why the Madonna of Loreto was selected as the patron saint of aviators. In the cathedral of Loreto, a small village overlooking the Adriatic near Ancona, is the House of the Virgin which was originally at Nazareth. Some centuries ago this house was moved, supposedly by miracle, from Nazareth to the Dalmatian coast. It remained there for some time, and about 600 years ago it was transferred, supposedly by a miracle, to its present position, which was then a laurel grove, and the present town gradually grew up around the place. This house is now in the cathedral and is protected and surrounded by a marble grating with numerous old sculptured figures representing the small house in the air during the various stages of its supposed flight to Loreto.

NEW THEORY OF THE SLOTTED WING ✓

In a paper recently read before the Society for Aeronautical Science at Munich, Dr. Betz dealt with a certain development in sustaining planes or aircraft wings due to Lachmann in Germany and Handley Page in England. The object is to increase the lift by providing slots in the wing parallel to the leading edge. If these are to be effective they must extend without interruption across the entire width of the wing. This arrangement may also be regarded as an extra plane of small depth placed in front of the main wing at its leading edge so that there is only a very small space left between the two. The maximum lift of the plane is thereby increased by 80 percent or more. There are different explanations of this phenomenon. One is that the small plane located in front of the main plane is located in an air stream whose conditions of flow are determined by the main wing. It follows that at the leading edge of the main wing the air speed materially exceeds the speed of flying. The reactions of the air on the small wing in front therefore are considerably greater than if it passed through space at the flying speed.

The new explanation of Dr. Betz is based on the fact that for a given speed the lift of a plane increases with the angle of incidence until the air stream on the upper surface can no longer follow that surface. If the angle of incidence becomes too big, a new condition of flow develops, the air stream separating from the plane, creating a field of eddies which grows with the angle of incidence. Such eddies have a tendency to form even in the case of small angles of incidence, but the air, passing over the plane, immediately washes them away, and thus maintains a smooth, lift-creating stream. In the case of large angles of incidence this becomes impossible. But if the air stream on top of the plane is reinforced by air passing through the slot in the wing from the under to the upper side, the lift-creating flow conditions can be maintained even with larger angles of incidence. New energy is being supplied to the air stream on top of the plane by the air flowing through the slot, which enables it to continue to wash away the eddies. This energy has to be paid for, however, the phenomenon being accompanied by increased drift of the slotted plane as compared with a plane without slot.

This new explanation is valuable for the reason that it furnishes a basis for judging the value of new plane combinations of the kind referred to, and facilitates the arrangement of systematic test series in a field where the number of possible combinations is almost without limit. - Automotive Industries.

GENERAL PATRICK INSPECTS McCOOK FIELD

For the last few years it has been customary, usually semi-annually, to hold an inspection of the Engineering Division at McCook Field for the purpose of formulating policies as to the carrying out of the experimental programs thereat. The inspecting party on the trip made on October 23rd represented the operating units of the Air Service and studied the equipment from the standpoint of its adaptability for use in the field. The party consisted of men qualified along the various lines of activities found in the field.

The inspection party was headed by General Mason M. Patrick, Chief of Air Service, and General William Mitchell, Assistant Chief of Air Service. General Patrick arrived at McCook Field by train, accompanied by Major Kilner, on October 24th, spending two days in the inspection of McCook Field and the Intermediate Depot at Wilbur Wright Field, returning to Washington on the evening of October 25th, while Major Kilner remained until October 27th. General Mitchell and the remainder of the party made the trip to Dayton and return by airplane. The remaining personnel of the party included Captain Walter R. Lawson, Captain Louis R. Knight, Lieut. Clayton Bissell, Lieut. Richard T. Aldworth and Lieut. Carl A. Cover, from Langley Field, and Captain Burdette S. Wright and Captain William C. Ocker from Washington. General Mitchell and Captain Wright, flying DeHavilands from Washington on October 23d, were met by Captain Ocker at Moundsville, who accompanied them to Dayton. Captain Lawson flew a Martin Bomber #1 to Dayton from Langley Field, carrying with him Captain Knight. It is interesting to note that this plane flown by Captain Lawson was the same plane used in the sinking of the OSTFRIESLAND and the ALABAMA and in connection with the mining strike troubles at Mingo County, West Virginia. Lieutenants Bissell and Adworth made the trip in DeHavilands, while Lieutenant Cover took a Thomas Morse pursuit through from Langley Field.

A thorough inspection of the field was made by the party. The various types of pursuit, bombardment, attack and observation planes were flown and, in the case of pursuit and observation, the planes were maneuvered against each other by the various members of the party, in order that a complete study of the characteristics in the air could be made. In making this study over 130 flights were made during the week by General Mitchell and his staff.

General Patrick, General Mitchell and the staff were most enthusiastic about the work being done at McCook Field and the various types of planes, of which experimental models were present, or the preliminary drawings and characteristics worked out. The inspection was completed November 2nd, and the parties returned to their respective stations on November 3rd and 4th.

General Mitchell, in flying a DeHaviland, made a non-stop flight from McCook Field to Bolling Field, Washington, D.C., in 3 hours and 35 minutes, flying for the greater portion of the time over banks of clouds, navigating purely by compass, with the aid of several navigation instruments.

AMERICAN LEGION FLYING MEET AT KANSAS CITY

One of the outstanding features of the Flying Meet held at Kansas City, Mo., during the annual convention of the American Legion, commencing October 29th, was a record parachute leap made by Sergeant Encil Chambers of Post Field, Fort Sill, Oklahoma, who jumped from a specially equipped plane piloted by Lieutenant Wendell Brookley, Air Service, when at an altitude of approximately 26,000 feet. The engine of the plane was fitted up with a supercharger, and both men carried oxygen tanks. Intense cold was encountered during the flight, and Brookley and Chambers used their oxygen when they reached 22,000 feet. When the flyers reached the "ceiling", Chambers climbed out on the plane and dived head first into space. According to Chambers, he dropped fully 500 feet before his big silk parachute opened. The ascent took about an hour and a half, and the descent of the parachute took 18 minutes. Sergeant Chambers' former record was 22,000 feet, made at Post Field on February 22, 1921, at which time he fell at least 1500 feet before he finally succeeded in pulling the wire so that the "chute" could be released. This record was broken by Lieut. Arthur Hamilton, Air Service, at Rantoul, Ill., on March 23, 1921, when he made a jump at an altitude of 23,700 feet.

The Air Service, under the official sanction of the War Department, was represented at the meet by a formation of six DH4B airplanes from Post Field, Fort Sill, Oklahoma, under the leadership of Lieut.-Colonel Paul W. Beck, Assistant Commandant of the Air Service Observation School at that station. Other pilots making the trip were Major Thomas G. Lanphier, 1st Lieutenants Wendell Brookley, K.N. Walker, J.D. Givens, Paul Wagner and Everett S. Davis, and eight enlisted mechanics.

Lloyd Bertaud, of New York, won the aerial derby race over a 140-mile triangular course, 8 laps, time 60 minutes, 15-2/5 seconds. Second place went to Lieutenant J.D. Givens, Air Service, time 66 minutes, 15-1/5 seconds; third place to C.B. Wrightman of Tulsa, Okla., time 67 minutes, 17-4/5 seconds; fourth place to Lieut. Paul Wagner, time 67 minutes, 55-1-5 seconds; and fifth place to Major T.G. Lanphier, time 68 minutes, 12-2/5 seconds.

In the junior aerial derby race over a triangular course of 87-1/2 miles, Charles S. Jones, of Garden City, L.I., New York, piloting a two-passenger plane, won first honors in 53 minutes and 53 seconds. Twenty planes started in this race.

Full details of this Flying Meet will be given in a forthcoming issue of the NEWS LETTER.

THAT GRAND AND GLORIOUS FEELING

Didya ever get up in a ship and when you're high enough so that you can be trusted, the instructor says, "She's all yours," and you take the stick and try to give her enough right rudder to overcome the torque and by that time the nose is either up or down or the wings aren't level, and by the time you correct those minor details she is drifting off sideways, somewhere, didya? And after you sweat blood for a while and go from rotten to rottener, the instructor grabs the stick and sets her level and directs you, in the name of all that's holy to

keep her that way, and you don't and he makes a few choice remarks as to the amount of gray matter you are endowed with, and the horizon gets the St. Vitus dance, and the wings absolutely refuse to stay put, and the instructor tells you you are a goof, which is superfluous, because you've known that for some time. Just about then your instructor's remarks are hot enough to scorch the tail surfaces and you wish you had a transmitter on the Gosport phone so you could come back at him and you resolve to hide it somewhere tomorrow; didya ever notice that just about then you get mad and pull yourself together and manage to hold her level for a minute or two and you find it's not so bad after all. Just then, if your instructor nods his approbation, Oh, Boy, Ain't it a gran' an' glorious feelin'? -- Carlstrom News.

RESUMPTION OF RECRUITING FOR AIR SERVICE

The Air Service is in immediate need of over 3,000 enlisted men to fill existing vacancies, and authority for the procurement of these recruits was contained in a letter from The Adjutant General of the Army, dated September 8, 1921, which outlined the procedure to be followed in securing recruits. Additional instructions regarding recruiting were subsequently issued by The Adjutant General in a series of recruiting letters.

Recruiting will again be conducted under the direction of Corps Area Commanders. Under this plan the Air Officer is the representative of the Chief of Air Service for all matters pertaining to recruiting for the Air Service within the corps area, and therefore the successful solution of the present recruiting problem is directly in the hands of the Air Officer. Each Corps Area Air Officer and the Commanding Officer of Bolling Field, Anacostia, D.C., has been directed to submit on December 31, 1921, a detailed report concerning recruiting activities for the Air Service within the corps area or district. Certain quotas have been assigned to various corps areas, but as these do not take into consideration current losses through discharge, it will be necessary from time to time to increase those quotas to compensate for such losses.

The distribution of the authorized strength of the Air Service by organizations is as follows:

<u>Organization</u>	<u>Strength of Organization</u>	<u>Number of Organizations</u>	<u>Total Strength</u>
Wing Headquarters	20	1	20
Group Headquarters (H/A)	35	6	210
Group Headquarters (L/A)	18	1	18
Squadrons	132	25	3300
Squadrons (R.S.)	90	10	900
Balloon Companies	130	3	390
Balloon Companies (Coast Defense)	100	8	800
Airship Companies	130	6	780
Air Parks	172	15	1720
Branch Intelligence Offices	5	6	30
Air Offices Casual Detachments	4	6	24
Photo Sections	20	13	260
Field Officers School	96	1	96
Photo School	51	1	51
Airship School	150	1	150
Pilot School	500	1	500
Gunnery Detachment	75	1	75
Mechanics School	100	1	100
Observation School	400	1	400
Balloon School	150	1	150
Flying Cadets	--	--	276
Communications School	50	1	50
			10,300

The following vacancies for enlisted men now exist at Air Service stations:

	<u>Heavier-than-Air</u>	<u>Lighter-than-Air</u>
Mitchel Field, N.Y.	479	
Aberdeen, Md.	3	33
Lee Hall, Va.	-	84
Langley Field, Va.	168	206
Montgomery, Ala. Air Intermediate Depot	33	
Carlstrom Field, Arcadia, Fla.	305	
Camp Knox, Ky.	55	
Scott Field, Belleville, Ill.		87
Chanute Field, Rantoul, Ill.	976	
Fort Riley, Kansas	110	
Brooks Field, San Antonio, Texas		166
Ellington Field, Houston, Texas	296	
Kelly Field, San Antonio, Texas	443	
Post Field, Fort Sill, Okla.	4	91
Rockwell Field, San Diego, Calif.	9	
March Field, Riverside, Calif.	113	For duty in Hawaii
Bolling Field, Anacostia, D.C.	95	

APPREHENDING FUGITIVES VIA RADIO ✓

Co-operation with civil authorities in apprehending fugitives is a frequent feature of business at the Radio department at Post Field. During the current week the Dallas police report, sent daily by radio, described a bank defaulter, thought to be in this vicinity. The radio department notified the authorities at Lawton, Okla., and before the end of the day the man was under arrest.

COURSE FOR ENLISTED MEN AT COMMUNICATION SCHOOL

A new class for enlisted men, with 25 attending was opened at the communications school on October 17. This course will last for three months. It is a combined radio operators' and radio mechanics' course. Graduates will be qualified for both ratings.

POST SCHOOL AT KELLY FIELD.

In compliance with recent War Department instructions, a post school will be started at Kelly Field, San Antonio, Texas, on November 1, 1921. The following subjects will be taught:

Educational:	Common School Branches	Communications:	Radio
Vocational:	Automotive		Installation
	Ignition		Operation
	Carburetion	Telephony:	Installation and switchboard work
	Transmission	Utilities:	Carpentry and brick masonry
	Trouble shooting		
Business:	Typewriting and clerical work (Army)		

This school is open to all enlisted men.

DEATH OF LIEUT. ULRIC L. BOUQUET

A cablegram was received from the Commanding General, Hawaiian Department, announcing the death of 1st Lieut. Ulric L. Bouquet, Air Service, on October 26th, at Luke Field, as the result of an airplane accident.

At the outbreak of the war in April, 1917, Lieut. Bouquet enlisted at Fort Slocum, New York, and served in the 2nd and 19th Cavalry. He was detailed as a

candidate to attend the Officers' Training Camp at Fort Myer, Va., in August, 1917, and was commissioned a First Lieutenant, Field Artillery, on November 27, 1917, when he was assigned to the 313th Field Artillery at Camp Lee, Va. In April, 1918, he was detailed to take the course of instruction for aerial observers at Post Field, Fort Sill, Oklahoma, graduated therefrom on June 28, 1918, assigned to the Air Service on June 21, and then transferred to Selfridge Field, Mt. Clemens, Mich., for the purpose of pursuing the course of instruction in aerial gunnery at that station. Upon his graduation from the gunnery school he was transferred to Ellington Field, Houston, Texas, and assigned for duty as observer with the 190th Aero Squadron.

In October, 1919, while serving on the Mexican Border, Lieut. Fouquet completed the required tests and was rated an airplane pilot. He was commissioned a 1st Lieutenant, Air Service, Regular Army, effective July 1, 1920. On March 21, 1921, he was transferred to the Hawaiian Department, where he served until his death.

The Air Service deeply regrets the loss of this young officer.

AN ENTHUSIASTIC AERIAL PASSENGER

Whenever opportunity offers, King Albert of Belgium always selects the air for his journeys, thereby enabling him to undertake engagements which it would otherwise be impossible to entertain. On October 13th the King left Casablanca about 7 a.m. by the Postal Service aeroplane for Toulouse via Malaga, Alicante and Barcelona, arriving about 5 on Friday, October 14th. At Toulouse he took the train to Paris, and after a call next day upon M. Millerand, he left Le Bourget by air again, in his own aeroplane, and arrived at Brussels a little after 3 p.m.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England.

In accordance with plans approved a year or more ago official steps, it is stated, are being taken towards replacing the greater part of the army of occupation in Mesopotamia by units of the Royal Air Force. This will not only tend to save the government many millions a year in expenditures for the army, but will afford a great object lesson in the value of aircraft in carrying out the almost purely police duties of an army of occupation.

India.

The Indian Group of the Royal Air Force is being reorganized, and will in future comprise four wings instead of two, although the number of squadrons will not be increased. The new distribution of units is as follows:

R.A.F. Headquarters, Ambala.

No. 1 Indian Wing: Headquarters, Peshawar; No. 20 Squadron, Kohat; No. 31 Squadron, Peshawar.

No. 2 Indian Wing: Headquarters R.A.F. School, and No. 28 Squadron, Ambala.

No. 3 Indian Wing (new formation): Headquarters and No. 5 Squadron, Quetta.

No. 4 Indian Wing (new formation): Headquarters, No. 27 Squadron, and No. 80 Squadron, Risalpur.

Aircraft Depot, Karachi. Aircraft Park, Lahore. The Aircraft factory at Lahore is no longer required and is to be disbanded.

The Air Officer Commander of the Indian Group is Air-Commodore T.I. Webb-Bowen, C.B., C.M.G. For operational purposes, the group is under the command of the Commander-in-Chief, India.

Mexico.

A recent newspaper dispatch reports that the Mexican aviator Jorge Puflea made a flight from Ciudad Juarez to Tampico in an Italian "Ansaldo" plane, carrying six passengers.

AERONAUTICAL NEWS FROM OTHER COUNTRIES (Cont'd)

Mexico (Cont'd)

Three Lincoln Standard planes have recently been set up, and it is reported that they are intended for mail service and the transportation of passengers between Mexico City and Tampico. These planes will be used by the Mexican Company of Aerial Transportation.

Holland.

The airplane service between Amsterdam and German cities has been discontinued October 1st until next spring. The service between Amsterdam and Paris and Amsterdam and London, which last year was discontinued from autumn to spring, will be continued without interruption through the winter. Apparently the service between Amsterdam and London, which is operated by a Dutch Company, is not financially profitable, as The Netherlands government grants it a considerable annual subsidy towards making up its deficit. The government estimates for the year 1922 makes the amount of this subsidy Fl. 370,000 (\$149,740) at the normal rate of exchange.

Denmark.

Denmark is engaged in completing a system of conventions regulating air traffic. An agreement with Norway was recently signed, and a conference between Danish and German delegates will begin at Copenhagen for the conclusion of a convention similar to that between Great Britain and Denmark. These arrangements will prove useful when aerial intercourse, which is at present quiescent, comes to be re-started, as it will then be no longer necessary for airmen to obtain a special permit to land on every occasion, as is now the case. Conventions on the same lines with Sweden and Finland are also being prepared.

Egypt.

An air mail service between Cairo and Baghdad has recently been inaugurated by the British Royal Air Force in the Middle East. This service will run fortnightly, R.A.F. pilots and machines being employed to carry official mails. The scheme is arranged as part of the regular training of the R.A.F. The whole length of the line is 840 miles, the route from Cairo being via Ramleh, Amman, and Ramadie to Baghdad. A saving of ten to fourteen days will normally be effected by this service.

China.

An official Chinese circular has been issued regarding the Peking-Tsinan Aerial Postal Service which was inaugurated on July 1st and not August 1st as was officially stated previously. Regulations governing the carriage of mails or parcels are briefly as follows:

1. The Peking-Tsinan Aerial Postal Service will carry mails and valuables. No passengers will be carried for the time being.
2. The service from Peking to Tsinan will be on Wednesdays, Fridays, and Sundays, while from Tsinan to Peking the service will be on Tuesdays, Thursdays and Saturdays.
3. Machines will leave Peking on the scheduled days at 5 p.m., while they will start on their return trip at 10:30 a.m. The journey will be covered in two and a half hours.
4. The Peking terminal station will be Nanyuan temporarily, and that at Tsinan will be near Tuan Tin, Tsinan.
5. Besides the regular postage, mail or parcels carried by the service will pay aerial postage, the amount of which will be announced by the Chinese Post Office.
6. Aerial stamps will be on sale at all Post Offices.
7. Ordinary mails and parcels will be received at all Post Offices, but valuables must be taken for transportation to the Preparation Bureau of the Peking-Shanghai Aerial Service Administration, Peking, or either the Peking or Tsinan Aerodrome.

AERONAUTICAL NEWS FROM OTHER COUNTRIES (Cont'd)

Japan.

It appears that Japan is sparing no efforts or expense to building up a great military and civil air force. From England representatives of Messrs. Short Brothers and from the Sopwith Aviation Company have gone to the East to superintend the building of British-designed machines. In addition, a number of R.A.F. officers have gone to Japan to organize the Japanese naval air service. Japan has enrolled some of the leading British designers and engineers. Ship-building firms have acquired foreign licenses for the manufacture of naval aircraft and aeronautical engines, and several European firms have established branches in Japan. In addition, military and naval deputations from the East have been for some time inspecting factories and machines in Great Britain, and orders for British, French and Italian machines have been placed with various firms.

Spain.

An arrangement has been reached between the Compania Trans-Atlantic and the Zeppelin Company of Germany for the construction in Spain of two rigid airships, each 250 meters long, 38.8 meters in diameter, and with a gas capacity of 180,000 cubic meters.

An air base is to be established in Spain (between Sevilla and Cadiz) where one shed will be built. A base has also been selected in the Argentine Republic where two sheds - one revolving - will be erected. The manufacture of the sheds will require an estimated time of two years. The sheds themselves can be built in much less time.

A smaller ship of the capacity of 50,000 cubic meters will be used for service between Spain and the Canary Islands, and for the training of pilots.

UNUSUAL INCIDENTS IN AVIATION

A cute little aviator.

How a mouse took a ride in an airplane is being discussed over in Plainfield, N.J., where Harris W.C. Browne, who has a D.H. 6 which he keeps in a hangar on Greenbrook Road, took his ship out one morning recently and when up about 2,000 feet was surprised to see a field mouse running along the back of the front cockpit. The little fellow did not seem to be scared at all, and after looking around for a moment sprang down into the cockpit and disappeared from the view of the pilot. When the plane landed it was discovered that the mouse had gnawed a hole in the seat cushion, taken out some hair and built a nest in a corner under the life belt. The Aeronautic mouse was allowed to escape and is probably the only mouse in existence that ever went up in a plane and lived to tell the tale. The question is, what would Ruth Law have done if she had been the pilot.

Plane in fog gets help by wireless phone.

How the Croydon airdrome in London went to the assistance by wireless telephone of an airplane which lost its bearings in a fog in the Channel is described in a Reuter message from Brussels.

The airplane, which had been carrying out wireless telephone trials, belongs to the National Society of Aerial Transport. The machine left the Croydon airdrome and remained continuously in communication by wireless telephone with it. When the plane arrived over the Channel it ran into a thick fog, and asked its way so as to be able to fix its position. Croydon sent out directional messages every two minutes, and the pilot was able to regain the direct line with Croydon and to maintain it in spite of the fog. The trials were repeated on a line between Croydon and Brussels, and between Brussels and Paris with conspicuous success.

UNUSUAL INCIDENTS IN AVIATION (Cont'd)

Patient brought from Paris to London by airplane.

Recently, in response to an urgent call, Sir Douglas Shields, the eminent surgeon, left the Croydon airdrome early in the morning by airplane for Paris, and having found the patient fit to travel, brought him by airplane to London, where an operation was successfully performed the same evening. The surgeon left Croydon at 6 a.m., and arrived in Paris at 9:30 a.m. Upon examining the patient he decided to carry him to his own hospital in Park-lane, London. A bed was fitted up in the saloon of a Handley-Page machine, and surgeon and patient left Paris at 4 p.m. and arrived three and a half hours later in London. The patient stood the operation well and his condition was reported as slightly improved.

Room hunting via airplane.

From Paris comes the story of the novel method adopted by a wealthy American, intending to spend the winter in that city, of finding an apartment during the housing crisis. He hired an airplane and had the pilot drop 100,000 cards announcing that he was seeking an apartment of 9 rooms and 2 baths, regardless of price. The aviator scattered the cards over Avenue Bois de Boulogne, the Etoile, the Champs Elysees and the Rue de Rivoli. Two hundred replies were reported to have been received.

Arrested for violating aviation ordinance.

James Cox, president of the Men's Business League of El Dorado, Ark., is held at Dallas, Texas, under light bond pending hearing in Municipal Court on a charge of violating the city aviation ordinance.

Recently he flew over the city of Dallas in an airplane piloted by W.F. Shaffer, dropping circulars advertising El Dorado from the Chamber of Commerce and other business leagues of that place. Being unfamiliar with local aviation traffic regulations, however, it is alleged he sailed under the required 3,000 feet altitude over the business district, and was soon afterward taken into custody by a member of the police air patrol squadron.

SQUADRON NEWS

Post Field, Fort Sill, Okla., October 26.

The social season at Post Field opened this year with a formal dinner dance early in October. Present plans are to hold one large party each month, dinner for Air Service officers and their guests, to be served in the officers' mess before the dance. The dance will be attended by all officers at Fort Sill. A reciprocal plan of membership has been arranged with the Fort Sill Officers' Club, which makes available to all officers of the post two large, excellently equipped club houses.

The lounge room of the Post Field Club has been refinished, and, with the new furniture purchased last spring, presents a most attractive appearance. During the coming month the mess will be equipped with new china, silver and table linen.

A new five-kilowatt radio set of the Air Mail type is expected daily by the radio department at Post Field. This set will be equipped with 100-ft. masts, and will increase the sending radius from the field. The World's Series baseball games were received here play by play at the radio building.

The Second Annual Organization Day of Balloon Company No. 23, stationed at this field, was celebrated on September 26, 1921. Competitions of different sorts were held during the morning, and a "big feed" served at noon. Passes were issued to all members during the afternoon. A speldown at the manual of arms was won by Private, 1st Class, Carl Hegy, with Private Russell Jackson last man out. Private Dick C. Cook won the pack race, which consisted of striking shelter tents, rolling and slinging pack, and running 25 yards. Private Fred Ruppel won the rigging race, which consisted of laying two splices and tying knots. Excellence of work as well as speed determined the winner.

Supplementary season was fired on the rifle range during the first two weeks of October. Fifteen enlisted men of Balloon Co. No. 23 and one officer, Captain Harold McClelland, A.S., attached for firing, qualified. The results of this practice qualified all but six members as Marksman or better. None of the unqualified men fired, however, because of detached service, confinement, and sickness. The present strength of the company is 30 enlisted men.

No balloon flying can be carried on at present, because of lack of airworthy balloons. Two new Type "R" captive balloons have been ordered shipped to the company, and their arrival is daily expected. In the interim the company is occupied working on equipment and making various repairs.

Orders transferring members of the last officers' class in the Air Service Communications School have been received. First Lieut. G. O. Roberson will go to Ellington Field, 1st Lieut. James E. Adams to Chanute Field, 1st Lieut. Harold W. Beaton to Bolling Field, 1st Lieut. Max F. Schneider to Kelly Field and 1st Lieut. Wallace G. Smith to Langley Field. Members of this class graduated August 15, 1921.

On October 23rd Miss Jewel Moody and 1st Lieutenant Fred C. Nelson, A.S., of Post Field, were married in Pierce City, Mo., the bride's home. First Lieut. K. N. Walker, A.S., was best man. At the conclusion of Lieutenant Nelson's 30-day leave the couple will make their home at the field.

Under the guidance of Major John Jouett, the Post Field football team is rapidly rounding into shape and looks to be a formidable contender for leading football honors on the post and in southwestern Oklahoma. After eight days' practice the team held the Lawton, Okla. American Legion team to a lone touchdown. The Legion men outweighed the field team man for man, and a number of them were former collegiate players. On October 23rd the Post Field team played its second game, taking the long end of a 7 to 3 score from Walters, Okla., team. Games will be played with the two teams of the First Field Artillery and the Field Artillery School Detachment at the post to determine the post championship.

Preliminary instructions for the transfer of the 22nd Squadron (Observation) from Post Field to the Montgomery Air Intermediate Depot, Montgomery, Ala., have been received. According to reorganization plans, this transfer will involve only the sending of the records of the squadron. All men will be transferred to the Air Service Observation School detachment here. It is planned to transfer the 37 Air Service men now at Camp Bragg, N.C. to the 22d Squadron, and carry them as on detached service on the rolls at Camp Bragg.

March Field, Riverside, Calif., Oct. 29.

The 19th Pursuit Squadron, under the command of Major George H. Peabody, is flying S.E. 5's only. Some "mean" combats are seen daily, and they are usually followed by an aftermath of "Barracks Flying" that brings back memories of cadet days.

Lieut. Gullet, formerly of March Field, was a visitor at this field last week. The outstanding feature of the gossip he had to offer was the fact that our old friend "Joe" Bayley, who used to comment so caustically about those poor misguided youths who took the matrimonial plunge, has been knocked out for the count by the little fellow with the arrow. You can never tell about an egg by its shell.

The forces at March Field have been increased by the arrival on October 26th of a little aviatrix in the Y.A. Pitts family.

Hqrs. 12th Squadron (Obs.) Fort Bliss, Texas, October 22d.

On October 17th Captain Thomas W. Hastey reported back to the 12th Squadron and took command, after a leave of absence for sixty days, most of which time was spent in hunting and fishing. Captain Hastey is a very good shot, and most of the game that came in contact with him suffered heavily.

During the past week the Squadron Athletic Officer has been very busy selecting men for a Squadron Basketball Team from its seventy-five members. Most of the men like the game, and every one is fighting hard to make the team. It looks as though the 12th Squadron is going to have one of the fastest teams on the border.

Kelly Field, San Antonio, Texas, October 22d.

This week the weather was unusually good for flying, and the pilots of the 3rd Group (Attack) took advantage of every minute and so made many flights, mostly around the field.

The First Photo Section is fixing up a modern laboratory and developing room in the library building so as to make it unnecessary to go outside of the Group in order to develop any photographs they take.

Football players are very enthusiastic in their workouts, and Kelly Field expects to have the best team in the entire 8th Corps Area. A game will be played on November 24th (Thanksgiving Day) and preparations are being carried on with great care.

The draftsmen of the 3rd Group (Attack) are preparing a new Coat of Arms for the Group and from the appearance of the insignia now, all others look plain and ordinary.

Lieut. "Pop" Myers made a trip to Brownsville, Texas, piloting Lieut.-Col. Russel (Cavalry) of the Inspector General's Department.

Lieut. Harbeck made a trip to Dallas, Texas, on a special mission in the early part of the week, and returned several days ago.

Since recruiting was resumed and Major Blackburn Hall, Air Service, placed in charge of this duty, candidates for the Air Service (heavier-than-air) have been enlisted up to 6 during the past week. More are expected the coming week, as noncommissioned officers have been detailed in the city for this purpose.

Captain Harvey and Lieut. Gaffney, members of the 13th Squadron, who have been at Langley Field taking part in the maneuvers held at that place returned to their organization last week and are now on a cross country trip to El Paso, Texas. Lieut. Hinkle has also reported from Langley Field and is now back with the 13th Squadron. A royal welcome was accorded them by their brother officers.

A polo game played on October 11th between Kelly Field and the Field Artillery, 8th Corps Area, resulted in a victory for the latter team 6 to 4. Another game has been scheduled for the coming week, Kelly Field vs. Fort Sam Houston. On Sunday, October 23d, Kelly Field was defeated by a civilian team by the score of 7 to 3.

Captain Hayes as pilot and Major Brailsford as observer made a cross country flight to Ellington Field, one flight, 2 hours, 40 minutes, and returned in 2 hours and 10 minutes; total time 4 hours, 50 minutes.

Kelly Field, San Antonio, Texas, October 22, Cont'd.

During the past week the 2nd Group (Bombardment) carried on the following training and operations: Practice, 1200 minutes; Test, 255 minutes; Solo, 6,335 minutes; Dual Instruction, 1,435 minutes; total time flown 153 hours, 45 minutes.

A Halloween costume ball will be given by the enlisted men of this station on the evening of October 25, 1921.

A communication was received from the Adjutant of the 8th Corps Area to the effect that the Secretary of the Scottish Rite of Free Masonry, San Antonio, Tex., advises that their semi-annual convention is to be held at San Antonio, Texas, October 24, 25, 26 and 27, at which time certain officers and men have been elected to receive Masonic Degrees. Applications for leave and furlough from those interested, where their services can be spared, will be granted by the proper commanding officers for this purpose.

Leave of absence for thirty days has been granted 1st Lieut. John A. Laird, Jr., Air Service, effective on or about October 24, 1921.

First Lieut. Byron E. Gates, Air Service, reported to this station in accordance with War Department orders, and was assigned to the 3rd Group (Attack) for duty.

Leave of absence for ten days has been granted to 1st Lieut. Thomas L. Gilbert, Air Service, and a leave of 5 days to Captain George P. Johnston.

Hqrs. 5th Group (Obs.) Luke Field, H.T., October 10.

On Monday and Tuesday four interesting lectures on "Field Artillery Missions" were delivered by Captain Vesley, 11th Field Artillery Brigade, to the entire commissioned personnel of the 5th Group. Every phase of artillery firing was comprehensively covered and clearly illustrated by radio - blackboard demonstrations where the radio represented the airplane and the blackboard the battery commander. The methods of firing to be employed against all conceivable types of targets were covered fully and cases were cited where certain methods would apply favorably locally in conjunction with air observation. Problems involving the employment of battery salvos were "flown" from the initial checking in through zone fire. To the officers who were already familiar with similar problems, the lectures proved invaluable, while to those who only had a hazy idea of such observation an excellent foundation was laid, which will be of material benefit in further training.

A fast and furious boxing smoker was staged last Wednesday in the Luke Field Service Club, which provided enough thrills for everyone present. All bouts were good and well fought and the fans went home happy.

Flying activities consisted of test flights in preparation for the various missions the 5th Group has been directed to perform during the ensuing week.

Hqrs. Det., Fourth Group (Obs.), Paranaque Beach, Manila, P.I., Sept. 17, 1921.

Due to the curtailment of gasoline in the Philippine Department, the Headquarters Detachment, Fourth Group (Obs.) has, through the courtesy of the Commanding Officer of Camp Nichols, Rezal, P. I., come into possession of a team of mules and an Escort wagon. This animal-drawn transportation is the sole means for travel in the Detachment. Private Kowzio, under whose guiding hand this section of the Transportation Department wends its way to Manila and return daily, furnishes the Detachment with Rations and Troop Transportation and acts in the capacity of Mail Orderly. The only Motor Transportation at this station at present is the Motor Ambulance, and two Motorcycles, kept in readiness in case of emergency.

The Department Commander has authorized the reserve use of one motorcycle by the Department Air Officer, as soon as this motorcycle can be furnished from Clark Field. It will be kept at the Quartermaster Garage and used only for emergency cases.

The lack of transportation facilities has necessitated the quartering of the following personnel in the City of Manila: Sgt. Minor, Sgt. Horn, Staff Sgt. Van der Zee, Pvt. Aspy, Pvt. Parent and Pvt. Foss. This personnel, except for Private Parent (on speed boat) is on duty in the Office of the Air Officer.

Hqrs. Det., Fourth Group (obs.), Paranaque Beach, Manila, P.I., Sept. 17, Cont'd.

By the employment of civilian Filipino clerks at from \$20.00 to \$65 gold, a month, a considerable reduction in the enlisted personnel has been effected in the office of the Air Officer. This is an economy to the Government when the pay allowances of Sergeants is considered in proportion to the small pay necessary to get Filipinos.

There is a tent under construction at the Beach for the Commanding Officer of this Detachment. This will enable him to more properly supervise the discipline of the men of the Detachment. As there is only one Officer on duty here, he acts in the capacity of permanent Officer of the Day.

Kindley Field, Port Mills, P. I., Sept. 17, 1921.

The basketball league closes next week with the 17th Balloon Company in the lead. Monday, Tuesday, and Wednesday will no doubt tell the tale. The 17th Balloon Company will play a series of five games with the 20th Company C.A.C. for the Championship of Corregidor.

All operations at this field have again ceased temporarily and all the available enlisted personnel are being utilized by the Air Service Supply Department.

Due to very heavy seas, operations have been cut to a minimum. Although there were many good flying days during the past week, the surf has been too high to launch any planes.

John B. Patrick 1st Lieut., Air Service, of Department Headquarters, visited this station Friday, and Saturday on official business.

Seven of the enlisted personnel of this squadron departed from this field on the 15th for Manila, from whence they will sail for the U.S. aboard the U.S.A.T. "Thomas".

Clark Field, Pampanga, P. I., Sept. 17, 1921.

Training operations here have progressed rapidly and pilots are regaining some of the old confidence which has lain dormant for a past period of administrative clean ups, reorganizations, etc. Feed pawls springs look more like Lewis Machine Gun parts than fishhooks, and memories of what make the planes go up are being fast revived. The day is looked forward to when the present ground and flying refresher course will have been completed and maneuvers may be engaged in as a test of the organizations efficiency.

On Monday, Sept. 12, 1921, the first bombing formation of the course was flown, Major Gilkeson, the new Commanding Officer, acting as Flight Commander. The flight expectantly awaited the take off to determine what sort of a pilot the Major was going to prove himself, for some had heard and remarked on the modest opinions voiced and his reticence. The flight came to the conclusion, after a long cross country over "Bundocs" and mountains and up and down the valley, that the Major is a flyer of considerable ability.

The course for pilots and enlisted observer students, of whom there are four, was started on Monday. This course involves over 150 hours in various ground and flying subjects. In conclusion, exercises have been planned with the 9th Cavalry, now at Stotsenburg, and the 24th Field Artillery. It is believed that, after completion of training, all pilots will be as near proficient in all duties devolving upon them, as available facilities will permit. 1st Lieut. Phillips, Cav., and 1st Lt. O. W. Martin, F.A., have been detailed to take the course. These officers, in addition to taking Air Service instruction, will instruct our pilots and enlisted students in the tactical employment of their respective branches, which will greatly assist in making future cooperative exercises successful.

On Friday, Sept. 16th, a five-plane formation was dispatched on a reconnaissance mission over North Manila, Taliaban River and Guiguigan. Certain reports were required of the flight regarding assumed prior enemy activity and the results as a first mission were gratifying. Radio was prevented from 100% efficient operation by Camp Stotsenburg interference, which drowns all other stations out of the air.

The fact that all planes flown at this station are equipped with full war equipment lends an atmosphere of real warfare to flying. With the heavy load imposed, however, there is not the kick in handling the old D.H., that one used to get when travelling stripped.

Clark Field, Pampanga, P. I., Sept. 17, 1921, Cont'd.

Lts. Pardy, Sweeley, Webber and Johnson performed some interesting experimental flying test work during the week to determine and establish for future pilot refresher tests certain standards of time and proficiency. Part one, which is all that has been completed so far, consisted of parts as outlined:

- a. From x, take off into wind, climb in a normal angle, spiral, gaining 1000 feet, to position over x.
- b. Make two figure eights with intersection of loops over x, gaining 1500 feet.
- c. Make two consecutive circles to the right over x and two similar circles to the left gaining 500 ft.
- d. At an altitude of 3000 feet fully throttle motor (assume dead stick), and land for the circle, endeavoring to stop plane as near x as possible.

All points considered, the best time over all and for each point, was made by Lt. Edwin Johnson, in approximately $2\frac{1}{2}$ minutes. He landed within 30 feet of the x, made smooth take off and landing, turns and eights were well placed over x, banks and turns consistent.

The Field is well equipped with officer personnel, which embraces among the pilots, Major Gilkeson, 1st Lt. Edwin Johnson, 1st Lt. Henry Riley, 1st Lt. Leland C. Hurd, all Air Service. Major Gilkeson was the first Commandant of Princeton Ground School, and is responsible in a large measure for laying the foundation for the successful institution it proved to be. Lt. Johnson was an experimental test pilot at McCook Field for over two and one-half years. During that period he flew over sixteen pursuit types and fifteen miscellaneous types. It is remarkable the Lieutenant is still here to tell of it. Lt. Hurd was OIC Final Tests and Acceptance at Dallas Aviation Repair Depot for about the same length of time, and is well equipped to handle local Engineering matters. Lt. Riley is here to tell of over five months' service over the lines near the Toul and Belrain Sectors. While he has no Fritzes to his official credit, Riley seems to be an ace (unofficially). Captain Lloyd N. Keesling is at present Adjutant. Captain Keesling was formerly attached to the Training Division, Flying Branch, of the office of the Chief of Air Service.

Crissy Field, San Francisco, Calif., Oct. 23.

With the arrival this week of the 91st Squadron (Obs.) and about 150 men attached from the 24th and 14th Balloon Companies, Crissy Field is taking on a new appearance. A great deal of work is being done on the post, leveling off the lawn-sites, fixing up the flying field, and putting on general finishing touches.

A "Smoker" was staged at the Officers' Club of the Presidio in honor of the new arrivals among the officers at the Presidio and the 91st Squadron, from forestry patrol in Oregon and Washington, for permanent duty here. About 200 officers were present and the affair was enjoyed by all. Vocal selections and motion picture comedies were the features of the evening.

Major George H. Brett, formerly on duty in the Office of the Chief of Air Service, assumed command of Crissy Field on October 17th.

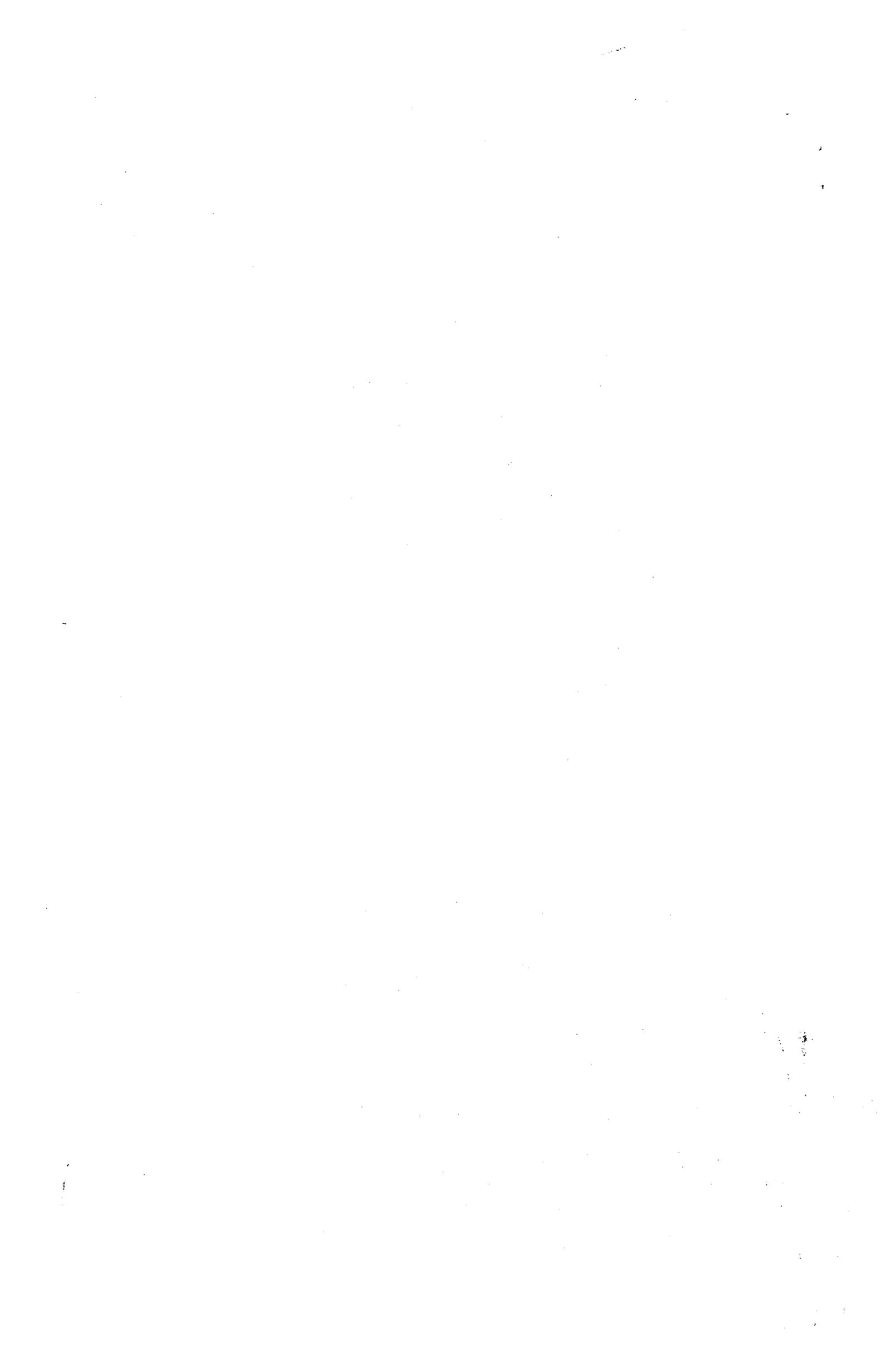
Major H. H. Arnold, 9th Corps Area Officer, is on a 30-day leave of absence.

A training schedule for four reserve squadrons, with full war strength of officers and enlisted men, is being worked out at this post. Most of the members of this organization will be drawn from around San Francisco. One squadron meets at this post every Monday night, and considerable interest in the project is being aroused.

The 91st Squadron is rapidly becoming acclimated to its new location. Most of the Squadron Departments are being incorporated with those of the post, and the usual routine is keeping everyone busy.

The famous 91st Baseball team, which won 11 out of 15 games against the best local teams in Western Oregon last summer, is working out again and expects to clash with the Presidio team in the near future.

Branch Intelligence Office No. 3, with Lieut. A.G. Liggett, A.S., in command, was organized at this station on October 13th, with a personnel of five enlisted men. This office during the past week has been getting a line on landing fields in the 9th Corps Area, especially between San Francisco and Salt Lake City. The work is an innovation in the Air Service and should prove of great value.



The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE NOVEMBER 26, 1921.

MY THREE YEARS IN THE ARMY AIR SERVICE

Of the 43 cadets now on duty at Mather Field, Mills, California, many are doing more than merely learning to fly, and are vitally interested in following the Army as a career. A particularly interesting statement covering his experience in the Air Service is given by Cadet James C. Ayers, which shows how, roused and urged on by ambition, he has gained more in three years in the Army than he believes would have been possible in double that number of years in the openings available to him in civil life. The statement of Cadet Ayers is as follows:

The following are a few briefs taken from my diary, which I kept during my travels on and off duty as a soldier in the best branch of the United States Army. I am making this as brief as possible and adding a small history of my life in an endeavor to point out to the young man desirous of becoming an applicant for any branch of the Regular Army what wonderful opportunities are offered by Uncle Sam, especially in the Air Service, to the poor boy who has always been handicapped and deprived of or, perhaps, passed up an opportunity to gain an education or learn a trade which would help him to be independent and a useful citizen in the community in which he lives.

Practically my entire life, from the time I was old enough to be able to work, was spent in a factory and on a railroad, where skilled laborers are comparatively unknown factors. Due to my father's ill health, which prevented him from working regularly, I was compelled to devote all my time to work, finding very little time for study or recreation. On the death of my mother, the family was broken up, and I decided to see some of the world and try to gain an education, which I readily saw was essential in order to demand a fair salary, knowing that an unskilled man is never in very great demand. So I started on an unknown career from a small city in New York State and crossed the continent. While in Los Angeles I accidentally noticed a sign, attractively arranged near a small airplane located in a park, which read something similar to all the recruiting advertisements - "JOIN THE ARMY AND SEE THE WORLD. EARN WHILE YOU LEARN. LEARN TO FLY, etc."

I had always been very much interested in the aviation game, but the fact that I had money in my pocket, wore good clothes, and jobs at that time for unskilled men were plentiful, caused me to hesitate for a few days before I finally decided to take a chance for three years, and it was the first and best chance I had ever taken. I was immediately sent to a beautiful Southern California Air Service camp, where I began my new duties for Uncle Sam as a buck private in the rear ranks for thirty per and all expenses. I readily saw, however, the advantages that could be obtained by any ambitious recruit who wanted to get the most out of the Army that would be a benefit to him when he returned to civil life.

There was at this post, as at other posts throughout the Army, a very good vocational and educational school, where all soldiers are given an opportunity to gain an education that would cost them on the outside approximately one thousand dollars. I decided to take a course in mathematics and stenography, which subjects I completed and passed satisfactorily in about fifteen months. I have seen young men enter these schools who could not read or write their own names legibly and, in from one to three years, emerge from their classes excellent scholars. Some became expert electricians, some moulders, woodworkers, etc. In addition, they have traveled more than thirteen thousand miles during their three years in the service.

Three weeks after I was accepted for enlistment I was promoted to the grade of Sergeant, and shortly afterwards received orders to sail for the Philippine Islands via Vladivostok, Russia, and Hong Kong, China. Just before we sailed I was again promoted - to the grade of Sergeant, 1st Class, which pays \$51.00 per month, with \$25.00 additional for flying status, the latter allowance being

given a certain percentage of the enlisted personnel who actually participate in regular and frequent flights.

On our voyage to the Philippines and return we were given an opportunity to pay a four days' visit at each port of call, which included Honolulu, H.T.; Vladivostok, Russia; Hong Kong, China; Nagasaki, Japan; and Manila, P.I., the latter city being near the place where we were to make our home during our tour of duty in the Islands. Here I learned considerable about foreign history, and found some of the best equipped and most efficiently operated educational and vocational schools in the Army, maintained principally for soldiers in order to enable them to obtain an education during their tour of foreign service.

I was stationed on that picturesque and beautiful island of Corregidor, one of the group situated about thirty miles from the City of Manila, in the center of the historic and famous Manila Bay, known as the Gibraltar of the Orient. I was appointed Sergeant Major of the Squadron, which gave me a good opportunity to learn Army administration, an essential factor for a successful career as a soldier.

During my stay of fourteen months in the Orient, I was given a ten-day hunting pass to hunt wild hogs and monkeys on one of the largest islands of the group, which was quite a novel experience and a great sport. In addition to this, each soldier who has a good record is allowed thirty days every year to visit China, the Southern Islands or, in fact, any place of interest in the Orient. I decided to visit the mountains of Baguio, P.I., situated on one of the wealthiest islands in the group. Baguio is about eight thousand feet above sea level, and the country surrounding it is comparable to the Alps in Switzerland. The beautiful forests of pine and redwood, mingled with the semi-tropical trees and flowers, and the Oriental song birds all combine in making this wonderful vacation land the dream spot of the world for health and recreation. And the government gives the soldier the benefit of all this free of charge.

I took advantage of the excellent vocational and educational schools maintained the year round by the government, studied during most of my spare time, and requested to be given a chance to pass the Cadet examination for a reserve commission, which is held every six months, all applicants being required to possess a high school education or its equivalent. I successfully passed the examination and shortly thereafter received orders to report to a training camp for aviators in the States. On my arrival at the training school I was appointed a flying cadet, with a salary of \$75.00 per month and \$1.00 per day for rations. I was given four months' primary training in motors, radio, navigation, and Army administration, all of which, with fifty hours' actual air work, qualifies the student as a pilot. This alone would cost approximately six hundred dollars in a civilian school.

After successfully completing my primary training, I was ordered to an advanced pilots' school, where larger planes are used and where cadets are given actual training in the various administrative departments, learning from practical work the duties of a commissioned officer in the Air Service, or any other branch of the Army.

At present, in addition to my regular training for a reserve commission, I am attending a night school in a small town near the post, preparing myself as an applicant for a Regular Army Commission or, in the event I do not pass the examination and desire to stay in the Army, I am sure I would soon be appointed to the grade of Master Sergeant, which is the highest enlisted rank that can be held. All this was obtained in three short and pleasant years, besides traveling approximately fourteen thousand miles by water, four thousand miles by rail, five thousand miles by air, and several hundred miles by motor. I also enjoyed the pleasure of the numerous athletic activities maintained in the Army, especially the swimming pools, where I learned how to swim. These athletic activities enabled me to keep myself in fine physical condition at all times.

I could write a very large volume on the many other advantages and possibilities that can be gained out of a 3-year enlistment by any ambitious and energetic young man who finds it very difficult to get a start in civil life on a job held today by the average unskilled man, with the high cost of living, etc., to contend with. I saved fifty dollars each month, enjoyed myself, and gained a broad knowledge of the world and its inhabitants.

But remember, dear reader, you can't get something for nothing in any kind of business. I gave my best efforts, devoted lots of long, hard days to my duties, tried to set an example to all my comrades as a model soldier at all times, and always worked for the best interests of the service. As a noncommissioned officer I devoted my time assisting my superior officers in instructing the men and maintaining morale and efficiency throughout the command in which I served.

THE PULITZER RACE

The principal event on the first day of the Aero Congress held at Omaha Nebraska, for three days commencing November 3d, was the Aerial Derby, which was won by the veteran flyer Bert Acosta. Driving a Curtiss Navy racer of triplane construction, powered with a 400 h.p. C.D.-12 motor, he circled the course of 150 miles at the rate of 176.7 miles an hour, his time being 52 minutes and 9 seconds, beating any previous similar performance made here or abroad in competition. Clarence Coombs of Houston, Texas, in a plane called the Cactus Kitten, won second place, his time being 54 minutes, 7-3/5 seconds, average speed 170 m.p.h. This machine, originally designed as a monoplane, was given triplane wings to cut down its landing speed. Obviously, therefore, the machine in its original design was the fastest plane in the world. The Thomas Morse entry, piloted by Lieut. John A. Macready, Air Service, the altitude record-holder, was third, in 57 minutes, 27-3/5 seconds, while Lloyd W. Bertaud of New York, piloting a Balilla Scout, was fourth. The course was triangular, with Omaha and Carson, Neb., and Loveland, Iowa, across the Missouri River, for its corners, a lap of thirty miles, around which the flyers raced five times.

Lieut.-Colonel Harold E. Hartney, Executive Secretary of the Aero Club of America, was scheduled to follow Coombs, but trouble with the gasoline pump of his Thomas Morse MB 7 monoplane delayed his start. After some strenuous efforts on the part of his mechanics, and with but two minutes to spare, he crossed the starting line. He should have made the first lap in approximately ten minutes, but when he was 20 minutes overdue and airplanes were being made ready to go in search of him, a telephone message was received from a farmer to the effect that an airplane had crashed near his home and that the pilot was injured. Assistance from the nearest relief station was rushed to the injured pilot, who was carried to a farmhouse and treated by a physician. He was found to be severely injured, having suffered a fracture of the hip and internal injuries. According to the Omaha Hospital surgeons, Col. Hartney is not in danger and he will recover, although this may take several months. Souvenir hunters from a nearby town rushed to the scene of the wreck, and a match carelessly dropped into the wrecked airplane caused it to ignite and burn up completely.

As a result of his victory, Acosta was awarded the trophy cup and a cash prize of \$3,000.

A tragic incident during the Meet was the death of Harry Eibe, the dare-devil parachute jumper. Eibe had leaped from a plane at an altitude of several thousand feet, and landed in the river. Unfortunately, he was unable to swim, and he sank before his rescue could be effected.

Eddie Stinson of San Antonio, Texas, thrilled the crowds, just after the race, with stunt flying. Piloting a Laird Swallow, he negotiated one of the shortest takeoffs of the day and climbing rapidly, the nose pointed at an angle of about 45 degrees, immediately went into a series of loops, wing overs and tail spins. For several miles he flew his machine upside down.

The second day of the Meet was featured by a 90-mile free-for-all race in the 90 m.p.h. class, which was won by Charles "Casey" Jones, of New York, in a Curtiss C-6 Oriole, his time being 55 minutes and 5 seconds; also a 90-mile free-for-all race in the 75 m.p.h. class, which was won by F.A. Donaldson of Iowa in an OX5 Curtiss Oriole, time 1 hour, 9 minutes, 3-3/5 seconds.

Performances by the Sport-Farman biplane, owned by Wallace Kellett of Philadelphia, was by far the best stunt feature of the day. Horschem, the pilot, thrilled the spectators with his acrobatic work, flying his plane upside down for a considerable part of the time.

The closing day of the Meet on Saturday was full of incidents, one parachute jumper being slightly hurt, and four pilots being compelled to make forced landings, but without injury. The principal event was the Larsen contest, the conditions of which were that the plane entered must have a speed greater than sixty miles per hour and that it must carry a load of at least 400 pounds dead weight over a distance of approximately 250 miles. After crossing the finishing line, the entrants were to continue on their course and climb to an altitude of 5,000 feet, marked by a kite balloon, and then return to the field and land in the space allotted to them. Eighteen planes were entered for this contest. Although two JL-6 monoplanes made faster time, computation of results under the efficiency

formula governing the contest showed E.F. White of New York, pilot of the S.V.A. Ansaldo plane, owned by C.B. Wrightsman of Tulsa, Oklahoma, to be the winner of the event. White's plane scored 4,671 points in efficiency, according to technical figures. His time for the distance was 2 hours, 34 minutes and 56 seconds, and his average speed was 95.17 miles an hour, thereby winning the Larsen Trophy, designed by Gutzon Borglum, and a cash prize of \$3,000. Max Goodnough, piloting a JL-6 Larsen Monoplane, was second, with an efficiency score of 4,640 points, his time for the 240 miles being 2 hours, 31 minutes and 42 seconds, average speed 97.21 miles an hour. Eddie Stinson, piloting another J.L.-6, won third place (4212 points) although his time for the 240 miles was the fastest of the field, his scoring showing 2 hours, 30 minutes and 59 seconds, with an average speed of 97.66 miles an hour. The two JL-6 monoplanes and the S.V.A. were the only machines to complete the eight laps. Another JL-6, piloted by B.H. Pearson, with Mr. Larsen and several others as passengers, was forced to land due to engine trouble on the north leg of the triangular course in the sixth lap.

The last event of the Omaha Meet was an acrobatic contest, points being given for Immelman turns, barrel rolls, falling leaves, loops, vertical reverse-ments and tail spins. No stunting was allowed under 750 feet altitude. The contest was won by N.D. Trindler on a Longren A.K. biplane. Dean Smith finished second and Eddie Dietz took third place.

Over 500 persons attended the Aviators' Ball, held Saturday evening, November 5th, at the Auditorium in Omaha. Eddie Rickenbacker, the famous war pilot, led the grand march. The auditorium was artistically decorated for the occasions, hundreds of colored balloons being in evidence.

Financially, the Omaha Aero Congress was not a successful venture, there being a considerable deficit, partly due to the fact that thousands of spectators gained access to the field without paying admission fee, due to the inadequate manner in which the approaches to the flying field were guarded.

FLYING FIELD AT HONOLULU PARK

In a previous issue of the NEWS LETTER mention was made of the fact that there was a possibility that Honolulu may have a municipal flying field in the near future if arrangements can be effected whereby Honolulu Park may be extended to embrace a sufficient area for taking off and landing of airplanes.

Our attention has been called to the fact that there is no municipal flying field at Honolulu, and that Honolulu Park is located at Hilo, some 210 miles distant from Honolulu. According to latest information obtainable, the matter of the construction of a landing field at Honolulu Park has been placed before the Board of Supervisors of the County of Hawaii at their regular monthly session, and it was urged that the supervisors proceed as soon as practicable to prepare a firm and level strip of land, 600 yards long by 200 yards wide in the direction of the prevailing wind. Funds required for the construction and upkeep of this landing field will, in the event the project is approved, be appropriated from the general funds of the County of Hawaii.

A GOOD EXAMPLE FOR OTHERS TO FOLLOW

Evincing their interest in aeronautics, the Peerless Manufacturing Company of Norristown, Pa., made an official request for information on the markings for Norristown, stating that they will be only too glad to place these markings on the roofs of their buildings.

FLYING IN THE PHILIPPINES

Commenting on the varied character of the country encountered by the airplane pilot on duty in the Philippines, the Commanding Officer of Clark Field, Camp Stotsenburg, Pampanga, P.I., states that flying throughout the islands is hazardous away from the airdromes. "The abundance of rice paddies, the uneven and heavily overgrown contour, now gently rolling, then abruptly mountainous, combine in presenting but few routes on which emergency fields are to be found. While in most rice sections in the States no very great hazard is encountered through emergency landings in the paddies, the local paddies are deeply terraced

to overcome the unevenness of terrain. So far there is no record of a forced landing here in a cane field, but it is believed the heavy stalks would not prove an easier place to set the plane down than a paddy. While on the subject of the islands it is surprising to note the seemingly numerous localities which are little, if at all, known to white men. The peak of Mt. Pinatuba, approximately 12 miles airline from Clark Field, is said to be inaccessible, the sides of the mountain being sheer or extremely precipitate and the approaches heavily obstructed by tropical vegetation. It is also said that a tribe of Moro headhunters infest the region, which does not add to our enthusiasm for exploring too far afield in that direction."

FOREST PATROL OPERATIONS FROM MARCH FIELD

Forest fire patrols from March Field started on August 21, 1921. Two patrols were flown. The circle patrol, leaving the field daily, covers 185 miles and takes in San Gabriel Canyon on the Northwest, Baldwin Lake on the east, and San Jacinto Mountain on the southeast. The Santa Barbara Patrol, leaving the field one day and returning the next, covers 215 miles one way. Fifty fires have been reported since the patrol started. The Air Service report was the first received on twelve of this number. On nine of the fifty the location was 100% efficient, twenty were 80% efficient, and two were missed entirely. The accuracy of the remainder cannot be determined, as they were unconfirmed at the time bi-monthly reports were submitted. Ninety-five percent of the fires were reported within ten minutes of the time of discovery. The radio efficiency for the season was 95%, i. e., the ships were in communication with the ground 95% of their time in the air. The circle patrol was discontinued on October 27th, while the Santa Barbara patrol will be flown until November 15th.

AIR TRANSPORT SUBSIDY IN ENGLAND

A recent article in the London TIMES states that four airplane transport schemes have now been officially approved under the revised scale of subsidies which the Air Ministry is to shortly introduce on the termination of the present temporary arrangement. Two of the schemes entail the continuance between London and Paris of the existing Instone and Handley-Page services; the third - a new London to Paris "express" service - is to be conducted with DeHaviland monoplanes by an organization which will have at its head Col. Frank Searles, who was Managing Director of the late "Airco" line during its progressive phase of operation in the summer of 1920. His operation of the new DeHaviland machines, which carry a pilot and 10 passengers at more than 100 miles an hour with the power of one 450 h.p. Napier "Lion" motor, is awaited with much interest. The fourth British Air Service, which is said to have obtained approval, is one for a daily service between London and Brussels. At present a service is operated by the Belgian State-aided S.N.E.A.T. Company; but the summer's traffic has been so encouraging developing goods transit as well as that for passengers and mails, that a British company with the latest type of machines should find a field for their useful work. The hope is entertained that by next Spring there will be a British service flying between London and Amsterdam, a route very important because of the Northern Europe connections which it opens up. At present it is monopolized by the State-assisted Royal Air line, which has had a most encouraging season and is well supported by its government in its plans for next year, which include the employment of larger Fokker monoplanes seating ten passengers. The machines used with success this summer accommodate five people in their saloons.

The Air Service from London to Paris is not self-supporting yet, but the prospects are good, and it is believed that the traffic will be sufficient to support at least one British Company.

Flying in fog is the greatest handicap to keeping a regular schedule, but this has been partially overcome by radio piloting. If they can see the ground from 200 feet, planes can be brought in safely in a fog. Experiments are now being continued and they have had at least one plane approach in a fog and have informed the pilot by radio when to cut off his engine and come down. The landing in this case was successfully made, but there is still much to do in experimental work in this line.

FLYING ACROSS THE ANDES MOUNTAINS

The "South Pacific Mail" records the recent crossing of the Andes by the Chilean aviator Figueroa, who thereby fulfilled a desire which he cherished for many years. His intention was to fly from Santiago to Mendoza and return and land at Vina del Mar in one flight, but a misfortune prevented him from fulfilling the complete project.

Having obtained permission from the civil and military authorities, and carrying a sack containing letters, newspapers, etc., constituting the first aerial mail between Chile and Argentine, Figueroa left the School of Aviation at 6:23 a.m., and gaining altitude rapidly disappeared over the highest part of the Andes. At 7:30 a.m., he had safely crossed the formidable barrier of the Cordillera and had arrived over the Argentine city of Mendoza.

He made several circles over the town and dropped the bag of mail on to the main square. He then attempted to regain altitude, in order to return to Chile without landing. To his dismay, however, at that moment motor trouble developed, a break in the motor disconnecting the flow of oil and causing the motor to become overheated. In haste the aviator looked for a landing place and was fortunate in finding a suitable ground at Pedregal, a short distance from Mendoza, where he brought his machine to earth without mishap. He then telegraphed for a mechanic to be sent at once, in order that the damage might be repaired and enable him to return in his machine to Chile. The mechanic was sent at once, but it was found that the motor was completely burnt out, rendering the machine useless and necessitating its return by train.

There was great enthusiasm as soon as the news of the successful flight was heard, and telegrams of congratulation began to pour in on the fortunate aviator and the Director of the School of Aviation, General Contreras, both from the Chilean and the Argentine side.

Clodomiro Figueroa is a civilian aviator, a pioneer of aviation in South America, who has always had the greatest difficulty in following the profession to which he had dedicated himself, and only recently obtained a post at the School of Military Aviation. He has always, however, pursued the science of aviation with the greatest intrepidity, self-sacrifice and enthusiasm. He studied at the School of Aviation in Paris at his own expense, and brought back with him a Bleriot machine with a 50 h.p. Gnome motor. With this machine, on March 25, 1913, he made the flight from Batauco to the Coast, over Vina del Mar and Valparaiso, and arrived at Sansino in the sight of thousands of enthusiastic spectators, some three hours after he had started on his uninterrupted flight. He arrived all covered with oil and with bloodshot eyes, unprotected by any sort of glasses, but he had beaten all records for South America for both distance, speed and time of flight.

Already he was filled with the ardent desire to accomplish the flight across the Andes, and made different public flights in various parts of the country with the object of raising funds to meet the expense of the purchase of a machine sufficiently powerful to accomplish the desired feat. Finally a subscription with this object in view was started in Valparaiso, and proved a great success. A machine of 160 h.p. was ordered from France, but it was found that it would need twice the sum which had been collected by his flights and the public subscription to purchase a machine of the power which he required. A machine of 80 h.p. was therefore bought and christened the "Valparaiso". In this machine he made several tentative flights over the Cordillera, and on December 14, 1913, he made the great attempt to cross the Andes to the Argentine. He then found, however, that it was impossible to cross the Andes in a machine of so little power, and the attempt almost cost him his life. A public subscription was then raised throughout the whole country, and a machine, after the desires of Figueroa, was ordered from France. The European war, however, intervened, and rendered it impossible for the machine to leave France.

While Figueroa was patiently waiting for the arrival of his cherished machine, the laurels for being the first aviator to conquer the Andes were snatched from his grasp, and other aviators flew the Andes.

First came Lieutenant Godoy, who flew from the Santiago airdrome of "El Bosque" to Mendoza in a 110 h.p. Bristol. Then came Lieutenant Cortinez, who made the double journey, landing in Mendoza and then returning to Santiago. Later the Italian aviator Locatelli flew from Mendoza to Santiago in an Italian "SVA" machine, from Santiago to Valparaiso, and from Vina del Mar to Buenos Aires,

Argentina, in a non-stop flight from the Pacific Ocean to the Atlantic Ocean. Afterwards, the French aviator Prieur flew over the Andes, lost his way, and was obliged to land near Ovalle, his machine being destroyed. The Argentine aviator Lieutenant Almonacid, made the same flight, landing, however, on the beach at Poblacion Vergara, Vina del Mar, where his machine was demolished by the waves.

The French Aviatrix, Mlle. Bolland, also flew across the Andes in a special altitude machine of 80 h.p. and landed in Santiago without difficulty. Lately, two young aviators of the Military School of Aviation, left Santiago secretly one morning and flew the Andes, landing in San Luis in the Argentine, but destroying their machine. This was the first crossing of the Chilean Andes with a passenger.

Thus already four Chileans, one Italian, a Frenchman and a French lady, and an Argentinian, eight aviators in all, had made the crossing. The enticing achievement also claimed its victims. Newbury met his death in the attempt, shortly after he had started on the adventuresome flight. The efforts of the three Argentine aviators Zanni, Parodi and Matienzo were fruitless, and the latter met his death in the snowy heights, his body and the machine being discovered only after months of search. The aviator Hearne also recently failed in his projected flight from Mendoza to Lima via Santiago.

A march was thus stolen on Figueroa, who in 1913 made several heroic attempts to conquer the Andean heights. At the same time the Argentine aviator, Fels, made several similar attempts at the same flight from the other side of the Andes, and speculation was rife as to which aviator would reap the glory of being the first to cross the Andes. In the years 1914 and 1915 Figueroa made several important flights in different parts of the republic, and at the end of the latter year took part in an aviation tournament with aviators from the School of Aviation, and Uruguayan and Argentine aviators, gaining first place in many of the tests. It was merely the want of a sufficiently powerful machine which prevented him from once more attempting the crossing of the Andes, and as soon as his desired machine, the "Parasol" had arrived, he got ready once more for the accomplishment of the feat, and succeeded in crossing the formidable barrier.

AVIATION MEET ON LAKE GARDA, ITALY

The International Aviation Meet for the Gabriele d'Annunzio Cup took place on Lake Garda, September 16 to 25, 1921. Cash prizes to the amount of Lire 100,000 were awarded in addition to the d'Annunzio Cup and cups offered by the Ministry of Industry and Commerce.

The race for speed airplanes took place on September 18th over a total distance of 200 km. The course was very irregular, taking in various points around the lake, and was made four times, each lap being fifty km. Three Italian Navy Pursuit Seaplanes, M-7 type, entered, all of them completing the total distance. The three competitors started simultaneously, and this race was a very exciting one. Lieut. Conti of the Navy won first place in an M-7 pursuit seaplane, equipped with Isotta-Fraschini V-6, 250 h.p. motor; time 1 hour, 2' 43" average speed 191.336 km. per hour. This pilot won by making a daring turn at the last buoy, as he and Merola were practically tied during the entire race. Lieuts. Merola and Vuan of the Navy won second and third places, respectively, the former's time being 1 hr. 2' 43-3/5" average speed 191.296 km., and the latter's time 1 hr. 5' 29", average speed 183.252 km. per hour. Merola made the fastest lap of the race, covering the 50 km. at an average speed of 195.355 km. per hour.

The race for seaplanes carrying a commercial load of 200 kg. took place on September 20th over a total distance of 200 km. This was over a different circuit from the race on Sept. 18th. Each lap was 100 km. Five seaplanes entered this race and four completed the total distance, an M-9 being forced to withdraw after 150 km. Conforti of the Navy in an S-13 (I.F., V-6, 250 h.p.) seaplane, won first place, time 1 hour, 2', 33-3/5", average speed 191.815 km. per hour; Falaschi of the Navy in an S-13 seaplane was second, time 1 hour, 4', 29-1/5", average speed 186.095 km. per hour, and Passaleva of the Navy was third in an M-9 (Fiat A-12 bis, 280 h.p.), time 1 hour, 4', 35-3/5", average speed 185.777 km. per hour.

The final race for the cups was a handicap affair over a distance of 180 km. (5 laps of 36 km. each). Merola of the Navy, in an M-7, who was the last to start,

as he was handicapped by 9 minutes, 19 seconds, was the first to arrive, winning in 54', 59-2/5". Six competitors entered this race and all completed the required distance.

On other days of the Meet contests were held in acrobacy and for speed over a nautical mile course. A total of 15 different seaplanes competed in the various races. No new types, especially constructed for the races, were presented.

Two gliders (fast sea-sleds) with air screws, equipped with I.F.V6, 250 h.p. engines, took part in special races held for them. The maximum speed developed by the faster of the two was about 85 km. per hour. Gliders of this type were used on Lake Garda during the war by the Italians for messenger service. The hostile lines crossed Lake Garda. According to a statement of the Chief of the Italian Naval Air Service, the Navy since the Armistice had carried out some experiments with gliders with the view to using them in off-shore defense, equipping them with machine guns, cannon, and possibly with torpedoes and large bombs. When equipped with large bombs, the pilot would jump with a life buoy before impact. All types that had been constructed in Italy were found absolutely unsatisfactory in the open sea on account of being too short to take the waves. For lack of available funds no new types along larger lines were built, and the experiments were discontinued. Two of the gliders were put into service by the Italian Navy along the Dalmatian Coast during the operations against d'Annunzio's forces, one of which was lost with the Naval Lieutenant-in-Charge. Their service was unsatisfactory.

AN ENJOYABLE BALLOON TRIP

Captain McFarland of the Balloon and Airship Division, McCook Field, Dayton, Ohio, relates a very interesting story of the balloon flight made recently by Lieut. Schneeberger, Mr. Corbett, Mr. Lewis and himself.

The balloon was inflated at McCook Field with gas furnished by the Dayton Oxygen Co., and the party started on their aerial journey at 9:46 Wednesday morning, October 19th. They arose to approximately 6,500 feet in ten minutes and traveled eastward at that height until they reached Columbus, where they encountered storm clouds and cold, wet atmosphere. This necessitated the party descending to a lower altitude until they reached the city of Newark, where they made a still greater drop until the balloon was about 200 feet from the earth and drifting slowly before a calm breeze. They were able to talk with people on the ground and wave to school children. Thus they soared along for many miles over beautiful little country hamlets and rolling hills garbed in their brilliant array of autumn colors.

About two o'clock in the afternoon rain began to fall which made the flight very disagreeable, and a landing was made near Cambridge, Ohio.

The balloon was packed and shipped back to Dayton, and the party returned by rail.

The balloon was equipped with wireless apparatus, and the party was able to catch messages from McCook Field and be entertained the while with phonograph selections sent to them by the wireless.

Captain McFarland says that one of the most pleasant features about balloon flying is the fact that the air is always calm, the balloon depending upon the wind for its propelling force.

AIRPLANE PHOTOGRAPHIC MAPS

The ENGINEERING NEWS RECORD for October 13th contains an illustrated article on the subject of aerial photographic mapping developed for municipal and other engineering services. This article deals with recent developments in aerial mapping cameras and the excellent utility of mosaic maps in commercial use, since they show in considerable detail the objects and localities photographed. Touching on the subject editorially, the ENGINEERING NEWS RECORD comments as follows:

Engineers with a vision cannot fail to see in the development of the airplane photographic map a new tool with a wide variety of engineering uses. The mosaic map, however, has been so generally identified with war-time operations that its fields of application in civilian practice is just beginning to receive recognition. Both in the technique of aerial map-making and in the equipment employed therefor substantial progress has been made since the signing of the Armistice. Private enterprise, aided by governmental cooperation, has taken the development of the art where the army left it and carried it forward to a point of commercial practicability.

A number of cities today are using or planning to use aerial photographic maps in connection with such a wide range of engineering studies as city planning, traffic control, water-front improvements, transit facilities, location of new schools, street widening and fire protection. These, of course, are distinctly municipal uses, but in addition such maps offer possibilities in the preliminary investigation of watersheds, hydro-electric developments, highway, railroad or canal location, forest surveys, etc. Comparatively few engineers have sensed the application of the airplane map to the solution of many problems upon which they are now engaged. With such innovations as the automatic timing of exposures to cover the proper ground area and at the same time secure the necessary overlap for the accurate fitting together of individual negatives, lenses especially adapted to this type of work, development of the technique covering such details as the best height from which to take pictures for specific purposes, speed of the airplane, and the maintenance of a level flight to insure vertically in the view, the maps now being produced attain a high degree of accuracy and a wealth of valuable detail. Among the points worth considering in connection with airplane photography in engineering work are the speed with which such maps may be produced, their ability to cover territory inaccessible on foot, their comparatively low cost, and the impossibility of omitting any feature of the area photographed - the detail, of course, depending upon the altitude and the characteristics of the lens employed. Most of our larger cities are concerned with the problem of handling the ever-increasing volume of street traffic. In this field, alone, the airplane photograph offers extremely interesting possibilities.

The advent of the mosaic map, of course, does not mean that such time-tried tools as the transit and stadia or the plane-table are to be discarded. They have now, and always will have, a distinct field of usefulness. Airplane mapping, however, has already established itself as a practical means of securing quickly, cheaply, and accurately information which can be put to a wide variety of uses in engineering practice. Engineers who think of surveys only in terms of the old field tools may soon find themselves out of date.

AERONAUTICAL NEWS FROM FOREIGN COUNTRIES

Italy.

A regular aerial service has been established by the Colonial Government of Lybia between the cities of Tripoli and Homs. The airplanes used belong to the Army and are part of the aerial force stationed in the Colony. Airplanes of the Caproni 450 type are used for transporting passengers and the S.V.A. 10 type are used for transporting mail. The distance between these two cities is only 100 kilometers.

The safety of commercial aviation in Italy is illustrated by the official report of the activities of the civil aerial transportation company (Societa Anonima Imprese Aeree) covering the first year of its operation from June 1, 1920, to June 1, 1921. A total of 996.11 hours were flown over a distance of approximately 100,000 kilometers, 3,351 passengers being carried without accident. This line did not operate during the months of December and January. The greatest number of passengers (591) were carried in July, 1920, followed by September with 520, and the lowest number carried during any month (138) was in March, 1921. Passenger traffic was heaviest during the summer months.

Canada.

A draft plan for the training of university cadets by the Canadian Air Force, and by that means providing a reserve of flyers and aeronautical mechanics in case of need, has been submitted by the Air Board to the various heads of universities in Canada for consideration and comment. The plan includes the giving of a three months' course for three consecutive years to university students who are desirous of studying aeronautical engineering where they can secure first-hand information. The number taking the first course, which is proposed for opening about May 1, 1922, will be limited to 30. Students must be under 21 years and unmarried, and physically fit for military service.

Canada (Cont'd)

At the request of the Department of Militia and Defence, a complete aerial survey has been made of the Petawawa Military Reserve, comprising approximately 240 square miles. Photographs were taken from a Bristol fighter at an altitude of 8,000 feet, giving a mosaic 1/8000, which when completed and mounted on beaver board was twelve by fifteen feet in size. It was afterward reduced by the Department of Militia and Defence to a scale of 1/20,000. The photographs turned out remarkably well and all concerned expressed satisfaction, as full details were given in all sections of the photographs to enable an accurate map to be made. Six hundred feet of film, giving approximately 600 exposures, and about fifteen actual flying hours were required for the purpose of obtaining the pictures.

Honduras.

According to the November issue of the "Pan American Union", two young Hondurians have been sent to the United States by the Government to study aviation. An aviation school is in course of construction and will soon be opened. The Minister of War and Navy, who believes that aviation should be introduced into Honduras for official and commercial purposes, suggested that the officers and men connected with the Department of War and Navy give one day's salary to the aviation committee as a contribution to flying machines, and his suggestion was received with great enthusiasm. This means thousands of dollars towards the aviation fund.

Argentina.

The Argentine aviator Senor Jose I. Cigorraga stopped in Asuncion on his way from Formosa, Argentina, about 100 miles distant. He remained in Asuncion two days, making flights with passengers, before beginning the return journey to Formosa.

England.

It is now officially announced that from February 1, 1922, the Irak (Mesopotamia) Group of the Royal Air Force, which is at present part of the Middle East Area, will be separated from that area, and will become an independent command. The Officer Commanding Irak Group will be directly responsible to the Air Ministry for the command and administration of the Air Force units located in that country.

France.

For some time it has been the intention of the Franco-Roumanian Aviation Co., who operate the Paris-Strasburg-Prague-Warsaw air line, to extend their line to Bucharest. On October 22 the first direct flight was made, and occupied 14 hours, including the stops at Strasburg, Prague and Budapest. By train the journey occupies about 63 hours, so that the saving effected is very considerable.

To replace the temporary resting places of the historical collection of objects relating to air navigation which have hitherto been deemed adequate in France, for the purpose, a new "museum" is to be formally inaugurated on November 22nd at Chalais Meudon. "La France" hangar is to be utilized to this end, and the public will then have an opportunity of conveniently studying the many interesting "relics", etc., which have been collected relating to the past history of aviation.

AERONAUTICAL NEWS FROM FOREIGN COUNTRIES (Cont'd)

France (Cont'd.)

Encouraged by the success attained during the German gliding competition in the Rhon hills this year, France has resolved to hold, next year, a somewhat similar competition. At present it is proposed to hold the competition from July 6 to 20, 1922. The competition is to be organized by the French Aerial Association, but before settling the rules and regulations it is proposed to call a "Congress" at the Grand Palais to discuss the possibilities of such a competition. The Congress is to take place on November 26 and 27 in one of the lecture halls of the Grand Palais, and the only condition imposed for admission to this congress is that a communication should be made to the Congres d'Aviation sans Moteur, addressed to the General Secretary, M. Georges Houard, 17 Boulevard des Batignolles, Paris. The communications should bear on the following subjects: Theory or application of gliding flight; method of making the experiments; information relating to the Rhon experiments; rules and regulations of the French competition in 1922, or suggestions concerning the competition, such as suitable place for holding it, rules and regulations, etc. Communications should not exceed 1,200 words, and those accepted will be published in the French publication LES Ailes.

France is gradually turning the port of Antibes into an important air station, and it is hoped to establish air lines running to Corsica, Sardinia and Tunis, using Antibes as the French terminus. On October 18th a seaplane flew from Antibes to Corsica (Ajaccio) in 3 hours and 10 minutes, which is a very great saving of time as compared with the time taken by steamers.

Czecho-Slovakia

Prague is slowly but surely becoming an air post of some importance, a position to which her geographical situation would appear to entitle her. The airdrome is situated at Kbley, a small village on a plateau to the northeast of Prague, forming a splendid natural site for an airdrome. It is here that the machines from Paris, which depart from Le Bourget at six in the morning, arrive at about two o'clock in the afternoon, leaving again for Paris the next morning at 11:30. In addition to this daily service to Paris and Warsaw, Prague during the next few months will also have its service to Budapest, Belgrade, Bucharest, Dresden, Berlin and Constantinople. For the extension to the Turkish capital, a new machine has been ordered - one of the four-engined Bleriot's, presumably the "Mammoth", one version of which was exhibited at the last Paris show. The new machine is stated to have accommodation for sixteen passengers with luggage, and to have an average speed of 120 m.p.h., with four engines of 300 h.p. each.

SQUADRON NEWS

Langley Field, Hampton, Va., November 5.

Langley Field upset the dope by defeating the strong Camp Holabird team Saturday afternoon at Langley Field by the score of 14 to 6, thus eliminating the Holabird boys from the tournament, and at the same time winning the right to meet the Camp Meade team for the Championship of the 3rd Corps Area. The game was exciting from beginning to finish, and was the fiercest ever staged on Langley Field. Both teams fought like Trojans for victory. Holabird made 15 first downs against 11 of Langley's, but when they were in striking distance of the goal the Langley line became impenetrable and the visitors were unable to make any headway.

Captain Jacobs and family have arrived on the field and are quartered at 4 E.

Captain Smith, of Lighter-than-Air, has gone to Aberdeen for temporary duty.

Mr. Van Kirk, of Indianapolis, Ind., and Mr. Zavits of Columbus, O., are guests of Major and Mrs. Van Kirk, who gave a quail dinner in their honor on Friday evening.

Lieut. Nutt had for his guests at the supper dance Thursday evening, Mrs. Campbell, Mrs. Miller, Major and Mrs. Hanley, Majors Sherman and Milling, and Lieut. and Mrs. Martin.

Lieut. Fleer, a Marine flyer from Quantico, Va., is a guest on the field for a few days.

A party was given at the Club on Thursday evening in honor of the birthdays of Mrs. Souza and Capt. Voss. There were 56 present, and a Spanish supper was served. The majority of the guests wore kiddie costumes. Dancing followed.

One of the most attractive get-to-gethers held at Langley Field for many a day was the masquerade and dance at the Service Club on Saturday evening. The club rooms were tastily decorated with the appropriate decorations of the occasion, while the masquers presented a fantastic appearance as they tripped the "light fantastic" in their gala and sometimes weird attire.

The American Legion Dance which took place at the Post Theatre Wednesday evening proved to be one of the most successful ever put on by that organization. The orchestra from Fort Monroe was a real feature of the evening program, and was much enjoyed by all. Dancing started at 8:15 and continued 11:15.

Carlstrom Field, Arcadia, Fla., November 3.

Carlstrom Field Aviators met the Camp Benning Doughboys at Carlstrom Field on Saturday, October 29th, for the Army Championship of the Southeastern Department, and sent the Infantrymen down to defeat by the score of 14 to 7. Although the Camp Benning team was beaten by only one touchdown, they were outplayed in every department of the game from start to finish, and their lone score came from an intercepted forward pass on Carlstrom's 35 yard line, giving Benning the ball on Carlstrom's 14-yardline. At no other time did Benning show the punch to threaten Carlstrom's goal, despite the fact that the Infantrymen outweighed their opponents in the line at least 20 pounds on the average.

On Armistice Day the team will journey to Bartow, Florida, for an exhibition game with Stetson University, for the benefit of the American Legion Post at Bartow. This promises to be a good workout for the team and will serve to keep it in shape to meet all comers in future games.

This week-end Mr. Kellum will give a "Yatch Party" for the football team at Fort Myers, and a grand time is expected by all.

Rockwell Air Intermediate Depot, Rockwell Field, Coronado, Calif., Nov. 1.

The 18th Squadron (Observation) has been organized at this field, in line with recent instructions governing reorganization of the Army, with a present strength of two officers and eighty men. The enlisted strength is made up of former members of the Supply Department stationed here and men transferred from squadrons in the Philippine Islands. Captain Fawcett is in command of the squadron, with 1st Lieut. Frank W. Seifert as Adjutant and Supply Officer. Captain R. G. Ervin and 1st Lieutenants Virgil Hine, Charles L. Webber and Norman R. Wood will be assigned to the squadron upon their arrival from the Philippine Islands sometime during this month or next. The authorized

Rockwell Air Intermediate Depot, Rockwell Field, Coronado, Calif., Nov. 1 (Cont'd).

strength of 90 men will probably be reached during November by local enlistment. Until receipt of definite instructions and until additional officers are assigned, no squadron operations will be practicable.

Since the recent reorganization of the Air Service under the reduced strength of the Army, five squadrons have been authorized for the 9th Corps Area, Philippine Islands and Honolulu, all of which are to be supplied from this depot. The present output of the shops at Rockwell Field being two airplanes and three motors per week, and with the planes on hand already assembled, it is expected to be able to supply these needs.

Since the opening of the duck season on October 1st, several of the officers of the post have made trips to Imperial Valley and some of the nearby lakes, but with rather discouraging results. This has come about through scarcity of ducks and is not in any way chargeable to lack of skill on the part of the hunters.

Rockwell Field has the honor of leading in the local Golf Tournaments through Captain Roscoe Fawcett's mastery of this game, he having won the championship of the Coronado Country Club on August 15th. On September 1st the San Diego Country Club was opened with an inaugural tournament of 170 entries, and this was also won by him. While Captain Fawcett takes the lead among the officer personnel, the post is not lacking in other skilled players, notably Lieut. A. W. Vanaman, who has golf balls to waste as the result of various games, and Lieut. John M. McCulloch, who has been a contributing factor to keeping this post in prominent position in the game of golf.

Hqrs. 12th Squadron (Obs.) Airdrome, Fort Bliss, Texas, Oct. 29.

On October 22d 1st Lieut. R. D. Knapp made a trip to Nogales, Ariz., the former station of the 12th Squadron (Obs.) to get his Willis Car, and upon his return the squadron was surprised to learn that the Lieutenant had been married while in Nogales. The Lieutenant's wife returned to El Paso with him.

1st Lieut. Charles W. Sullivan, who was transferred to the 12th Squadron from Chanute Field, reported for duty on October 20th. He made the trip from Chanute Field to El Paso in his automobile in twelve days.

1st Lieut. Charles E. Evans, a former member of the 12th Squadron and now on duty at Kelly Field, has been visiting friends and relatives in El Paso during the past week. In the early part of the week Lieut. Evans and his wife were presented with a seven pound boy.

McCook Field, Dayton, Ohio, Nov. 1.

Three all-metal Junker planes stopped over for an hour or two Wednesday afternoon during their flight from the east to take part in the National Aero Meet to be held in Omaha, November 3d to 5th. J.M. Larsen, who will conduct a race at the event, and Secretary Post of the Aero Club accompanied the planes as passengers.

Lieut. Macready has been enjoying the novel experience of seeing himself in pictures. Movies from McCook Field, illustrating the different episodes in connection with his recent height record were shown during a meeting of the Dayton Exchange Club on Tuesday, October 25th, at the Gibbons Hotel. After viewing the pictures, Lieut. Macready related to the audience of 100 or more his personal experiences in the spectacular flight and touched upon the subject of the advancement of aviation. Lieut. Harris, who had witnessed the bombing tests off the Virginia Capes, explained points in connection with moving pictures taken of this event.

Lieut. C. C. Moseley, while flying a Thomas Morse plane on Tuesday, October 25th, miraculously escaped serious injury when his machine turned turtle in landing. The pilot was thrown free of the plane and suffered only a bad shake up and a few bruises.

Lieut. Fraser, Chief of Inspection Section, is making an extended tour of inspection through the east, expecting to visit the plants of L.W.F., Wright Aeronautical and Witteman-Lewis.

McCook Field, Dayton, Ohio, Nov. 1, Cont'd.

Lieut. Karl deV. Fastenau, Equipment Section, has just returned from a six weeks' vacation in Minneapolis.

R. W. Schroeder of Chicago, ex-major, A.S., together with P. J. O'Keeffe, of the same city, were recent visitors at the field. Mr. Schroeder is now associated with the Underwriters' Laboratory of Chicago in the position of Aviation Engineer. He came to Dayton for the purpose of visiting the Johnson Aviation Field to obtain information on various types of commercial aircraft. On Wednesday evening he was a guest at a dinner given at the Shrine Club by the official staff of the Flying Section in honor of his association of long standing with that body.

Mather Field, Sacramento, Calif., October 27.

A number of trips to and from the field were made during the week. Sergeant DeGarmo, of the 91st Squadron, and Mr. Dunning, a photographer, arrived from San Francisco on the 18th, leaving for Toulumne and Montague, Calif., for the purpose of taking photographs of the forests, returning to the field on the 20th en route to Crissy Field. Lieut. A. G. Liggett made two trips here from Crissy Field, ferrying an enlisted man back from detached service at that station, and on Sunday he came with Lieut. H. A. Alverson, Assistant Air Officer, for a conference with Major Atkinson. Mr. Richard, Radio Engineer at this station, flew back to Crissy Field with Lieut. Halverson. Lieut. F. S. Gullet, Post Operations Officer, made a flight to March Field on the 21st, for the purpose of ferrying Mr. Marx, Forestry Liaison Officer, to that field and neighboring auxiliary fields, on forestry missions.

Several changes in duty have occurred recently among the officers of the command. Lieut. John R. Morgan, A.S., has been appointed Post Adjutant, relieving Lieut. Mark R. Woodward, A.S., who is now attached to and commanding the 28th Squadron (Bombardment). Lieut. Ned Schramm is to be Post Engineer Officer, relieving Lieut. Grandison Gardner, who is under orders to proceed to McCook Field, Dayton, Ohio.

Major Frank W. Duryea, Finance Dept., Fort Mason, Calif., was on temporary duty at Mather Field for a few days. He came to initiate and close the audit of property accounts here, which his two assistants, Warrant Officers E. T. Hiehle and F. S. Moneyhum, carried on. All departments of the field, except the hospital, were audited and cleared by the 22nd.

Mrs. Thomas H. Miller and Mrs. William R. Mackinnon entertained the members of the Officers' Mess and several friends from town (Sacramento) on the evening of Tuesday, the 18th, at the Officers' Club, with cards and dancing. Captain Miller, M.C., is to be transferred to Honolulu, Lieutenant Mackinnon is under orders to proceed to the Philippines upon expiration of his leave, so the ladies decided to say farewell in this charming fashion. The club was attractively decorated with flowers and ferns; tables were arranged for bridge, and the Post Orchestra played for those who preferred to dance. A delicious supper was served about 10:30 p.m.

March Field, Riverside, Calif., November 4.

Major Franklin Babcock, I.G.D., arrived at March Field on November 4th for a general inspection of the post.

Keen rivalry exists both on and off the flying field between the 19th Pursuit Squadron and the 23rd Bombardment Squadron stationed at March Field. The supremacy of the swimming pool was settled by a relay race on Tuesday, November 1st. As swimmers the 19th Squadron proved to be first class pursuers. They were still pursuing when the last bomber had crossed the finish line. On Thursday, November 3rd, the pursuers evened the count when they made the bombers look like an aggregation from the old soldiers' home in a relay obstacle race, consisting of running the 100 yards, which included three hurdles, climbing a 15 foot rope hand over hand, running 50 yards, climbing over an airplane crate, and running 50 yards to the finish. Those who couldn't climb the rope were penalized two minutes, and it was here that the bombers suffered, for two of their heavy weights were unable to raise their bulk the necessary fifteen feet. Following the race the hospital did a land office business patching the hands of those who let their enthusiasm get the best of their judgment and slid down the rope.

Kelly Field, San Antonio, Texas, October 29.

The 8th Squadron has the record of obtaining recruits this week, having secured two men who came all the way from Dallas, Texas, to join this organization. This squadron also reports that they have settled the question as to whether one of the new XB I A's are speedier than the old D.H. 4's. Lieut. Glasscock piloted a DH 4B and Lieutenant Myers held the stick in the XB. Lieut. Glasscock claims that he had to look over the tail to see if the XB was still in the race. The DH was about 3/4 of a mile ahead at the finish of a five-mile run.

Several Reserve Officers have been assigned to the 90th Squadron for practice flying and have been taking advantage of the clear days and making several hops.

Lieut. Harbeck of the 90th Squadron and Lieut. DeShields of Headquarters made a cross country trip to Dallas this week, but outside of having a pleasant trip they had nothing to report.

On the morning of the 26th the first accident to one of the XBIA's occurred. Fortunately, no one was injured. The accident was caused by the engine going dead and, not being able to start the propeller by diving or with the booster, Lieut. A. S. Albro, who was piloting the ship, had a narrow escape from death.

Lieut. Stacy C. Hinkle has been assigned to command the 1st Photo Section, relieving Lieut. E. D. Jones. Lieut. Hinkle has been absent from the Group on detached service at Langley Field in connection with the maneuvers held there last summer. The Photographic Laboratory is practically completed and ready for the work of this section.

A problem was successfully carried out by Lieut. Westside Larson, Air Service at Camp Stanley in connection with artillery practice in the dark. Lieut. Larson left Kelly Field when nearly dark, so as to get to Camp Stanley at 7:30 p.m. when, according to orders, he was to drop parachute flares.

The hangar detail of four men in the 90th Squadron were working every minute this week keeping up with the flights that were being made. Twenty-six hours and eighty-two flights were the reasons. Nineteen flights were made by the personnel of the 1st Photo Section. No accident of any kind occurred.

Class 3 Student Officers completed dual instruction October 19th, and are now on the Solo Stage, with Lieut. Byron E. Gates in charge. Ground work for this class is progressing under the able instruction of Lieut. Burgess and Lieut. Booker, instructors in Radio and Gunnery, respectively.

Captain E. E. W. Duncan, of Class 2, has been granted leave of absence for two months.

Cross country trips were made by members of the 2nd Group (Bombardment) to Del Rio, McAllen, Laredo, Dallas and El Paso; total trips numbering five, total time 30 hours and five minutes. The pilots were Lieut. F. D. Lynch and Lieut. W. H. Hanlon to El Paso and return; time 560 minutes; Captain E. E. W. Duncan and Private Culpepper to McAllen and return, time 295 minutes; Lieut. Sessions and Lieut. Lynch to Del Rio and return, time 340 minutes; Lieut. A. Hornsby and Lieut. Park Holland to Dallas and return, time 350 minutes; and Lieut. Booker to Laredo.

On or about Saturday, October 29th, the 2nd Group (Bombardment) expects to welcome home its representatives who have been on detached service at Langley Field, Va., participating in the maneuvers. Kelly Field has been ably represented by members of this Group participating in the bombing maneuvers against naval vessels.

The 2nd Group (Bombardment) is ably represented on the post football team by the following members: Capt. Usher, captain of the team, Lieuts. Booker and McKee, Sergeants Nobles and Knowlan, Corporal Koontz and Private Ruby. The first practice game with outside teams was played on October 9th with the Prison Guards of Fort Sam Houston. On Oct. 29th the football team defeated Brooks Field at Brooks Field, score 6 to 2.

Invitation was extended to the officers and their families to attend a Halloween Dance given at Camp Stanley by officers of the 4th Field Artillery on October 28th, also a dance at the Post Gymnasium given by the Fort Sam Houston Hop Association.

The Adjutant at Camp Travis called and extended an invitation to the officers and ladies of Kelly Field to attend an informal Horse Show on the afternoon of October 28th.

Kelly Field, San Antonio, Texas, October 29, Cont'd.

1st Lieut. John A. Laird was married to Miss Blanche Michael at the home of Mr. and Mrs. Gordon Underwood, at Laredo, Texas, on October 26th. Lieut. Laird has been granted a 30-days leave of absence.

Sergeant Jewell and Joe Garrett had a boxing bout at San Antonio, Texas, last Friday. There is a "fight nite" at the Business Men's Athletic Club every Friday, which has proven very interesting, and quite a number of officers of this field are in regular attendance.

Kindley Field, Fort Mills, P. I., Sept. 24.

Now that the basketball season is over, baseball is back again and, under the management of Lieut. B. R. Dallas, the Air Service will no doubt be entered in the Army League. At the close of last season, the Air Service held first place in the Army Baseball League, and expects to repeat the performance this season.

An additional H.S. 2 L. flying boat has just been erected at this station, and is equipped with a set of floating gears. With the completion of the new concrete runway, launching planes in the near future will be an enjoyable task.

During the past week a Caquot Type "R" Balloon was converted into a "Free Balloon" by removing the balonet and patching the port holes on the belly of the balloon. The valve line and rip cord was also removed from the sides of the balloon and placed through the appendix of the balloon. The automatic valve line, as well as the fins and rudder, were also removed from the balloon. A free balloon flight is expected to be made in the near future.

Clark Field, Camp Stotsenburg, Pampanga, P. I., Sept. 24.

1st Lieut. Henry Riley is convalescing rapidly from a fish bite which he reports having sustained while snipe hunting last week end in the rice paddies near Mt. Arayat. Lieut. Riley is believed to be pretty nearly on the rocks as a result of his injury coupled with the fact that the recent curtailment in transportation due to gasoline shortage has all but converted the garage into a stable. The Transportation Department, of which Riley is Officer in Charge, is reduced to the operation of but one motorcycle. Transportation facilities here have been speeded up, however, by the assignment of a herd of mules which are planned to be stalled in a hangar. Now Riley answers to the calling of O.I.C. Mules.

Lieut. G. W. Pardy, a new arrival from the states, complains that "Lady Luck" has surely deserted him. For several months prior to his arrival in the islands, Pardy, who has been on strenuous duty in connection with California forest patrols, dreamt of at least a half a day's bunk fatigue and of many other rumored delights supposed to be an inherent part of tropical service. Shortly after placing foot on the dock here, however, servants' wages commence to soar, hours of duty are lengthened from five to eight hours per, aviation gasoline runs low, and flying practically ceases. As far as Pardy can see, the activity here is quite far from being entirely social and a rest cure, as one would be led to believe from the news items read in a certain well known journal published in the east.

The work of supply readjustment has been facilitated by the recent arrival of 57 men from the 2nd Squadron, and 17th and 27th Balloon Companies, from Kindley Field. This work, which is absorbing a large part of the present duty of all organizations at Clark Field, is being rapidly reduced.

During the week a five-plane formation was assigned a mission of seeking a suitable landing field on or near the beach on Lingayan Gulf - approximately 60 miles north of Clark Field. While the formation completed the flight successfully, no landings could be effected on the beach, due to debris and a high tide. Those who participated were 1st Lieuts. C. L. Webber, G. W. Pardy, R. Baez, Jr., Edwin Johnson and William Sweeley.

Flying time for the week totalled 920 minutes, 9 flights. Flying has been restricted to emergency and strictly official flights, due to fuel shortage, the relief of which cannot be foreseen.

Hqrs. Det. 4th Group (Obs.) Paranaque Beach, Manila, P.I., Sept. 24.

Due to the shortage of airplane gasoline in the Philippine Islands, flying has been curtailed in this Department to only emergency flights and the necessary flights to keep the flying personnel in proper training, that is: the usual ten flights per month.

First Lieut. John Blaney, formerly commanding officer of this detachment, left last Wednesday on a tour of fifteen days' detached service at Camp John Hay, Baguio. He has an approved leave for one month and fifteen days, with permission to visit China and Japan, and was to sail on the 15th on the Transport THOMAS, but on account of unforeseen reasons his leave was rescinded on the day of sailing.

The enlisted personnel of the detachment on duty in the office of the Department Air Officer have been attached to the Quartermaster Detachment in the City of Manila for quarters and rations. This move has eliminated the transportation of these men from Paranaque Beach to Manila and return each day.

Balloon Co. No. 21, Ft. Kamehameha, H.T., Sept. 23.

The Coast Defenses of Pearl Harbor conducted service target practice during the past week, firing Battery Selfridge on Monday, Battery Hasbrook on Tuesday and Battery Ahua Point on Wednesday. Observations for all batteries were rendered terrestrial from observation stations and from balloon. On Wednesday observations were reported from the aforementioned sources and, in addition, from airplane. Sensings reported from the three means of observations afforded checked within ten yards of each other and the "shoot" terminated with the sixth round when the target (moving) was hit by the projectile and blown into fragments.

Maneuvers within the post, to and from battery emplacements, have been held regularly with the result that the balloon can be maneuvered to batteries from balloon field in fifteen minutes' time. Time is a very important factor in these maneuvers in order to change flying positions when firing from one battery changes to another. This is made necessary only when battery commander desires deviations right or left. "Overs and shorts", however, can be given for all batteries from the one flying position at the same time, which is more desirable by reason of well established line of communications through the fire control system.

A new class of riggers, fabric workers and gas workers was started this week for the purpose of training newly assigned men to the organization in order to fill vacancies for specialists as created by discharge. For this purpose the gas plant is being operated regularly and all gas required for operations is being manufactured in the company.

Balloon Company No. 21, Ft. Kamehameha, H.T., Oct. 13.

During the period from September 30th to October 10th there was no firing, either service or sub-caliber, in these defenses, and balloon flights were made for training of maneuvering section and winch operators only. Ground training of enlisted men continued in accordance with training program, particular attention being given to training of radio operators and mechanics. This should progress rapidly in the future, since all radio equipment has now been received and the wireless telephone is able to function for the first time. Radio messages are being sent and received from Luke Field daily, except when Naval Station cuts in at which time it is impossible to operate.

War Conditions Period started at this station on October 10th and with it service target practice for all mortar batteries. Firing from batteries took place Monday, Tuesday and Wednesday of this week, except for the 155 m.m. guns, which will fire service practice on Thursday of next week. Sensings were reported from balloon for all batteries. Flying conditions were ideal and resulted, it is believed, in sensings from balloon being more accurate than heretofore. During this period maneuvers are being held under arms, the machine gun crew being deployed so as to set a barrage over balloon during time in flight. Instructions were given in taking cover and camouflage, all of which was a change from the routine and added considerable enthusiasm to the drill.

Balloon Company No. 21, Ft. Kamehameha, H.T., Oct. 13. (Cont'd)

First Lieutenant Albert F. Hebbard of this organization was married to Miss Henriette Anne Davis, of Chicago, on Wednesday, October 5th, and is now occupying one of the new sets of Air Service quarters in this post.

This company has organized a club known as the "Aero Club of Kamehameha", the object being to promote "Esprit de Corps", offer literature and other technical data to its members and to hold as eligible to election as members only those who are now in the Air Service or connected with Air Activities or who are advocaters of a Greater Air Service, comprising Commercial, Military and Naval aeronautics.

Hqrs. Fifth Group (Observation) Luke Field, H.T., Oct. 17.

A mission of night attack was flown last Tuesday night over the Koko Head sector. Barrels were anchored off shore to simulate hostile landing parties, and at a given signal hostilities were opened by one searchlight battery picking up a single target which the plane dived on, using Lewis guns from a tourelle mount during the attack. Two searchlights were next used, and later all batteries in the regiment endeavored to illuminate the entire zone of activities. Dive attacks were made during each phase of the searchlight employment to determine the illumination desired for such activities. All beams were then turned out, and tests were made with parachute flares, which resulted in a preference for searchlights in view of the peculiar path of light on the water caused by the flare which exaggerates the darkness in all areas not covered by the reflection.

A flight of four DEM4's proceeded to the Island of Maui last Wednesday to carry out photographic and visual reconnaissance and demonstrative missions from our temporary base there. A Fokker was shipped over to operate from the same base and will be assembled there.

One demonstrative mission was flown Monday to greet the incoming Press delegates of the International Press Congress now in session in Honolulu. Formation maneuvering and acrobacy was displayed while the MATSONIA rounded Koko Head on its way into Honolulu.

On Tuesday a long drawn out Artillery observation mission was flown with one of the batteries of the Coast Defenses of Pearl Harbor. The unusual delay was caused by the tug being out of position in the firing zone. All sensings were good and relayed quickly to the Battery Commander through our communications station.

Good progress is being made on the mosaics of Oahu being constructed, and as often as weather conditions permit verticals from 10,000 feet are being added to the areas already taken.

Last Monday the 5th Group held a field day which furnished keen competition between the two squadrons and air park. Swimming, track, and military events were run off smoothly, and it was not until the last event that the Air Park finally nosed out the 6th Squadron with sufficient points to win the cup.

Crissy Field, Presidio of San Francisco, Calif., October 29.

The Ninth Corps Area Football Team arrived at Crissy Field on the 25th, and is quartered at the Bachelors' Club, Crissy Field. It has a galaxy of stars, and among its members are "Machine Gun" Smith, Captain of the 1919 West Point Team, "Doctor" Andy Smith, former assistant coach at California and now Flight Surgeon at Crissy Field when he is not playing football. In the backfield of the team are Lieut. Daniels of the West Point '20, Captain Eglin of Wabash '16, Captain Roderick of Worcester Tech. '16, and Captain Mays of the Oregon Aggies '14. The line is one of the heaviest in the country, only the ends weighing under 200 pounds, and consists of Captain Butner, an old Brown player, Captain Gilbert of the Penn. State, Captain Hull of Miami 1916, and Lieut. Vogen of West Point 1920, who was honorably mentioned by Walter Camp, and Lieut. Campbell of Oklahoma 1916. The team is coached by Major Merillat, a former player and coach at the U.S. Military Academy. The team will work out all this week at the Presidio in preparation for a game with the Olympic Club of San Francisco. A dance was given at the Officers' Club in honor of the team on their first night at the Presidio of San Francisco.

Crissy Field, Presidio of San Francisco, Calif., October 29 (Cont'd)

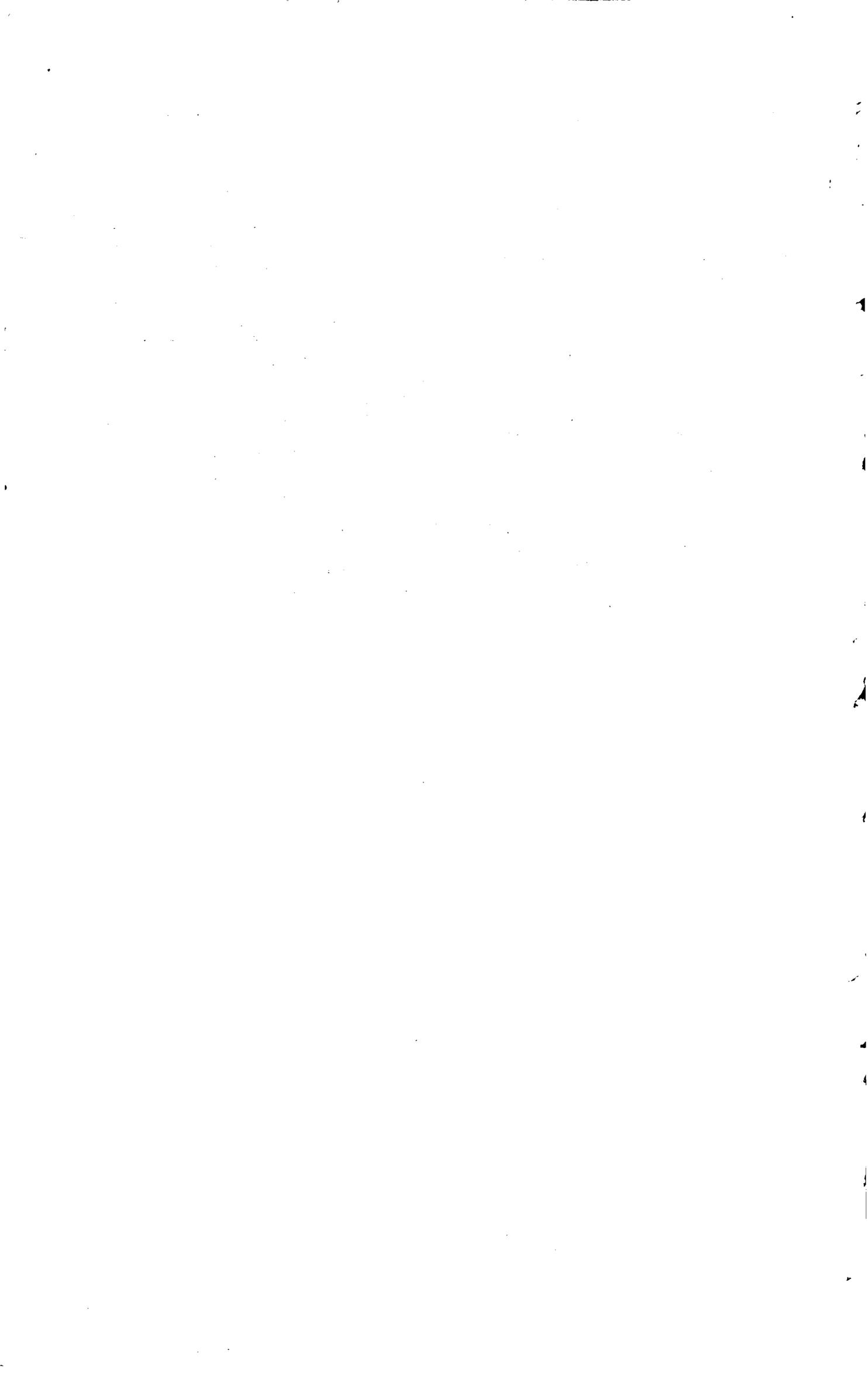
Major General Devol, retired, was a visitor at Crissy Field during the past week and was given his first airplane ride by Captain L.H. Smith.

The Baseball team of the 91st Squadron (Obs.) played the Presidio team on their diamond last Wednesday. The Presidio team is the fastest aggregation around the Bay, and the Squadron team is well satisfied with the showing they made. The final score was 3 to 2, the winning run being made by a Presidio player in stealing home in the 7th inning. The game was very fast and full of double plays and long hits.

On October 24th two airplanes from the 91st Squadron (Obs.) observed coast defense target practice from Battery Spencer of Fort Baker. First Lieut. E. C. Batten acted as pilot and observer for two hours, and Sergeant Eckerson acted as pilot and observer for one hour and ten minutes. Ten shots all observed by radio were reported 100% efficient. The shoot was a success and a direct hit was made on the target on Shot No. 4.

Lieut. R. E. Selff, commanding officer of the 15th Aerial Photographic Section, photographed the Presidio at an altitude of 800 feet during the past week. Tests were made for the purpose of having the 19-1 Camera in trim order to photograph San Francisco and other points around the Coast. Flights were subsequently made photographing San Francisco, Oakland, Berkeley and other points around the Bay.

Staff Sergeant Whitefield, 15th Photo Section, piloted by Sergeant Guile, of the 91st Squadron, made a trip to Mather Field this week for the purpose of photographing a new radio equipment at that station, as well as to take pictures of the section of Sacramento, California, which was recently visited by a cyclone.



The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE DECEMBER 3, 1921.

AIRSHIP MOORING MASTS OF THE U. S. AIR SERVICE

After war operations ceased, the first system for anchoring non-rigid airships in the open air which proved at all practicable was developed in England. This system demonstrated the safe riding of the airship at anchor in reasonably high winds.

There has been developed by the U.S. Army Air Service a type of mooring mast, which has proven very successful for the mooring of airships. The mast, as at present developed, consists of a structural steel tower held in a vertical position by steel cables. At the top of this mast is pivoted a cone shaped padded buffer, which is designed to fit the nose of the airship and distribute the pressure of such airship uniformly over the surface thereof. At the base of the tower or mast there is located a winch mechanism, operated by hand, designed to reel in a cable which is passed up the center of the mast over sheave wheels at the top and fastened, when the mast is in use, directly to the nose of the airship, which is suitably reinforced to withstand the strain. The mast has been designed with particular reference to portability, being made up in four sections, each 18 feet in length, making the total height of the mast 72 feet. An erecting derrick is provided, integral with the base of the mast, by means of which the mast may be installed in a minimum length of time. The entire mast may be disassembled into its 18 foot lengths, placed aboard standard Army trucks, and transported to its new site and there reassembled and erected in a minimum length of time, and with only such equipment as is contained in the mast itself, excepting a few small tools and old pieces of timber, etc., which would be required as dead-men for the securing of the guy cable.

Experiments with the mast conducted at Langley Field have been very successful and, while slight alterations are being made - as is always the case with entirely new designs - the basic idea and general dimensions of the mast, as they were originally designed and as they exist at present, will not be changed to any appreciable extent in future designs for this size of mast. This mast will properly handle ships from the smallest size, i.e., 35,000 cubic feet capacity, to ships as large as the Roma, which has a capacity of 1,200,000 cubic feet.

Arrangements are being made for the installation of auxiliary devices, such as direct piping, through the mast to the ship, of water, fuel, buoyant gas, compressed air, etc., and doubtless in the future development of this mast these auxiliary devices will receive more and more attention and the mast thereby refined considerably. Masts such as this, located at various points throughout the country, at municipal landing fields, Air Service flying fields, and the various strategic and protected sites, will provide means whereby airships, even to the smallest size, will be able to fly with entire security, traversing the entire country, and thereby establishing new means of rapid transportation.

The operation connected with the landing of an Airship and attaching it to the Mooring Mast is a relatively simple matter, although great caution and skill on the part of the airship pilot is required to insure the security of the craft against damage. Upon approaching the mast, at an elevation of between one and two hundred feet, the mooring line is dropped and the end of it fastened to the end of the mooring mast cable which, as above mentioned, passes up through the center of the pivoted buffer cone over sheave wheels and down the center of the mast onto a storage drum actuated by a hand winch mechanism. The winch is now operated, drawing the ship's nose securely up into the padded cone, and the ship is secure and safe from any damage from ordinary weather conditions, flying from this position exactly as a weather vane does. As soon as the ship is secure, the hydrogen, fuel, air and water lines are connected to the ship, and she is prepared to either take off again on a continuation of her flight or to

remain for weeks or months, requiring a minimum of attention upon the part of her crew. To perform the operation above outlined requires the services of but from five to twenty-five men, depending upon the nature of the air currents in the vicinity of the mast.

Upon approaching a mast preparatory to making a landing, an airship "weighs-off", i.e., the pilot discharges ballast or gas, depending upon whether the ship is "heavy" or "light", until the airship is in static equilibrium, or preferably a little "light", or, in other words, has a tendency to ascend upon the motors being idled and the dynamic effect of the controls neutralized. The ship is then directed toward the mast, approaching nose into the wind. Immediately the mooring cable is attached to the mast winch cable, the propellers are reversed, and a constant tension maintained upon the mooring cable until the ship is secure in the mast. In the absence of reversible propellers a few men are distributed upon the tail, handling guys to steady the ship into the wind and to prevent its yawing and riding up into the mast at too rapid a rate or by surges. While the airship is attached to the mast a single attendant, to maintain constant pressures in the gas compartments and the static equilibrium of the ship, is sufficient.

TEST FLYING AT NIGHT

On November 10th, 1st Lieutenant Alexander Pearson, Jr., 12th Squadron (Observation) stationed at Fort Bliss, Texas, took off at 9:30 p.m. for a night test flight. He flew a DH4B plane, especially prepared for cross-country trips, having extra gas and oil tanks. Lieutenant Pearson was in the air 45 minutes, and without lights made a perfect landing on the airdrome. He has on previous occasions made cross-country trips at night, finding his way over mountains and prairies and landing on the Fort Bliss airdrome without trouble. On one occasion he and Sergeant Jungling were in Prescott, Arizona, doing work in the Grand Canyon, when late one afternoon orders were received to return to Nogales, Arizona, at once. The plane was made ready, and the trip was started at 7:30 p.m., 255 miles being covered in three hours' flying time and the landing at the Airdrome in Nogales being made at 10:30 p.m. The field at that station is a two-way field and very small. The landing was made without lights.

AIR SERVICE MECHANICS SCHOOL LIBRARY, CHANUTE FIELD

The library of the Air Service Mechanics School at Chanute Field, Rantoul, Ill., which is maintained under the direction of the Officer in Charge of Training is located in the main school building and is open to all officers, instructors and students during school hours. The library contains a very good supply of technical reference books, Air Service publications, information data, and monthly periodicals or magazines. These books, periodicals, etc. can be drawn by any person of the school for a definite period of time, although they must, necessarily, be returned to the library in order that the supply may be kept complete. The actual handling of all the work connected with the library is performed by a Librarian, who is on duty at all times during school hours, and who submits a weekly report of all Air Service publications and monthly periodicals received to the Officer in Charge of Training. This report is brought to the attention of all Directors and Instructors at the various meetings who, in turn, bring it to the attention of the students under their immediate supervision.

JAPANESE GOVERNMENT SPONSORS INSTRUCTION OF STUDENTS AS CIVILIAN AVIATORS.

Under regulations of the Japanese War Department, young men between the ages of 17 and 20 years, who are desirous of receiving training with a view to becoming civil aviators, are accepted as pupils by the Chief of the Board of Air, provided they fulfill certain requirements. Those aspiring to the position of air pupil must make official application to the Chief of the Board of Air, and must obtain the consent of their parents or guardians. Applications must not only be indorsed by parents or guardians, but also by a man of majority and of respectability who supports himself independently.

The examination of applicants, which is held by the Chief of the Board of Air, is divided into the medical inspection and the literary examination, and an aspirant cannot take the literary examination unless he is found to be up to the standard in his physical examination, which is carried out after the example of the medical inspection for the Army Air Service.

The literary examination is held on the following subjects, taking as the standard the proficiency shown by those who have completed the third year in the middle-school. (Applicants may choose one of three foreign languages prescribed as part of the examination - English, German or French.)

Mother tongue, paraphrasing and composition.

Mathematics, - Algebra (as far as the equation of the second degree) and Plane Geometry as far as the circle.

Geography, - Japanese and foreign (Outlines of Asia, Europe and America).

Physics, - the standard being the proficiency shown by primary school graduates.

Foreign language, - Translation from the foreign into the vernacular language and vice versa.

Applicants who have completed the third year of the middle-school course of study may be exempted from the literary examination.

When the Chief of the Board of Air has decided on the aspirants to be taken as air pupils, he sends due notification to the successful applicants, prepares an account of the results of their examination and sends same to the Chief of the Army Air Department.

The instruction of the air pupils at the Army Flight Schools commences on December 1st and lasts for eight months. Pupils may be suspended from further participation in the course of study when they are guilty of bad conduct, neglect of study or poor progress therein, physical deficiency, etc.

The number of pupils assigned to take the course each year is fixed by the Chief of the Board of Air, and vacancies may be filled by him from among those who took the examination for admission and were not previously admitted.

While pursuing the course of study an air pupil is required to wear a uniform, which is loaned to him by the Board of Air. All expenses incident to the participation of students in the course of study are paid by the government but, unless otherwise specially provided, students must pay all expenses in connection with studies pursued at outside schools. If an air pupil resigns for his own convenience, or is guilty of bad conduct or of neglecting his studies, he is made to repay the government a part or the whole of the cost of his instruction.

When air pupils have completed their course of study, the Commandant of the Army Flight School awards them certificates of completion and reports the result of their study to the Chief of the Board of Air through the Chief of the Army Technical Department.

TEST OF "ALULA" WING

The London TIMES gives an account of a recent demonstration at the Northolt airdrome of the capabilities of the "Alula" airplane wing, the invention of Alex Holle, a Dutchman, who, with a Dutch organization, the Commercial Aeroplane Wing Syndicate, has been working in England for a number of years at the task of producing a wing for airplanes that shall give a greater lift in comparison with area than that of wings of accepted design. For the purpose of the demonstration, the wing was fitted to a Martinsyde "Semi-quaver" machine with Hispano-Suiza engine of 300 h.p. To provide some sort of comparison with the performance of a machine with normal type wings, a Bristol Fighter was flown side by side with it. The Martinsyde with the new wing got off the ground very quickly, went up at a sharp angle, and reached a height of 3,000 feet in 72 seconds. It attained a maximum speed of 180 miles per hour. The pilot was Mr. R. W. Kenworthy. The "Alula" wing is shaped much like the spread wings of a seagull. It has no struts and is made of mahogany planking. It is pointed at the extremities, curved slightly back, and thickened towards the fuselage. It is slightly streamlined. Although the designer set out only to get increased lift from the wing, he has gotten also increased speed.

Mr. Holle expressed the opinion that wing and fuselage designers are already far in advance of engine designers. He is prepared to design wings for

all types of heavier-than-air machines, according to the sort of work they have to undertake. The wing in this demonstration is intended for fighting aircraft, another having been fashioned for freight-carrying.

The Lawrence Sperry Aircraft Company of Farmingdale, L.I. has designed and built for the commercial market a high-lift monoplane wing, which can be fitted to standard fuselages of the J.N. type. A test of this wing was made at the Curtiss Field on Aviation Day, Sunday, October 16, 1921. The machine carried a pilot and four passengers, its load, including gas and oil and instruments, totalling 1,000 pounds. The length of run the machine took in getting off against a wind of approximately 5 m.p.h. was 300 yards. The first test - climbing - recorded 2500 feet in 15 minutes. The next test concerned the length of glide, which is one of the features of the machine. The glide with a full load was measured and it was found that the machine glided a distance of one mile and a quarter and lost only 600 feet altitude. In the speed test, flying against the wind at an angle of approximately 15 degrees to the course, which effected a loss in the average speed, 85.5 m.p.h. was officially registered.

The Sperry high-lift wing is so constructed that it is absolutely interchangeable from one machine to another. All that is necessary in order to mount it on a fuselage is to remove the four fuselage cabane strut fittings and replace them with special fittings supplied by the manufacturer. The wing is internally braced and in one piece, completely free from external bracing wires, thus permitting very easy and quick erection and dismantling. Setting up the wing is such a quick and simple operation that it is practically impossible to make mistakes; there is no truing up or other delicate adjustments, so that highly skilled riggers are unnecessary. The wing is built up with very strong deep I beams, with solid spruce web and ash cap strips. The ribs are built up with 3-ply veneer with spruce caps, and the leading edge is spruce. The wing is covered with doped and varnished linen. It was sand tested, standing a factor of safety of 15 before failure, with a deflection of 8 in. at a factor of safety of 6. The span of the wing is 36 feet, length 26 feet, area 300 sq. ft.

ARMY FLIGHT TO MANCHURIA

The long discussed army flight from Tokorozawa to Changchun (Manchuria) was finally started on September 27th at 7:22 a.m., four Salmson observation machines, specially fitted up with 607 litre capacity gasoline tanks, participating. The fuselages of the planes used were made in France, while the motors were Salmsons of Japanese manufacture, developing about 250 h.p. No observers were carried. Two lieutenants and two noncommissioned officers piloted the four ships, the total distance of flight being approximately 2,804 kilometers. The route of flight was as follows: Tokorozawa to Toyohashi to Osaka to Okayama to Hiroshima to Tachiarai, and from there across the straits to Tsushima, thence via Fusan to Seoul and from Seoul to Heijo (Pyogyang) to Shin-Gishu (Sin Euijyo) to Mukden, to Changchun and back to Mukden, where the planes were to be shipped back to the starting point.

Of the four planes which started, one arrived at Changchun without mishap, having made landings for gasoline, etc., at Tachiarai, Seoul and Shin Gishu (Sin-Euijyo). Distance to Changchun 2,530 kilometers. Total flying time of the successful plane was 17 hours, 43 minutes - 145 kilometers per hour.

Of the three other planes which started, one became lost in the fog over the Tsushima Channel and has not been heard from; one abandoned his machine on account of motor trouble, after four hours of flight, and went by train to Seoul where he took a reserve machine and finally arrived at Changchun; and one landed near Nagasaki and proceeded no farther. Another plane joined the original starters at Tachiarai, but crashed the same day at Taikou.

At the start fine weather but heavy, low clouds and fog were encountered over Tsushima and Chosen channels, and lower Chosen. The successful participants state that an average altitude of 1,000 meters was attained.

AN AIRPLANE FLIGHT TO TAAL VOLCANO.

On September 28th two airplane formations, led respectively by Major A.H. Gilkeson, Commanding Officer of Clark Field, Pampanga, P.I., and Captain Lloyd N. Keesling, Field Adjutant, flew on mapping and practice reconnaissance missions to Los Banos and Santa Cruz on Laguna de Bay, approximately eighty miles south of Clark Field. Both flights made side trips to Taal Volcano, which was enthusiastically reported on upon the return of the flights as being unique in geological formation and its beauty of environment. History records severe eruptions as having taken place as late as 1754. Captain Keesling mentions it in his reconnaissance report as a monument to the past ages of indelible destruction and ruin.

The approach to the volcano is over extremely rough and heavily covered country. Lake Taal, which entirely surrounds the mountain like a broad moat is then reached. From this Taal Mountain rises probably a sheer five hundred feet, appearing from the side like an inverted cone, its apex broken off, and vertically from the air like a huge doughnut. Within the crater, which is estimated as being half a mile in diameter, lies an emerald green lake and still within this lake lies another small island. The sides of the cone are devoid of all vegetation. The peaks bordering the crater lake are irregular and sharply jagged. First Lieutenant C. L. Webber, who visited the location on the ground, reports Lake Taal as abounding in fish and, incidentally, less attractive forms of tropical life.

A SUCCESSFUL BALLOON TRIP

Quite a little excitement prevailed at McCook Field Saturday morning, October 29th, when a silver-colored gas bag was seen to ascend from the south end of the grounds, drifting gracefully toward the north. It was the second free balloon trip attempted by the Balloon and Airship Section.

The balloon got away about 8:12 a.m. and landed at Parma, Michigan, twenty miles from Jackson City, at 1:45 p.m., having traveled a distance of 181 miles in 5 hours and 33 minutes. There were four passengers aboard, Lieut. Philip Schneeberger, pilot; Lieut. R. E. Thompson, aid; Lieut. H. R. Harris, photographer, and Claude L. Airhart, radio operator.

The object of the flight was principally for the purpose of testing out the wireless telephone apparatus in connection with experiments being conducted at the field. Lieut. Schneeberger states that at a height of 3,000 feet the best speed was gained, they having been carried along at 45 miles an hour at that height.

The radio tests were in every way satisfactory and proved that rapid improvement is being gained in this latest invention. This was the first time in history that radio equipment was used in a balloon inflated with explosive gas. Conversation was carried on both to and from the balloon and the field until a distance of forty miles was reached, while indistinct communication was held from a distance of one hundred miles. When the radio station at McCook Field lost track of the flyers the radio music was turned on for their entertainment. The flyers state that, although their dancing floor space was rather limited, the music was a rare treat and appreciated by the entire crew.

INAUGURATION OF THE PEKING-TSINAN AIR SERVICE

Brilliant sunshine and a great crowd of Chinese, foreign guests and interested onlookers witnessed the inauguration recently of the Peking-Tsinan Aerial Service. As became such an epoch-making event, the ceremony was planned on an elaborate scale by the Chinese Aeronautical Department, a special pavilion being erected for the speech making, which was later used for a tea party after the first machine had taken to the air en route for Tsinan. Incidental music furnished by the band of the Ministry of War enlivened the proceedings at intervals. On the invitation of the Department of Aeronautics, many persons were taken up for flying trips on a Vimy Commercial piloted by Captains Lewis and Jones. Lieut. T.Y. Chen, flying an "Avro", was the stunt artist of the afternoon. Promptly at 4:45 p.m., the Cheng Ku (the name of a Vimy Commercial airplane) left the airdrome for Tsinan, carrying a full load of passengers and 600 lbs. of mail,

destined for all parts of the world. Major Batterson (the senior pilot at Nanyuan) was in the cockpit with Lieut. Tsao. The passengers included Colonel Holt, D.S.O., C.M.G. (Adviser to the Aeronautical Department), representatives of the Aeronautical Department and Chinese Post Office, and several newspaper correspondents.

Addresses were made by General Yin Chang (representing the President), General Mo Tsun-chin and General M. K. Ting (Director of the Aeronautical Department). A message from Premier Chin, expressing his pleasure at the opening of the Pekin-Tsinan Air Service, was read by General Shu Chin-Yuan.

ROMA MAKES MAIDEN TRIP ✓

The "Roma", the largest American airship ever flown, made her initial flight at Langley Field, Va., on November 15th, with successful results. The airship left her berth at 9 a.m., sliding smoothly out of the big hangar under the direction of Chief Maneuvering Officer, Captain Dale Mabry, Air Service, and through the excellent unified efforts of her ground crew of 200 enlisted men. The task of tuning up each of her six motors, weighing off and assembly of passengers and crew occupied about a half hour's time, and at 9:40 a.m. the ship was ready to take off on her maiden trip. In taking off she was free ballooned to a height of 400 feet and gradually gained altitude as she headed for Chesapeake Bay. Most of her flight was made at a height of 200 meters. After the ship had circled the field several times, and a complete inspection from nose to tail showed all parts functioning properly, she was headed for Norfolk and the U.S. Navy Yard, flying across historic Hampton Roads.

Shortly after 11 o'clock the first mishap of the flight occurred, when the propeller blades on the left forward motor were broken by a small aluminum door on the engine compartment falling into the propeller. Splinters from the damaged propeller tore a large hole in the keel cover, while several small openings were made in the lower diaphragm of No. 3 gas compartment.

With alert mind, in keeping with the responsibility of his position, Technical Sergeant Lee M. Harris, engineer for the left forward motor, immediately cut his switch and stopped his engine, thereby lessening danger from fire, while in the next instant he climbed into the ballonet to ascertain the amount of damage done. Gas was valved out of the compartment to reduce the pressure so that repairs could be made. In addition to Sergeant Harris, Master Sergeant William Fitch and Mr. C. E. Brannigan worked at repairing the leaking chamber, all three men being rendered temporarily unconscious by the hydrogen gas they breathed. The ship continued to function, although the forward motors were stopped. At 1:12 p.m. she landed at the field, after the thoroughly successful flight, which was made primarily for purposes of inspection.

A test flight will be made in the near future, at which time minor changes will have been made as a result of observations made during the inspection flight. Among changes will be the addition of shutters for the radiators of the Ansaldo motors, which it is said operated at too cold a temperature throughout the first flight.

Radio connection, both by telephone and telegraph, were maintained with the field throughout the trip, amateur operators also reporting that by listening in they were in touch with the big ship and heard of the accident to the propeller before the ship was in sight and long before she landed.

Thirty-one men, including the passengers and crew, were carried on the trip.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

France.

It is reported that two French aviators have traveled by airplane to Bucharest for the purpose of opening negotiations for the establishment of a branch of the Paris-Prague-Warsaw air service from Prague to Vienna, Budapest and Bucharest, and ultimately to Constantinople.

Portugal.

The government has received an application from a Paris group asking for a grant for fifty years to establish airplane lines between Lisbon, Oporto, Madrid and Paris.

AERONAUTICAL NEWS FROM OTHER COUNTRIES, CONT'D.

England.

Upon similar lines to the specialist branches for gunnery, torpedo, navigation and signals, the British Admiralty have decided to make a specialist branch of the Air Observers among naval officers. For the present eight officers will be selected each half year. In time, only junior lieutenants of two years and upwards will be selected, as in other specialist branches, but a few commanders and lieutenant-commanders are required immediately for training. Courses, each of seven month's duration, will begin in May and November in each year, and will include two months' preliminary training at the naval schools in gunnery and signals, and five months at the seaplane training school at Lee-on-Solent.

China.

General Pan Chu Ying, the newly appointed Director of the Aeronautical Department, has assumed his official duty on July 15th.

Mr. T. H. Chang, a returned Chinese student from the United States, has been engaged by the Aeronautical Department as pilot instructor in the Nanyuang Flying School. He is a graduate of the Virginia Military College and has received a complete course of instruction in Aeronautics in the Diggins Aviation School. He has passed the examination for International Pilot's license.

The section between Peking and Tsinan of the Peking-Shanghai Air Line has been carrying mails regularly since July 1st. It is now planned to carry passengers also, the fare for a single trip, either direction, being \$50.

On June 27th, a "Vimy-Commercial" named in Chinese "Ta Peng" or "Great Bird", had two trial flights between Peking and Tsinan, a distance of 180 miles, without accident. In spite of the rather rough weather, the machine accomplished her maiden trip between these two points in 2 hours and 15 minutes. The return trip from Tsinan to Peking occupied 3 hours and 15 minutes, its progress being retarded by a strong northern gale.

The Chinese Government has recently issued a set of five special postage stamps for use on the Peking-Shanghai air line.

Switzerland.

The Federal Aerial Office has issued a notice to the effect that, by order of the German Department of Transportation, airplanes of a military type constructed in Germany are no longer permitted to circulate in the air over that country. This prohibition also applies to civil airplanes registered in Switzerland but belonging to the airplane types prohibited in Germany, provided their papers do not contain a special certificate having come from the German Minister of Transportation stating that they were constructed before January 10, 1920.

A new air service which completes the connection between London and the Swiss winter resorts was opened by a French firm recently. The new air line runs from Paris to Lausanne. At present it is necessary for passengers leaving the Croydon airdrome at London by one of the air expresses to spend the afternoon and night in Paris, leaving for Lausanne next morning. It is, however, hoped to so arrange the service ultimately that the whole journey can be completed on the same day, with just a short stop at le Bourget (Paris).

Siam.

It appears that the Government of Siam is taking considerable interest in aviation. Recently, it is reported, airdromes have been opened in various provinces, and machines are being or are to be imported from France and England to Bangkok. As the roads are not of the best, airplane services should have the effect of speeding-up considerably the inter-communication between the various provinces.

The Netherlands.

From a traffic point of view it appears that Amsterdam has become the third largest air station. During the period between April 14 and October 3, no fewer than 1,000 machines passed in and out of the station and carried - in addition to large quantities of goods and mail - 1,511 passengers.

SQUADRON NEWS

HEADQUARTERS FIFTH GROUP (OBSERVATION), LUKE FIELD, H. T. October 24, 1921.

On Saturday, October 22nd, a Military Show was held at Schofield for the Governor of the Territory and Press Congress Delegates. The 5th Group (Observation), contributed a thirty minutes' demonstration. The following maneuvers were carried out by Air Service: Aerial Combat - Fokker - Hiso, Bomb Raid formation of five DeH's, each equipped with 2 Mark I bombs. Radio Telephone communications with magnavox attached to radio hut. Attack Raid, both Marlin and Lewis guns used. (This raid being carried out by bombing formation after bombs were released.) Passing in review in formation and single file.

The Luke Field Trapshooting team, which consists of Lieutenants Hynes, Gale, Marriner, Weddington and Rice, entered the Inter-Island trapshooting contest, at Maui, and won high honors. The trophy (an engraved silver cup) was presented to the team.

Major George E. Stratemeyer has reported to Luke Field for duty and has taken command of Air Park #10.

The DeH flight, which flew to Maui on October 12th, returned to home station on Monday, October 17th. During their stay at Maui visual reconnaissance and photographic missions were carried out successfully. A new landing field was found within two miles of Kahului.

KELLY FIELD, SAN ANTONIO, TEXAS, Nov. 5th, 1921.

The Officers of the 2nd Division extended invitations to the Officers and Ladies of this Post to a Dance, to be given at the Red Cross Bldg., Camp Travis, Texas, Friday evening, Nov. 4, 1921, at 9 p.m. The Officers and Ladies of the 1st Infantry were Hosts on this occasion.

A Musical concert was given by the 17th Infantry Band on Saturday Nov. 5th, from 6:30 p.m. to 8 p.m., at the Athletic Grounds, Kelly Field No. 2. The affair was enjoyed by a large crowd. A special Band Stand was recently built at this place, and suitable seats placed around for the audience.

The 2nd Division, Camp Travis, has scheduled a horse show to be held on Nov. 21, 22, and 23, 1921. An invitation has been extended to Kelly Field to participate in this affair.

The foot ball game played last Saturday, Nov. 5, between Kelly Field and Fort Sam Houston, resulted in latter team being defeated 51 to nothing.

The Dance given by the Fort Sam Houston Hop Association, at the Post Gymnasium, was reported to be a success, everyone attending having spent an enjoyable time.

1st Lieutenant Jas. A. Mollison, Air Service, was appointed, Post Adjutant, in place of 1st Lieut. T. J. Koenig, who was appointed Executive Officer.

1st Lieutenant Solomon Van Meter was appointed Commanding Officer of Air Park No. 4, vice 1st Lieutenant John M. Davies, Air Service, relieved.

A leave of absence for thirty days has been granted 1st. Lieut. Walter T. Meyer, Air Service, effective on or about December 19, 1921.

Lieutenant Martinus Stenseth, Air Service, has been granted a leave of absence for seven days, effective October 31st, 1921.

During the month of October 1921, two Reserve Officers flew with the 3rd Group (Attack) as follows: Spake, R.E. Captain, A.S.R.C., 2:10 Barton, J.B., 1st Lieutenant, A.S.R.C. 45 minutes.

With the arrival of the Officers and men of Kelly Field who have been on Detached service at Langley Field, Virginia, since May 16, 1921, a reorganization of the 2nd Group (Bombardment) has been effected, with Major Henry J. F. Miller in Command.

The 20th Squadron is now commanded by Lieut. F.S. Borum, with Lieut. L. L. Beery as Engineering Officer. Other members, who were on detached service at Langley Field, Va., are Lieutenant R. B. Davidson, Lt. J. R. Drum and Lieut. W. H. Frederick.

The 11th Squadron is now operating with Captain B. A. Doyle of Flying Boat fame as Commanding Officer; his officers being Lieut. C. R. Molver, Engineering Officer, and Lieuts. Paul Burrows and L. E. Sharon.

KELLY FIELD, SAN ANTONIO, TEXAS, Nov. 5th, 1921. (Cont'd)

The 49th Squadron has retained its old Commanding Officer, Lieut. E. W. Raley, with Lieuts. S.F. Landers, H.A. Craig, and F.P. Booker as squadron officers.

The 96th Squadron recently arrived at the field, being commanded by Lieut. J.M. Curry, also of Flying Boat fame, with Lieuts. Biggs and E.A. Hillery as Officers of the Squadron.

Class 3, Student Officers have been undergoing class work in Aerial Gunnery and Radio, with Lieuts. F. P. Booker and C. H. Burgess as instructors. All members have been flying solo this week and with 100% flying, they are rapidly becoming proficient in flying DH's.

The Engineering Officer of the 23d Group, (Bomb.) 1st Lt. Delmar H. Dunton, has been giving all ships a critical inspection, noting wear and tear on material which has been used in training three Classes of Students, besides usual squadron usage.

Due to the shortage of Enlisted Personnel, the mechanics of the 49th and 96th Squadrons have been detailed/assist the 11th and 20th Squadrons in maintaining the fleet of ships in the air, in order that the Bombardment Course in flying, as laid down in the Curriculum devised by the Group Operations Officers, Lieut. Wm. J. McKiernan, Jr., may be efficiently carried out.

In the foot-ball practice games may be seen some recent additions to the squad, viz:- Lt. Jimmie Millison, Lieut. Rufus B. Davidson, Lt. Wm. J. McKernan Jr., Captain W. P. Hayes, Sgt. Jeff D. Green and Corp. Faust. Such huskies are welcome, as Kelly needs them to give her rivals the trouncings they should expect from the Air Men.

When the Detachment left for Langley Field this spring it was commanded by a bachelor, but upon its return it was commanded by the same officer, tho he returned as a married man. We welcome Mr. Miller in our midst.

Lieut. and Mrs. Burrows returned from a month's leave of absence spent in California.

Lieutenant E. G. Brown, of the Argentine Navy, reported for advanced training in bombardment work this week. He received his primary landing work at Carlstrom Field, Arcadia, Florida.

The following cross-country flights were made during the week:-

Captain L. L. Harvey, pilot, and Lieut. D. V. Gaffeny as passenger, to El Paso, Texas and return; flying time, 10:30.

Lieut. D. G. Kuke, pilot, with Sgt. Merrill Tobey as passenger, to Waco, Texas and return, flying time: 6:35.

Lieutenant Doolittle, with Captain DeLangton to McAllen, Fort Ringgold and return; flying time 3 hours.

Lieutenant Woodruff with Sergeant Dercy as passenger, to Del Rio, Texas and return flying time 6:50.

The hallow'een Dance given by the Enlisted Men under the direction of Mrs. Elizabeth Hazelten, the Hostess, with the cooperation of the Board of Governors, was a great success. The Ball Room was very prettily decorated, and the Masqueraders presented a very unique appearance in the costumes they wore.

CLARK FIELD, PAMPANGA, P.I., OCTOBER 1st.

The restriction on gasoline having been removed on Tuesday, September 27th, the week has developed several very successful missions. The course of instruction for pilots and Observers has been made more interesting by the resumption of the air part of the program.

On Thursday, September 29th, two planes, piloted by 1st Lieuts. R. Baez, Jr. Squadron Commander, Third Squadron (Obs), and G. W. Pardy, Operations Officer, Clark Field, flew separate bombing and reconnaissance missions to Corregidor and Subic Bay. Much valuable information was gathered regarding Naval and other marine activities at the latter place and Corregidor was (on paper) bombed from end to end. Mountain country traversed is reported as being extremely rough, with all landing places in the flats monopolized by rice paddies and canefields.

On Friday, missions were flown by Major A. H. Gilkeson and 1st Lieutenant Henry I. Riley to Camp Gregg, near Bayambang, to reconnoiter a reported available emergency landing field.

CLARK FIELD, PAMPANGA, P.I., OCTOBER 1st, (Cont'd)

An excellent co-operative flight with the Cavalry was made by 1st Lieutenant Edwin Johnson, pilot, and 1st Lieutenant C. L. Webber, Observer, early on the morning of the 30th. A roughly planned problem, an attack and defense exercise to be engaged in at 7:30 A.M. by two squadrons of Cavalry, was communicated to the Air Service personnel at 7:00 A.M. at 7:20 A.M., pilot, Observer, and plane, prepared for work, were in the air. Shortly afterward, contact with both bodies was made, and information of value to both sides was furnished by means of messages dropped on identification panels. A complete record was retained of this work by 1st Lieutenant C. L. Webber, and judging therefrom, decisive action must have been speeded up considerably. Lieutenant Webber stated that when they left for home, both main bodies were trying to ruin each other, and it appeared as though they were very likely to succeed.

Authority having been secured to use the flying field as an aerial gunnery range, test flights to determine how its use in this respect would work out were made by Major A.H. Gilkeson, flying as gunner, with 1st Lieutenant Webber as pilot. It now seems that it will be possible to proceed with gunnery practice here without flying to Lingayen Gulf - seventy miles distant - for that purpose, as has been the custom heretofore.

KINDLEY FIELD, FORT MILLS, P.I., OCT. 1st.

Everyone is looking forward to the opening of the Baseball season, and there will be much rivalry within the units of the Air Service Garrison in connection with the organization of the Garrison Baseball Team.

1st Lt. John P. Richter, A.S. from Department Headquarters, visited this station on Sunday Sept. 25th on official business.

Major Jones, Department Air Officer, visited this station on Tuesday Sept. 27th in an N.9H. seaplane, and upon returning to Manila was forced to land at Cavite on account of motor trouble.

The supply situation at this field was properly adjusted September 24, 1921, and the regular operations of the 17th Balloon Company were resumed on Monday, September 26th.

12TH SQUADRON (OBS.) FORT BLISS, TEX., NOVEMBER 5.

Applications for enlistment in the Squadron in the last ten days numbered eighteen, but, owing to lack of recommendations and other causes, fifteen did not succeed in passing the necessary examination of the organization commander.

The strength of the unit now touches 73. The requirements for enlistment and transfer in the unit has been at par, only the very best element being considered at all.

An extensive training program has been set in motion covering all subjects from the school of the soldier to that of the pilot. All men responded, with the sole idea of perfecting the unit to a degree of excellency.

Orders were received by the organization to transport by truck from Roswell, N.M. to the Airdrome at Fort Bliss, parts of the crash which occurred at Roswell last May, when Lieut. C. B. DeShields and Sergeant Shakespere, of the 104th Aero Squadron, were forced down at that point.

In order to test results of extensive field training received by the organization, Private Fred I. Pierce (in charge) and Private Henry Williamson were given written orders to proceed by truck to Roswell on Wednesday. At 12:30 p.m. they left the airdrome, fully equipped for the trip, and arrived at their destination on Thursday noon, loaded the property, and returned to the Airdrome on Saturday, October 29th. The mileage of the trip was 406 miles and was accomplished without motor or tire trouble, which speaks well for the excellent mechanical condition in which transportation is kept by the transportation department of this unit and last, but not least, the judgment and care exercised by the men in accomplishing missions given them in written orders only and without assistance.

CARLSTROM FIELD, ARCADIA, FLA., NOVEMBER 9.

The Carlstrom Field Football Team will probably play the North Atlantic Fleet at the Polo Grounds in New York City before the Army-Navy game. Carlstrom Field is without doubt the strongest team in the Army and one of the strongest teams in the South today. The defeats administered to Florida and Camp Benning were clean cut victories without any shade of fluke or chance about them. Carlstrom Field has won the right to a big game, and unless all the well organized plans of the present "gang a glea" the latter part of the month will see the Flyers in the Big Town. The team is working hard in preparation for this date, and, with some shifts to strengthen the line, will take on Stetson College in Bartow on the 11th. This game is more in the way of a practice session for the Flyers, but the Airmen will take no chances with the latter and will put in play the entire first team to start the game, and then send in the scrubs to finish the DeLand outfit.

Carlstrom's Football Team enjoyed a gorgeous week end yachting party at Fort Myers as the guests of Mr. and Mrs. M.E. Kellum. They went by special Pullman to Fort Myers on Saturday, November 5th, and returned Sunday evening, after having eaten Mr. Kellum out of fried chicken, etc.

Last Wednesday Mr. Kellum again showed what a good scout he is by giving a barbecue and field meet at Deep Lake for the enlisted personnel, and Thursday a barbecue for the officers and a dance in the evening at the Officers Club. These were both real "Bang up" affairs, and the entire post was royally entertained.

The stork again visited Carlstrom Field, this time landing at the home of Captain and Mrs. C. W. Ford. The young man arrived Monday morning at the post hospital, and both mother and child are doing nicely. Congratulations.

P.S. Young Ford expects to join the January 1922 Training Class.

MATHER FIELD, MILLS, CALIF., NOVEMBER 2.

The entire command was saddened by the death of Cadet Spearman Evetts on October 27th. Before daybreak Thursday morning, in crossing the Southern Pacific track near Merced, California, the truck, in which a detachment of six men were riding, stalled on the track. The men, with the exception of the driver, were asleep. The driver attempted to start the motor again, but seeing the engine's headlight several miles distant he awakened the other soldiers and they all got out except Cadet Evetts, who was sleeping so soundly that the men could not get him out before the fast passenger train struck the machine. He was taken to a hospital in Merced, but did not regain consciousness and died two hours later.

Cadet Evetts started his Army life at Love Field, Texas, in 1919, was transferred to March Field for ground school work and came to Mather for advanced training in May of this year. He had recently passed the examination for a commission in the Reserve. Spearman Evetts was an unusually dependable young man, cheerful, and well liked by both officers and his fellow soldiers. He had been stationed at Visalia, Calif., during the forest patrol season.

An impressive funeral service was conducted by the Post Chaplain over the body of Cadet Evetts at 11:00 a.m. Saturday. The entire command was present to pay their last respects to this Flying Cadet. The body was conducted to the railroad station in Sacramento by the pall bearers, and Cadet Charles escorted the remains to Jayton, Texas, the deceased cadet's home.

First Lieutenant Grandison Gardner, A.S., and family, left Mather on October 29th for McCook Field, Dayton, Ohio. Lieut. Gardner came here in June, 1918, was one of the first officers to arrive here after the opening of Mather Field and, although he has been absent on temporary duty on numerous occasions, he has probably been at this station longer than any other officer. His duties kept him in the Engineering Department until after the course in Radio at Post Field, and as his interests and ambitions are along mechanical lines he is looking forward with pleasure to his assignment at McCook.

A free "movie" was given Monday night on Yellowstone Park, the text of the lecture and slides being furnished by the Northern Pacific Railway. These extra moving pictures on Monday nights are much in favor and, although the one on Yellowstone Park was in the nature of publicity for the Northern Pacific, the subject was of such interest that the audience was grateful for having been given

MATHER FIELD, MILLS, CALIF., NOVEMBER 2, (Cont'd)

the opportunity of sightseeing through the Park, and Chaplain Kelley, who gave a descriptive talk on each slide shown, made a very competent guide.

A morning Sunday School has been established, and is regularly attended by the children of the post. The Service Club is always well filled on Sunday evening, when there is a short service of song, a helpful talk by either the Chaplain or some clergyman from Sacramento, followed by instructive moving pictures of especial worth.

BALLOON COMPANY (COAST DEFENSE) No. 3, FORT RUGER, H.T., SEPT. 24.

Balloon Company (Coast Defense) No. 3, stationed at Fort Ruger, H.T., now has two balloon officers as its commissioned personnel, Capt. Ross G. Hoyt and 1st Lieut. Benj. B. Cassidy. This organization, in conjunction with Balloon Company No. 21, has some very interesting and important work to accomplish during the coming target practice season in the way of determining the adaptability of observation balloons to coast defense work and demonstrating to the Coast Artillery the usefulness and necessity of observation balloons in their problems. It is planned to make the balloon of this organization one of the aerial observation stations of the Aerial-Horizontal Base Line, similar to the system now used in the Coast Artillery. Observation instruments, of the two-observer type, suitable for the above work have been completed, and regular flights are made for the training of observers in the use of same.

A plotting board, suitable for the work, is nearing completion, and it is expected that it will be in readiness for test during the present target practice season.

A board of officers, consisting of Major Felix E. Gross, C.A.C., Captain Ross G. Hoyt, A.S., 1st Lieut. Lawrence A. Lawson, A.S., and 1st Lieut. Albert F. Hebbard, A.S., was appointed during January, 1921, to pursue the study of balloon activities as an adjunct to the Coast Artillery. The construction of observation instruments and plotting board has been under the direction of this board.

On August 18th a night flight was made in connection with searchlight drill, the observers being Captain Ross G. Hoyt and 1st Lieut. Benj. B. Cassidy. The balloon left the ground at 7:02 p.m. and descended at 8:28 p.m. The altitude maintained during the flight was 1,250 feet. The visibility was fair, wind north of east, 15 m.p.h. The target was picked up readily and several lantern messages were picked up by the balloon observers. At short ranges, where it was necessary for the balloon observer to look through the beam of the searchlight, the beam had a "blanketing" effect to the balloon observer, while objects at greater or extreme ranges were more readily discernible. This was probably due to the fact that the balloon observer received the direct reflected light rather than that which had passed back thru the beam, and also the fact that the balloon observer was observing at a lesser vertical angle.

On September 7th the balloon was flown for the observation of artillery fire, service practice. The firing was for the calibration of the guns of the battery, the balloon observers noting all shots. On the following day the balloon was flown for the observation of two problems fired by the same battery for adjustment and effect. The method of observation was as follows: The ordinary type EE mil-scaled field glasses were used. Deflection deviations were observed in mils, computed to yards by the observer, and reported. The range deviations were obtained in a different manner than is usual in balloon observation. To an observer in a balloon any shot which has a plus range deviation appears above the target, and likewise any shot which has a minus range deviation appears below the target. From the altitude of the balloon and range to the target, the distance in yards at any shot would be short or over the target if it appeared. Five miles above or below the target, respectively, was computed. Observations were then made, and from the above computations the range deviation in yards was computed and reported. The above method has proven very valuable on numerous occasions when observing on water. It is impossible to plot the fall of a shot on a map and measure the deviation, where there are no points of reference with the exception of the target.

On September 13th the balloon was flown for the observation of artillery fire, service practice. Two gun salvos were fired. Two problems were fired both for adjustment and effect. The balloon observers noted all shots and

BALLOON COMPANY (COAST DEFENSE) NO. 3, FORT RUGER, H.T., SEPT. 24, Cont'd.

recorded same. The method of observation was practically the same as in the week previous, and by the previous practice gained it is believed that the observations will check closely. As there is a direct telephonic communication between the balloon and battery commander's station, observation can be sent down direct. The day was ideal for balloon observation, and the target, although small, was kept in view at all times.

The balloon was flown on September 20th and 21st for observation of artillery fire, service practice.

Invitation has been extended to all Coast Artillery officers to take flights in the balloon, and a number of officers have taken advantage of same. The balloon #869, at present used by the company, has been inflated for 180 days, and the purity of the hydrogen gas is 90.3%. The average life of a captive balloon is about 120 days, so this record is considered very good, taking into consideration the fact that the constituents of the atmosphere in this locality are such as to deteriorate rubber very quickly. Although a total of 1123 cylinders of gas have been used in "topping off", this was necessary as an economical measure in saving the balloon. This is an average of 6.024 cylinders of gas used per day for "topping off". Even in the best of climates, this average is considered excellent. The balloon used is a Cacquot, captive, observation, type "R", 37,500 cubic ft. capacity.

On Saturday evening, September 17th, the completion of the new barracks of this organization was celebrated by a dance in honor of General and Mrs. Charles P. Summerall, given by the officers and ladies of the post. Over 200 of the officers and ladies of various garrisons in the locality attended.

On Monday evening, September 19th, another dance was given - this time for the benefit of the enlisted men of the company.

BALLOON CO. NO. 3 (COAST DEFENSE) FORT RUGER, H.T., OCTOBER 1.

On September 26th the balloon of this organization was flown for the observation of artillery fire, service practice, for adjustment and effect on moving target, observer - Captain Ross G. Hoyt, Air Service. The battery for which observations were made is located at Fort DeRussy, H.T. The balloon was flown from Fort Ruger, H.T., making the line of observation nearly at right angles to the line of fire. Observations were made on the balloon target line and reported to the chart room, where they were later plotted and deviations from the battery target line obtained. The above was reported to the battery commander for comparisons with terrestrial observations, and the reports showed that the balloon observations and terrestrial observations checked very closely.

On September 28th the balloon was flown for the observation of artillery fire, service practice, for adjustment and effect. In the afternoon the balloon was maneuvered to Fort DeRussy, H.T., for the artillery firing at that post. The route taken was as follows: Balloon maneuvered overland from Fort Ruger, H.T., to Waikiki Beach, through the city of Honolulu, a distance of two miles, overcoming in the neighborhood of 25 obstacles, consisting of overhead telephone and high tension electric lines and trolley lines, thence along Waikiki Beach to Fort DeRussy, distance $1\frac{1}{2}$ miles. The method used for overland maneuvering was as follows: Two 250-ft. ropes, 1 inch in diameter, were attached to the junction piece of balloon. One of the ropes was attached to a winch, the other allowed to hang free. Upon approaching an overhead obstacle the free rope was thrown over the obstacle and made fast to a second winch, the first rope being then unfastened and thrown over the obstacle, leaving the balloon free to move to the next obstacle. As there were no obstacles on Waikiki Beach to Fort DeRussy, the ordinary "Spider" method of maneuvering was used and the balloon "walked" to the latter place.

On September 29th the balloon was flown at Fort DeRussy for the observation of artillery fire on moving targets, for adjustment and effect, and on the following day it was maneuvered from Fort DeRussy to Fort Ruger, via Waikiki Beach, on the beach around Diamond Head Crater, thence overland to flying field. By this route only four overhead obstacles were encountered, although a good many obstacles were encountered on the beach in the way of deep water, etc., where it was necessary at times for part of the maneuvering detail to swim. The spirit with which the personnel entered into this maneuver is an indication of the high morale which prevails throughout the organization.

CRISSY FIELD, PRESIDIO OF SAN FRANCISCO, CALIF., NOV. 5.

The greater portion of the activities at this station during the past week has been along the line of improving the flying field and smoothing up the grounds and lawns. Almost every available man is at work on the landscape-gardening detail, and in time Crissy Field will be a beautiful spot. This means a lot of work, inasmuch as the field is a new one.

The 316th Reserve Squadron, which is being organized at this field, is gradually assuming real proportions. Each Monday the members meet at the field, and lectures are given on up-to-date matters in aviation, as well as technical instruction. The members of the squadron come mostly from San Francisco and Berkeley.

The 91st Squadron Baseball team played the Presidio of San Francisco team last Wednesday, but the game ended in an argument and both sides left the field before it was over.

Visitors at Crissy Field during the past few days included the following Air Service officers en route to the Philippines: Captain F. R. Lafferty, 1st Lieuts. G. M. Palmer, C. M. Seamond, John I. Moore, Edward H. Guilford, F. M. Bartlett and H. A. Dinger. Most of the above officers are on leave, pending the departure of the U.S.A. Transport THOMAS on November 5th.

Seven Crissy Field officers attended a "Get-Together" meeting held at San Jose on November 4th at the Montgomery Hotel. This event was in the form of a banquet, at which the leading business men, Chamber of Commerce, Rotary Club, and ex-Service men were representatives, and the matter of organizing a Reserve Aero Squadron in the city of San Jose, Calif., and the purchase of a flying field for the purpose of training was discussed. The affair was an unqualified success, and enthusiastic interest was in evidence. Several reserve squadrons are contemplated around the Bay Region of California, and they should prove a great national asset in time of emergency.

CRISSY FIELD, PRESIDIO OF SAN FRANCISCO, CALIF., NOV. 12.

Crissy Field has added a speed-boat to its equipment during the past week. This craft, a 25-foot gasoline launch, was obtained from the Area Quartermaster, and will be overhauled at once. It is to be kept in readiness to take off at any time to rescue aviators who are unfortunate enough to fall into Frisco Bay as they start to leave the field.

Captain Barrachini, a famous "Ace" of the Italian Air Force, was a visitor at the field this week, and seemed highly impressed with the activities here. He is making an unofficial tour of the United States.

Major Arnold, Air Officer, 9th Corps Area, Lieut. Halverson, Assistant Air Officer, Captain L. H. Smith and Lieut. E. C. Batten, of the 91st Squadron (Obs.) and Colonel Chappellear, Assistant Adjutant of the 9th Corps Area Headquarters, made a trip to Pasadena to see the Ninth Corps Area Football Team play the Pacific Fleet on Armistice Day.

LANGLEY FIELD, VA., NOVEMBER 19.

First Lieutenant Warren G. Smith, a recent graduate from the Communications School at Post Field, has been detailed as assistant Post Communications Officer.

Movies of the first flight of the ROMA, produced by the School of Aerial Photography, were shown on the screen the evening following the successful flight.

Captain and Mrs. Harding are entertaining Captain Harding's father from New York.

Lieuts. Croman and Hoppen were hosts to a group of their friends at a dinner and dance given at Roseland on Tuesday evening.

Mrs. Fisher entertained at luncheon on Monday Major and Mrs. Peck and Lieut. Curthy from Lee Hall.

Miss Holden, sister of Lieut. Holden, returned to her home in Worcester, Mass.

Local radio men and their friends have lately been enjoying some fine musical concerts sent out by the powerful radiophone station at Pittsburgh, Pa. On Sunday evenings services from the Calvary Baptist Church in Pittsburgh are picked up, amplified, and sent out, being enjoyed by hundreds of amateurs within a radius of a thousand miles. The singing of the congregation, as well as the special music and the preaching, can be heard very distinctly.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE DECEMBER 10, 1921.

LIEUT. MACREADY'S ALTITUDE FLIGHT

"Altitude records will not be gauged by the superchargers themselves but by the physical limitations of the pilot", is the statement made by Lieutenant John A. Macready, Air Service, in his official report covering his record-breaking altitude flight made at McCook Field on September 20th last. Lieutenant Macready adds that before any attempts can be made to reach higher altitudes some method will have to be devised to eliminate the extreme hardships suffered by the pilot, due to the intense cold and rarefied atmosphere encountered at high altitudes.

Below is given the official account of this flight, the first part of the report dealing with the technical or engineering aspects of the flight, giving a summary of the data obtained bearing a direct relation to the supercharger, engine and propeller, and the second part recording Lieut. Macready's personal experiences in this flight:

"The flight was made for the purpose of climbing supercharged LePere P-53 to its absolute ceiling with one man. An extremely large propeller was used for the purpose of keeping down the revolutions per minute of the engine at high altitude. This propeller turned up 1100 r.p.m. on the ground. It was assumed that with such a low r.p.m. at low altitude that the r.p.m. would be approximately normal as the plane approached its ceiling. It would be giving its most efficient power at high altitude without endangering the engine and supercharger by overspeeding it.

On leaving the ground the supercharger registered 3000 ft. below sea level. This supercharger altitude was allowed to rise until sea level conditions were registered on the altimeter, and was kept at this point by applying the supercharger throttle until 7000 feet was reached, and was not touched from that point, with the exception of once or twice when it was necessary to reduce supercharger capacity, until an altitude of 35,000 feet was reached.

A peculiar and unusual condition arose during this flight. Instead of putting on supercharger with altitude, it was necessary to gradually take off a little supercharger as altitude was gained. The propeller r.p.m. speeded up with altitude, this probably accounting for the increased supercharging capacity, with the resultant necessity of taking off supercharger to keep it at sea level condition and thus avoid preignition. There did not appear to be an increase of r.p.m. after 35,000 feet was reached, and from this point on it was necessary to give additional supercharger to keep the supercharged altimeter dial indicating sea level conditions.

At the ground the r.p.m. of the propeller was 1100, and gradually increased to an r.p.m. of 1680 at 35,000 feet. The r.p.m. remained at this point until an indicated ceiling of 41,200 feet was reached. Sea level conditions were maintained until 40,800 feet were attained.

With the supercharger at capacity and the engine full on, registering sea level conditions, it was assumed that the climb could be continued into some region of pressure above the point of 100% supercharger efficiency. This assumption was based on the theory that the supercharger efficiency would drop off probably, as in the case of the unsupercharged engine power losses with altitude.

With the supercharger registering sea level conditions (100% efficiency) at 40,400 feet, this assumption seemed reasonable, but the developments in the next few minutes of climb did not justify it. From 40,400 feet but slight altitude was gained, the supercharger dial registering a tremendous falling off. Although it was expected that at least 6000 or 7000 feet more altitude would be realized, but 400 feet more altitude was gained. Within a climb of

this small distance supercharging conditions within the engine went from sea level to approximately 6000 feet above sea level, at which point the airplane remained suspended as to altitude. This was the absolute ceiling of the airplane - it would go no higher.

The extreme lightness or the lack of density of the atmosphere at altitude also affects the efficiency of the airplane itself and does not permit the same climbing conditions, even with sea level power on the engine.

The following story of personal experience will also bring out information regarding equipment and other conditions:

It was not a record I was after when I started out on the flight which ultimately resulted in upsetting Major R. W. Schroeder's altitude record, but to test a new propeller and additional equipment on the Moss supercharger, which has been experimented with extensively at McCook Field.

One of the functions of the Engineering Division is the development of airplanes and equipment for military use at high altitude. Continuous effort is being made to develop planes which will be better than the planes of other nations for combat or observation work at extremely long distances above the ground.

My record flight yesterday was a test flight and the record was incidental to the very valuable engineering, propeller and supercharger data which was obtained.

To Major Schroeder is due a large portion of the credit for attaining this altitude. His mishap made possible the safety of subsequent efforts. From his experience was gained invaluable knowledge and information which was used to safeguard the pilot in other flights. It will be remembered that Major Schroeder fell unconscious for six miles, froze his eyeballs and was in the hospital for two weeks as a result of the strain and shock.

The day was ideal - warm and clear - just the sort of day on which the best results are obtained at altitude. The warmer the day is the better instrument results are obtained, because the pressure and density corrections do not bring the final height so low after all the instruments are checked up and calibrated.

After a good night's sleep to insure the best physical condition for the flight, I arrived at the field and began at once to make the immediate preparations towards insuring reliability of all factors which are necessary to obtain safety and comfort when undergoing hardships which one encounters in this work.

The mechanic had stripped the plane of all excess weight by cutting out unnecessary equipment and by reducing the ordinary gas capacity. The supply of oxygen also was reduced for the reason that in all previous flights I had flown with an observer, thus making it necessary to have an almost double supply of oxygen.

Roy Langham had been my observer on all previous altitude flights, but in this particular case it was not necessary for him to take readings, as the data to be obtained were such that I could get them myself with very few readings and observations.

The plane climbed remarkably well considering the original slow speed of the propeller. This propeller was a very large one, having a ground speed of only 1100 revolutions per minute, whereas most propellers have a speed around 1600 revolutions per minute. The density of the atmosphere decreases with altitude, and a propeller turning slowly at the ground would have great speed as the plane arose more and more into the lighter air.

On one previous flight the propeller speeded up from 1450 revolutions per minute at the ground to 2400 revolutions at 34,000 feet, and on another occasion when attempting an altitude flight the propeller flew off the plane in the air, knocking off the airspeed indicator, which was attached to the wing strut, and hitting the strut, because of this excess speed.

For over a year I have been attempting to reach an altitude higher than had previously been made, but on all occasions something has broken while taking the plane up on the flight, and it has been necessary to descend in trouble. Oil pipes and bearings have broken in the engine, parts of the supercharger have flown off in the air, and the propeller has been lost in flight. The majority of these flights have been test flights around 25,000 feet for the purpose of obtaining data.

Everything was functioning properly during the early part of this flight on which the record was broken. As altitude was gained I became more confident that success would be obtained, because in all flights I have made with the supercharger none had shown such excellent functioning during the early part of the trip. All the mechanisms were working in excellent order. I began using oxygen at approximately 20,000 feet, using it sparingly at first in order that there would be sufficient in case of emergency.

I was well protected against the cold. Over my military uniform was a heavy suit of woolen underwear and over this was a thick, heavily padded leather covered suit made of down and feathers. On my feet were fleece lined leather moccasins. My hands were covered with fur lined gloves.

My leather head mask was lined with fur and an oxygen mask was attached to it. The goggles were separate and were placed on the outside of the head mask. The inside of the goggles was covered with a film of secret gelatin compound which was painted over the glass. The gelatin compound is for the purpose of keeping the ice from forming on the inside of the goggles. It is supposed to function in this respect to a temperature of approximately 60 degrees Fahrenheit below freezing.

In addition to the standard oxygen equipment of five flasks containing together a pressure of 2300 pounds, I had an additional emergency flask containing a pressure of 1500 pounds which would lead directly from the flask through a tube into my mouth. At 10,000 feet I passed through a stratus of clouds, and at 20,000 feet passed through another stratus which somewhat obscured the ground and hindered me in locating my position with respect to the geography of the ground.

I felt no ill effects whatever until well above 30,000 feet, as I was receiving plenty of oxygen and was plenty warm enough, but as the altitude above 30,000 feet was reached a slight slowing up of senses and faculties was noticeable, and this slowing up increased as altitude above this height was gained.

Any exertion causes need for oxygen. The faculties do not function normally. If I would stoop over to make some adjustment I would feel the need for oxygen. This need was manifested by the objects on the ground and the instruments in the cockpit becoming dim and shaky. Whenever I felt these effects I would turn on a little more oxygen which was flowing well and freely.

An altitude flight is a continual study or analysis of one's physical condition. How far one can go without collapse is the problem being studied. I have always felt that the last point of extreme danger could be determined in time, and that if it were not and the pilot became unconscious, the concentration, worry and determination undergone in striving to keep from loss of consciousness would quickly bring him to normal when favorable atmospheric conditions were reached in the same manner that one automatically awakens from sleep at a certain time if determined to do so beforehand.

I was worried at no time until approximately 39,000 feet was reached. At this altitude ice from my breath within the mask must have clogged the oxygen pipe for the reason that I felt the force become diminished and began to feel very bad effects from its lack. I tried to blow this out and did succeed in getting a taste of ice, but could not act quickly enough to clear the entire tube, so swung over onto the emergency flask and tore a small plaster from the side of my mask placing the tube through this aperture directly into my mouth within the mask, and in an instant was feeling comparatively normal.

I was supercharging to sea level condition at 40,800 feet (indicated) and expected that flying on the engine alone I would probably reach 7000 or 8000 feet more, but this was not the case. As soon as sea level conditions were lost on the engine, the power was quickly diminished and I could only get 400 feet more altitude, which was the absolute ceiling of the plane.

While hanging suspended at an indicated altitude on the dial of 41,200 feet, the plane swung and rolled, and very little action on the controls could be obtained. The controls were almost useless, as there was not enough sustaining surface to move the plane in the direction that was desired. It hung at this point practically without control, and I held it there for almost five minutes before I was absolutely certain it would go no higher. When assured of this, I pulled the throttle slightly back in order to glide down, but even with this small movement the bottom seemed to drop out of the plane and down it quickly went toward the earth.

Before I could make the proper readjustments the engine and radiator had cooled so quickly that there was no warmth in the cockpit from the radiator pipes running thru it to warm the pilot, and as a result it became much colder in the cockpit, resulting in ice forming on the inside of my goggles, making me almost blind for the instant, and I could not handle the plane correctly for a short time.

I was feeling weak and groggy and was afraid of passing out completely. My mind was not active and I could not think fast and correctly. However, I knew that by reducing my altitude I would come back to normal and be able to make all adjustments if I could get down lower. I let the plane come down almost any way in order to get it down where I could think correctly.

I neglected to say that just before, or while I was at the supreme altitude. I remembered that Major Bane had asked me to look above me while at the great height and see if I could see the stars or any constellations, and note the appearance of the sky and any peculiar features which might exist. This I did. I was unable to see any stars, but one fact was brought forcibly to my mind and that was the fact that the atmosphere was extremely bright and light. Instead of being a dark blue, as is the case at the ground, the sky was very light in color with but a slight blue tinge. There is far more sunlight and it is far brighter at this altitude than closer to the ground.

Another point that I neglected was the fact that while climbing to the ceiling I was circling around the city of Dayton, gradually increasing the size of the circle as altitude was gained, in order to always be within gliding distance to the field. This circle as altitude was gained increased its radius until at the top of the climb I was circling within a radius of about 60 to 70 miles. I attempted to keep this circle around with Dayton as the center, but strong heavy winds tended to drift me in various directions. I do not know what these directions were for the reason that my mind was not sufficiently acute to be able to know all these facts. The original part of the return to earth was made in a very confused state, but as altitude was lost elements of consciousness became clearer, and at about 30,000 feet I was beginning to feel normal again. Here I changed goggles and continued my glide toward earth, flying around at 20,000 feet for a period of approximately 20 minutes in order that the change in condition from my altitude to the ground would not be too sudden.

I landed and taxied to the line where the boys in the hangars and on the field were waiting, curious to know the results of the flight. A pool had been made in the hangar, the different mechanics betting on the altitude. Dr. Moss, inventor of the supercharger, won the pool with a guess of 41,000 feet. The actual calibrated altitude of the flight as indicated on the barograph charts was 40,800 feet, which is the highest altitude any living being has made.

I wish to call attention again to the fact that this record flight is but merely incidental in the development of superchargers undergone by the Engineering Division of the Air Service, and is the finished and perfected work of this development. Superchargers are in such a state now, due to the developments of the Engineering Division under Major T. H. Bane, Captain G.E.A. Hallett, Dr. S.A. Moss and Adolph Berger, that they should be fairly consistent at extremely high altitudes in the future. Yet, in my opinion, altitude records will not be gauged by the superchargers themselves but by the physical limitations of the pilots. To get much higher, greater provision of some method will have to be made or it will be impossible for a pilot to sustain the extreme hardship.

SUBSIDIES BY FRANCE FOR CIVIL AERONAUTICS ✓

In 1921 France granted a sum of 27,885,008 francs in bonuses and subsidies to aerial navigation companies for working the following lines:

Paris-London; Paris-Brussels-Amsterdam; Paris-Strasbourg-Prague-Warsaw; Toulouse-Rabat-Casablanca; Bayonne-Nilbao-Santander; Bordeaux-Toulouse-Montpellier; Saint Laurent-Cayenne; and Saint Laurent-Inini.

For the year 1922 these lines are to be continued, and the following additional lines opened:

Antibes-Tunis; Bucharest-Constantinople; Oran-Casablanca; Algiers-Biskra; Dakar-Kayes; Montpellier-Marseilles-Genoa.

This accounts for an increase of 9,137,000 francs in subsidies. The remainder of the subsidies requested will go to Civil Centres of Training for reserve pilots. Excellent results have been achieved by these Training Centres.

AIRPLANE EXPORTS DECREASE

In the November 28th issue of COMMERCE REPORTS, published by the U.S. Department of Commerce, it is stated that in spite of the fact that the commercial value of airplanes as a means of communication is realized more and more, and that air service all over the world is constantly expanding, exports of airplanes manufactured in the United States fell off considerably during October. A comparison of airplane shipments, excluding parts, for October, 1921, with those of September, shows a decrease of 88 percent in number and 74 percent in value; a comparison of the October, 1921, figures with those for October, 1920, gives evidence of a still greater decrease - 90 percent in number and 95 percent in value.

SERGEANT CHAMBERS' RECORD PARACHUTE JUMP

Commenting on the parachute jump from a height of 26,000 feet made by Sergeant Chambers, U.S. Army Air Service, at Kansas City, on November 1st, and the fact that, during the course of his descent, he lighted and smoked a cigarette, a British aeronautical journal states that "while this is doubtless a record it is very unconvincing, and is about on a par with the "record de loopings" so much sought after by certain aerial acrobats; both of which are more tests of physical fitness rather than of aeronautical progress. When one has heard that someone has jumped 26 feet and landed safely, and not smoked a cigarette whilst on duty, then perhaps parachutes will be regarded as aerial 'lifebelts' and not as aerial trapezes."

A Dayton, Ohio, paper, considers that "the exploit, merely as a record breaker, means nothing. A fall of one-tenth, even one hundredth part of the distance, would be fatal. Altitude merely increases the certainty of mutilation, not the chance of escaping death or injury. But as showing the efficiency of modern parachutes and thus indirectly increasing the safety of the airplane, the record is of great value. The airplane probably never can be made perfectly and entirely safe any more than the automobile can be made safe against falling off bridges or upending in ditches, or the ship safe against going to the bottom when it is not watertight. But the parachute, in the sense that life boats and life preservers help to make voyages on water less unsafe, is a valuable adjunct to the airplane. Its development to the point of the safety offered by life boats and life preservers will hasten not a little the period of general use of the airplane as a practical utility for pleasure or commerce."

AVIATION AND NEWSPAPER PUBLICITY

Among the several newspapers in this country which are doing their bit to encourage aviation is the Davenport (Iowa) DEMOCRAT AND LEADER.

Probably one of the main reasons why civil aviation in the United States is not on a par with that of Great Britain and France is the comparative lack of publicity given to aviation in the columns of our daily papers. British newspapers, it seems, devote considerable space to aeronautics, several of them utilizing special correspondents on aviation matters, so that it may be safely said that the average newspaper reader in England is pretty well informed on aeronautical activities in that country. Aviation publicity in our newspapers is of a kind tending to hinder instead of advance the industry, since most items we see concerning it are accounts of accidents. It is not expected that newspapers eliminate reference to airplane accidents. As in other modes of transportation, accidents in aviation are bound to happen, perhaps more so now than in the not distant future when the airplane shall have reached such a state of efficiency as to minimize the possibility of their occurrence. The average American newspaper reader is totally at a loss, however, when it comes to knowledge concerning the development and progress of the aviation industry in this country, and more space in the newspapers along that line, which would give the reader some of the good points in aeronautics and its accomplishments instead of only the dreary side of it would enable him to secure other than a merely one-sided view of the subject, would do much to enliven the interest of the general public in aviation and make for real progress.

CIVIL AVIATION LICENSES IN CANADA

The Air Board, Ottawa, Canada, gives a summary of civil aviation certificates and licenses issued, cancelled, renewed and still in force during 1920 and 1921.

During the year 1920, 10 applications were denied; 403 new certificates or licenses issued; 27 lapsed or were suspended; 23 were renewed; in force on December 31, 1920, 375.

During the period January 1, 1921, to October 31, 1921, no applications were denied; 244 new certificates or licenses were issued; 261 lapsed or were suspended; 117 were renewed, making the grand total of certificates or licenses in force on October 31, 1921, of 475.

DAYTON-WRIGHT MODEL FP-2 SEAPLANE ✓

The Dayton-Wright Co. recently completed the construction of its Model FP-2 seaplane, which embodies some highly interesting features. This plane was developed to satisfy the requirements of forest patrol services for an airplane specially equipped for aerial photography, mapping, surveying, inspection and timber patrol in territory otherwise inaccessible and having no other landing facilities than bodies of water. Such territories are particularly often met with in Canada, and for this reason a pilot of the firm spent several months in the Dominion to gather impressions as to the kind of service such a machine would have to perform in every day operation. As a result of his recommendations, special care was given in the design of this machine to four factors, namely, (1) wide angles of vision for the occupants, (2) comprehensive appointments for the crew, (3) provisions insuring the safety of the machine under almost any eventuality, and (4) adaptation of the machine to the special conditions under which it would be called to operate.

The type of construction adopted for the Model FP-2 answers the purpose of making maintenance cheap and easy. The upper and lower wing panels are interchangeable, and so are many of the fittings. The wing spars are of box construction, while the interplane struts are seamless steel tubes. The wings are fabric covered. The fuselage is built of four spruce longerons and a number of veneer bulkheads, and is covered with a special three-ply consisting of a core of Balsa wood and black walnut facings.

The cabin seats four persons in pairs, and thoroughly protects the occupants against the cold, and partly also against the noise of the engines. The cabin is reached from the float by means of a folding ladder and a door of liberal size, and folding doors provided in the roof act as emergency exits. Windows let in the sides and bottom of the fuselage afford excellent vision forward and directly downward. The window beside the pilot may be folded out of the way to insure increased vision, if desired. The two front seats may be arranged to swivel so as to face to the rear when the machine is afloat, and a folding table may then be placed between the four seats. The rear part of the fuselage affords a clear space of 15 x 4 x 4½ ft. which may be used for stowing baggage, camp equipment, provisions, folding canoes, etc. Folding bunks for four may also be provided if desired.

The power plant consists of two 420 hp. Liberty engines driving four-bladed tractor propellers. Originally two 210 h.p. Hall-Scott L-6 engines were fitted with pusher propellers, but the heavier engines have since been installed to insure a larger excess of power when flying on one engine, and also higher speed. The twin floats are of the shape which practical experience in the Naval Air Service has shown to have excellent qualities.

The specifications of the machine are as follows: Span, 51 ft. 5 in.; overall length 36 ft. 10 in.; maximum height 14 ft.; total wing area 668 sq. ft.; weight empty 5726 lbs.; weight loaded 7588 lbs.; ailerons 88 sq. ft.; tail plane 53.8 sq. ft.; elevators 29 sq. ft.; fins 20.8 sq. ft.; rudders 28.7 sq. ft.; wing section, USA-27; Incidence, 2 degrees; Dihedral 2 degrees; Gap 92½ inches. It is estimated that the high speed of the machine is 120 m.p.h., with an actual low speed of 63 m.p.h.; climb in 10 minutes, 5,000 feet (actual); service ceiling 18,000 feet (estimated); take off from water 22 seconds (actual); range 325 miles at 90 m.p.h. -- "Aviation and Aircraft Journal".

A BRITISH VIEW OF THE PULITZER RACE

The AEROPLANE (London) touching on the recent Pulitzer Trophy Race at Omaha, which was won by Bert Acosta, piloting a Curtiss-Navy Racer, at an average speed of 176.9 m.p.h., makes the following caustic comment on Acosta's performance:

"At first his speed was given as under 173 m.p.h., but as this was not a world's record it was no good to America, whose representatives remeasured the course a little longer which brought up the speed to the required figure. According to one American newspaper the Curtiss Navy Racer was fitted with an O.C.D. 12,400 h.p. motor and crossed the starting line at more than 250 m.p.h. This seems a very fair and modest estimate for such a powerful 'airplane'."

It looks as if someone is nursing a "grouch". Be that as it may, it would appear as though a little more education along aeronautical matters on the part of some newspaper editors would not be amiss.

NIGHT FLYING AT KELLY FIELD

Preparations have been made at Kelly Field, San Antonio, Texas, for night flying, beginning the early part of December, if conditions permit. The new XBIA planes, attached to the 13th Squadron for service tests, will be used. Almost all known tests have been applied to these ships, except cross country flying and their maneuverability in muddy landing fields. Captain Lloyd L. Harvey, the squadron commander, has requested permission to fly one of these ships to El Paso, Texas, on cross-country, and it is thought that this trip will complete the required tests. A number of suggestions for improvements have been received from the officers who have flown these ships, the most prominent among them being the provision of some means of eliminating the excessive friction in the ailerons and elevators.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

England.

Of the 27 machines turned out by the Aircraft Disposal Company, Ltd., for the Spanish Government, and which were to have been flown to Spain, 22 have arrived successfully. The remainder were damaged through forced landings due to minor defects, compelling the pilot to land on some impossible country over which they had to pass. Taking into consideration the fact that these were not special machines but merely disposal stuff which had been standing idle for two years or so, and that owing to the urgency with which they were required they were hurried together without time for special tuning, this feat is considered quite noteworthy.

A large airplane, which has been undergoing speed trials at Farnborough for the past few weeks, will probably be put through a full test very shortly. This machine is the biggest in the Royal Air Force. With its twin Siddeley-Deasy engines it can develop nearly 1,000 h.p. It has fighting turrets on each side of the fuselage, with provision for machine gunners and bombers. In the trials it will probably carry a crew of ten which, with the weight of the machine and its complement of guns, will bring the gross weight to something like ten tons.

- Nottingham GUARDIAN.

Croydon Aerodrome (London) has now a fresh point of interest for the visitor. The Air Ministry authorities have erected a large map showing the airways of Europe in black lines. Along these routes, at intervals representing ten miles, are nails on which small models of airplanes, marked with the sign of the respective companies, are hung. When a machine leaves Croydon, or is signalled as having left another airdrome for Croydon, its representative is placed on the map. An attendant moves it along the route from time to time, its progress being worked out by means of a knowledge of the speed of the machine. As many aircraft are now fitted with wireless, the pilot will signal down his position from time to time so that the position of the model on the board may be checked. Already firms, and friends of passengers, are finding the map of great use, while visitors to the airdrome appear very interested in watching the progress of the machines which they have seen leave.

AERONAUTICAL NEWS FROM OTHER COUNTRIES

France.

From France it is reported that the French Air Ministry has recently acquired a new aerial lighthouse which is said to eclipse entirely anything that has hitherto been attempted in the way of lighting up the air routes. The new lighthouse, which it is stated is to be erected on Mt. Africa, near Dijon, at an altitude of 1500 feet above sea level, will throw a light which, in clear weather, it is expected will be visible for a distance of 200 miles.

Mexico.

According to the November 28th issue of COMMERCE REPORTS, issued by the United States Department of Commerce, commercial aviation in Mexico is rapidly expanding, and thus giving proof of the increasing importance of this branch of the automotive industries. The Secretary of Communications of Mexico, according to El Comercio of September, 1921, has made arrangements with a foreign company with a view to establishing an aerial transportation service for passengers and cargo between Mexico City and Tampico. The operating company made the first trip with passengers, mail, and cargo on September 1, taking 2½ hours from Mexico City to Vera Cruz and 1 hour from Vera Cruz to Tampico. When the shipment of the 15 machines arrives, the services will be extended to include San Luis Potosi, Monterrey, Laredo, and Matamoros. A special service will be established between Tampico and Laredo.

A commercial aerial service between Juarez City and the City of Chihuahua is definitely planned. The distance between the two points is approximately 360 kilometers, and the journey takes 10 hours by rail and 12 hours by automobile. The airplanes, which will be piloted by American aviators, are expected to make the journey in less than two hours. Special flights are planned to mining camps and other nearby places, with the consent of the mine owners. The landing fields in Juarez City have been chosen, and permission has been obtained from the authorities of El Paso to use the field of Fort Bliss, near the frontier, for landing purposes.

Italy.

The Rome correspondent of the London TIMES states that Italy proposes to build another semi-rigid airship, the Napoli, on the same lines as the Roma, which was sold to the United States, but which will be longer in the body. The new vessel, which will be the largest semi-rigid airship in the world, will have a capacity of 58,000 cubic metres - 20,000 cubic metres more than that of the Roma. There will be 12 Spa 200 h.p. engines placed tandem fashion on three platforms. When only four of these engines are running, the airship will have a speed of 45 m.p.h. All engine repairs, even to the changing of the propellers, will be carried out while the airship is in the air. The car in its steel framework will have a captain's cabin containing all the instruments, cabins for passengers, a dining saloon, and an electric kitchen. There will be accommodation for 100 passengers, for whose benefit terraces will also be built on the top of the dirigible, to which there will be access by a ladder.

Spain.

In the course of trials carried out at Barcelona, the helicopter invented by the Spanish engineer Senor Pescara, rose one metre from the ground; the inventor then demonstrated that the machine could tilt either backwards or forwards, and turn in a circle. These trials were carried out in a garden sixteen metres long and ten metres wide, while a wind of thirty kilometres an hour was blowing. No cables or gas balloons were used as supports. Senor Pescara will continue his experiments in France. He intends shortly to bring his machine to the Villacoublay airdrome.

SQUADRON NEWS

Langley Field, Va., November 26.

Lieut. Clayton S. Bissel, who has been on duty with the Field Officers' School has received orders transferring him to the office of the Chief of Air Service, Washington, D.C. For several months Lieut. Bissel has served as Secretary-Treasurer of the Officers' Club at Langley Field.

A very enjoyable dinner and dance was held at the Club on Thanksgiving evening. About fifty guests from Fort Monroe were present at the dance.

Captain Brooks, who has been quite ill, is able to be out again.

Lieut. and Mrs. Souza and guests are spending a few days with Mr. and Mrs. Winchester, Waxera, Va.

Mrs. Brouse, mother of Major Brouse, arrived at the post on Wednesday.

Mrs. Miller entertained on Saturday evening with bridge, in honor of Lieut. Miller's birthday.

Mr. Harding, father of Capt. Harding, returned to his home in Brooklyn on Friday.

Major and Mrs. Hanley and Miss Millyear are spending a few days in New York.

Mr. and Mrs. Sterling B. Jordan are the guests of Major and Mrs. Van Kirk.

McCook Field, Dayton, Ohio, Nov. 24.

The Masquerade dance and card party conducted by the Athletic Association of McCook Field, Nov. 1, at the East Oakwood Club, proved to be quite a popular event. Feature dances were the special treats of the evening and the regular dance program was interspersed with circle one-steps and tag dances.

Lieut. Morse of the Airplane Section returned to his duties Monday, Nov. 15th, after a month's honeymoon trip through the east. Lieut. Morse was married October 10th to Miss Mildred Corrine Van Ausdal of Dayton.

Major McIntosh and Major Lackland have returned to the field from a very enjoyable hunting trip. Major Lackland left the field November 14th for Fort Sam Houston, Texas, where he will assume the position of Air Officer, 8th Corps Area.

Pope Field, Camp Bragg, N.C., Nov. 26.

During the past week Pope Field, with its flying personnel of two officers, was the scene of busy aerial activity. The regular fire patrol missions were flown, and in addition practices were made in cross country flying and in formations. These latter were two ship affairs, the rear plane flying number three position. Such demonstrations probably would have looked one-sided to anyone in the Air Service, but they delighted the natives of Fayetteville immensely. The report among them was that one plane had broken down and the other was towing it in.

Lieut. LeRoy A. Walthall, commanding Pope Field, received some much needed aid last week in the person of Lieut. E.P. Gaines, who was transferred from Camp Benning, Ga. As his share of the administration here, Lieut. Gaines drew the assignments of Adjutant and Supply Officer.

Ten additional enlisted men are needed at this field, and according to recent information these are to be recruited, if possible, from this vicinity. Therefore, Pope Field will soon inaugurate a recruiting drive, using airplanes to distribute propaganda over neighboring towns.

The Transportation Department was elated the past two weeks over the possession of a new motorcycle, but their joy was short lived. Private Fisher attempted a few stunts on it yesterday. He successfully accomplished a ground loop and a tail spin and then put her in a barrel roll. Private Fisher is slowly recovering in the hospital. The motorcycle will never recover.

Kelly Field, San Antonio, Texas, November 15.

A dance was given by the officers of the post at the Aviation Club on November 11th, which proved to be a great success. This dance was given for the purpose of complimenting the officers who recently returned from Langley Field. Special invitations were distributed. An excellent Menu was served. Each host and hostess was required to design the arrangement of their tables.

Kelly Field, San Antonio, Texas, November 15. (Cont'd)

An interesting program was carried out on November 10th at 7:30 p.m. at the Service Club No. 3, as follows: Religious services, led by the Chaplain, until 8:30 p.m., followed by a musical concert, combined with some stage numbers, which was enjoyed by all those attending. The affair was given under the direction of Chaplain Westcott.

The dance given by the enlisted men of the post last Tuesday was an enjoyable affair. A good jazz orchestra from the city furnished the music.

Kelly Field officers and ladies have been invited by the Fort Sam Houston Hunt and Race Association to their first ride and dinner dance, November 17th. The affair will be held at the Red Cross Building at Camp Travis.

Reserve officers assigned to the 2nd Group (Bomb.) for flying practice are: Captain W.P. LeBarron, 2nd Lieutenants Childress, Klaus, Ketzebue, Clayton and Hoffman. Although these officers are given plenty of opportunities for flying, they have not reported for flying practice during the past week.

Cross country trips during the past week by officers of Kelly Field were as follows:

To McAllen, Texas: Lieut. V.J. Meloy, pilot, Lieut. G.E. Hodges, passenger; Lieut. E.R. McReynolds, pilot, Corporal Colson, passenger; Lieut. E.R. McReynolds, pilot, Lieut. G.E. Hodges, passenger; Lieut. P.E. Slane, pilot, Corporal Niemi, passenger.

To Del Rio, Texas: Lieut. E. T. Selzer, pilot, private White, passenger; Lieut. E.V. Harbeck, pilot, Lieut. Snyder, passenger.

To Ellington Field, Texas: Lieut. W.T. Larson, pilot, Sgt. Madden, passenger.

To El Paso, Texas: Lieut. S.C. Hinkle, Pilot (solo).

A reception and dance in honor of the officers and ladies of the 17th Infantry will be held Tuesday evening, November 15th, at 9 o'clock, at the post gymnasium. Kelly Field is invited.

A football game was played between Kelly Field and San Antonio College, resulting in a victory for the airmen 21 to 0. Another game has been scheduled for next week at Kelly Field with the Fort Sam Houston Engineers.

The Polo Tournament opens at Fort Sam Houston next Sunday, and Kelly Field will be ready to engage with Fort Sam Houston. In the meantime the players of Kelly Field will open their tournament on November 13th, playing the 2nd Division at Camp Travis.

Twenty-one cross country flights were made during the past week by the 3rd Group (Attack), and a total of 148 hops of all description.

Seventeen ships were furnished for the formation flight on Friday, Armistice Day, led by Major Heffernan. The flight was successful and despite the sultry weather, which made landings somewhat difficult, no accidents happened. Four of the ships were of the new XBIA type, and they had a chance to show off before the DH's. They were well up against those present in the formation. The ships took off about 11:15 a.m., and returned in about half an hour after twice circling the Alamo Plaza at San Antonio.

The Officers' School has started, and a full attendance is being had every day.

Lieut. J.R. Glascock, 8th Squadron, has been granted leave of absence for 60 days and has started on a motor trip to California, where he intends to visit relatives and friends.

Master Sergeant Ralph Bottriel, who holds several records as a parachute jumper, has reported for duty with the 8th Squadron. Sergeant Bottriel was stationed at McCook Field.

Major Henry J.T. Miller, has been announced as Commanding Officer of the 2nd Group (Bombardment), and 1st Lieutenant Vincent J. Meloy, formerly commanding officer of this Group, has been appointed C.O. of the 8th Squadron (Attack) vice 1st Lieut. John R. Glascock, relieved.

1st Lieut. Wm. J. Hanlon has been relieved from his present duty with the Quartermaster and ordered to report to his organization for further instructions.

1st Lieut. R.C.W. Blessley has been placed on duty at Group Headquarters (Bombardment) as Operations Officer, replacing 1st Lieut. Wm. J. McKiernan, Jr., transferred to the 3rd Group (Attack).

In addition to his regular duties, 1st Lieut. James A. Mollison, post adjutant, has been appointed post clearance officer, vice 1st Lieut. Theodore J. Koenig, relieved.

1st Lieut. S.C. Hinkle made a cross country trip on November 7th to Fort Bliss, Texas, and returned the next day.

Kelly Field, San Antonio, Texas, November 15, Cont'd.

1st Lieut. D. H. Dunton, with Major Miller as passenger, flew to Ellington Field on November 9th and return, for a total flying time for the trip of 4 hours and 25 minutes.

1st Lieut. C. A. McIver with Lieut. Solomon L. Van Meter as passenger, made a cross country flight to Ellington Field, Texas, and return, on November 9th, total flying time 4 hours and 20 minutes.

Major John H. Pirie, with Captain T. H. Shea as passenger, flew to Austin, Texas, and return in 2 hours and 10 minutes flying time.

The total flying time for the 2nd Group (Bombardment) during the past week was 165 hours and 45 minutes, the missions being instruction, practice, test, photography, cross-country and solo flying.

Hqs. Detachment, 4th Group (Obs.) Paranaque Beach, Manila, P. I. Oct. 9.

On the afternoon of September 30th, 1st Lieut. C. Bettis made a trip to Lingayen in a DH4B plane. The distance to Lingayen is about 100 miles, and Clark Field, Camp Stotsenburg, located at the half way point between Manila and Lingayen is the only landing field.

On Friday, October 6th, Major B. Q. Jones, Air Officer, with 1st Lieut. C. Bettis as observer, flew a DH4B from Paranaque Beach to the City of Lucena, located on the southwest shore of Layabas Bay, for the purpose of observing and locating, if possible, landing fields in this vicinity. Several sites were flown over and considered, but were rejected due to the fact that they are too small. A suitable site was finally located north of the town which, with a little development, would make a very good landing field. During the trip it was necessary to fly over Mount Banahao at an altitude of 8,000 feet.

During the past week the Headquarters Detachment has received 15 men from the 17th and 27th Balloon Companies stationed at Corregidor.

Hqs. 12th Squadron (Obs.) Fort Bliss, Texas, Nov. 19.

On November 11th, at 8:00 a.m., Lieutenants Pearson and Milyard left the Fort Bliss Airdrome on a cross-country trip to Fort Sill, Oklahoma, in a DH4B airplane specially equipped for cross-country flying. These officers made a non-stop flight to their destination in 6 hours and 40 minutes. The return trip to El Paso was made in 6 hours and 20 minutes. The distance from El Paso to Fort Sill is approximately 771 miles, making the average speed of the outward trip about 115 miles per hour and the return trip about 121 miles per hour.

1st Lieut. Stacey C. Hinkle, who was transferred to the 12th Squadron from Kelly Field, reported to the C.O. of this organization for duty on November 18th.

San Antonio Air Intermediate Depot, Kelly Fld., San Antonio, Tex., Nov. 23.

On Tuesday evening, November 22nd, the losing teams of the Officers' Baseball League gave a dinner dance at the Menger Hotel to the winning teams, a good crowd being present from the fields participating in the sport during the summer season. The losers have not lost heart, however, and it is believed that they will all have their heavy sluggers out to get revenge next season.

On Friday evening, November 25th, the officers of the Depot will give a dance, to be held at the Aviation Club, Kelly Field No. 2. This is to be in the nature of a mechanics' dance, and all officers and their ladies will be expected to appear in mechanics' suits. It is expected that a large crowd will be present, as the officers of the San Antonio Air Intermediate Depot expect to "whoop" it up and make it a big thing.

In the recent Red Cross drive, the San Antonio Air Intermediate Depot went 100% strong, collections amounting to \$450.

The repair branch of the Depot is now in full swing and turning out many planes. During the past two weeks the following planes and motors have been turned out: 12 DH4B airplanes, 1 DH4A photographic and 1 SE5A airplane; also 7 Liberty motors have been completely overhauled.

During the past two weeks there have been delivered to Post Field, Fort Sill, Okla., 8 DH4B airplanes; 7 DH4B airplanes and 1 DH4B Photographic airplane to Kelly Field No. 2, and 1 SE5A and 1 DH4B airplane to Ellington Field.

Deliveries for the near future call for the following:

For Ellington Field, 17 SE5's and 4 DH4B airplanes.

For Post Field, Fort Sill, Okla. 29 DH4B airplanes.

For Kelly Field No. 2, 12 DH4B airplanes, 4 XBIA's, 3 DH4B Photographic, and 1 SE5.

There are 400 employees engaged in keeping the Air Service fields in this vicinity supplied with ships and equipment.

Kindley Field, Fort Mills, P. I., Oct. 8.

Early Wednesday morning three H.S. 2 L. flying boats, piloted by Captain Ervin and Lieuts. Dallas and Franklin, left this station for Tayabas Bay. The planes left Fort Mills at 6:10 a.m. and returned at 10:25 a.m. Due to motor trouble Lieut. Franklin was forced to land twice, once between Balaya and Batangas Bay on the down trip and again on account of a broken windmill pump. Nevertheless, all three planes returned safely.

1st Lieut. John B. Patrick, from Department Headquarters, visited this station on Friday, October 7th, on official business, and returned to Manila on Saturday in a Burgess N9H seaplane.

On Saturday, October 8th, the entire garrison was inspected by Captain Ervin, garrison commander, no irregularities being found.

Lieut. Ellicott made three test flights in a Burgess N9H seaplane on October 7th.

No unusual maneuvering has taken place in the 17th Balloon Company during the past week.

First Lieut. Elmer J. Bowling and family have left the field on a thirty days' leave of absence to visit China and Japan.

Clark Field, Pampanga, P. I., October 8.

During the week Major A. H. Gilkeson, commanding Clark Field, and Captains L. N. Keesling and L. C. Midcap were called on as technical assistants to the Department Air Officer, Major B. Q. Jones, to fly to Manila, thence by seaplane to Corregidor, for the purpose of inspecting Kindley Field. The return to this station was made on the same day. First Lieut. John B. Patrick, assistant to the Department Air Officer, visited the field on October 5th and 6th, and during his stay here conducted aerial gunnery inspection tests.

Lieuts. Wm. Sweeley and L. C. Webber are rejoicing at having received unofficial news of their future assignment to Crissy and Rockwell Fields, respectively, to sail on the December 5th transport. They nearly took off the roof of Headquarters when the news was broken to them, as a more desirable assignment could not have been received by them. Clark Field is sorry to lose them.

The new baseball diamond having been completed, enthusiasm has been renewed and now the phonograph belonging to Lieut. Ed. Johnson (better known as Johnnie) has found some more pleasant competition (pleasant to the rest of the personnel but execrable to Johnnie), whose very existence depends on jazz for breakfast, lunch and dinner. Those who have babies of the right age, in cooperation with the embryo band of the enlisted men, have futilely attempted to drown Johnnie's jazz out of the air, and now that the ball rooters have joined there is high hope of succeeding.

First Lieut. G. W. Pardy, upon orders from Department Headquarters, subsequent to an air inspection made with Major A. H. Gilkeson, toured the territory between Clark Field and Manila in an automobile for the purpose of inspecting such fields as might prove of value in emergency landings. While eleven fields were reported upon, none were found suitable for other than strictly emergency landings, from which it can be readily concluded that this is "some" country to fly over. The cooperation of those of the populace who "savvy" at all is excellent, particularly of any American concerns called upon for assistance. At one point where the location to be inspected was inaccessible by road, a sugar company placed an engine, flat car and hand car at the disposal of Lieut. Pardy, by which means over 45 miles of territory was covered. Lieut. Pardy reports that in traveling via hand car some parasitic native foreman would hop on at every mile until there were almost twice as many passengers as crew. The hand car made many more miles at better speed than the engine, which perforce had to creek over tracks that reconnoitered every ant hill in the country.

France Field, Cristobal, Canal Zone, November 19.

Hotel Washington last week was the scene of a dance given by the officers of France Field. President and Madame Porras, of the Republic de Panama, were present and were introduced to the other guests by Major and Mrs. Walsh. A delightful time was had by all, as the refreshments and music were beyond reproach. The dance was voted as being the most successful that has been staged in the Canal Zone.

Lieut. and Mrs. Connell arrived last week on the S. S. COLON from the States, where they have been on leave for the past three months.

Leave of absence for two months, with permission to visit the United States, has been granted Captain A. C. George, who sailed from Cristobal last Thursday.

Work with the Coast Artillery has begun, and the post will be busy for the next month and a half to keep up with the Forts on both ends of the Canal.

March Field, Riverside, Calif., Nov. 14.

The entire post, with the exception of the necessary guard, attended the Armistice Day football game at Pasadena and did their best to outroot the "Gobs", even though hopelessly outnumbered. Despite the fact that the 9th Corps Area team was beaten 24 to 0 by the Pacific Fleet outfit, they are far from discouraged and predict a win for the Army next year. The team was organized rather late in the season, and lots of good football material was overlooked. Next year, however, they will be out early and promise to get revenge. The Navy team looked good with All-American Ingram in the backfield, but without him it is doubtful if they would have shown to good advantage this year. Captain Emlin was named as the star of the Army team by the Los Angeles papers, causing March Fielders to seek for shoe horns in putting on their hats. Captain A. W. (Doc.) Smith, formerly Flight Surgeon at March Field, was line coach for the Army eleven, and got into the game himself in the last quarter. His presence in the game gave the Navy considerable worry, and several sore ribs by which to remember him.

Captain F. I. Emlin, who has been on temporary duty at Camp Lewis, Wash. with the 9th Corps Area football team, was a visitor at March Field on Wednesday, November 9th, having come south with the team for the Army-Navy football game at Pasadena. Captain Emlin reported for duty at March Field on November 14th.

Captain and Mrs. A. W. Smith left Riverside by automobile on Monday, November 14th, for Crissy Field, Presidio of San Francisco, Calif., where Captain Smith will assume the duties of Flight Surgeon. They were accompanied by Mrs. Peabody, who is going to the Letterman General Hospital, San Francisco.

Lieut. H. A. George has received orders to appear before a promotion board, of which Major Peabody is president.

Lieuts. Gullet, Schram, Minter, Morgan and Maderaz and Cadets Montieth, LeBreton and Johnson landed at March Field on November 9th, having flown down from Mather Field. They proceeded to Rockwell Field on Wednesday afternoon and returned Thursday with four new DH's for Mather Field. They remained here until after the Armistice Day football game, and upon their return to Mather Field were accompanied by Lieuts. Melin and Smith of March Field.

The rivalry between the officers of the 19th and 23rd Squadrons, stationed at March Field, has been for the time being diverted into baseball channels. They indulged in the National Pastime last Thursday, using an indoor ball, and when the dust had settled and the smoke from the fiery language of Pitcher Laughinghouse of the Bombers had blown away, the pursuers were found roosting on the long end of an 18 to 11 score. Laughy's home run and his crabbing at his support, or lack of it, were the features of the game. Now the bombers, with twice the tonnage of the Pursuers, are asking "How about a tug of war?"

Crissy Field, Presidio of San Francisco, Calif., Nov. 19.

Crissy Field is a busy place these days. The construction of the field being over, about one hundred men are busy daily in beautifying the post. Lawns are being made between the buildings, new sidewalks are being put in, roads and sidewalks are being ornamented with rock-work, and the flying field is being levelled and smoothed.

Crissy Field, Presidio of San Francisco, Calif., Nov. 19. (Cont'd)

The transportation of the 91st Squadron, after a long forest patrol season, is being painted and put in serviceable condition for storage until further needed. In the same way, the airplane equipment of the 91st Squadron is being repaired and repainted after the past summer's use.

Crissy Field airplanes observed for Battery Spencer's guns, fired by the 10th Company, C.A.C., on November 15th. Staff Sergeant Cecil B. Guile was pilot and Staff Sergeant Martin L. Helpman observer on the firing of the 12 inch barbette carriage guns. Ten shots were fired at distances greater than 10,000 yards. The observation was a success, checking with the terrestrial observers in every case to a few yards, radio being 75% efficient. The weather was excellent, flying time required three hours and five minutes.

The new speed launch assigned to Crissy Field will shortly be in serviceable condition. The boat has been secured through the kindness of Col. Yates, in the Office of the Area Quartermaster, and is a distinct asset to the equipment of Crissy Field. This station has long attempted to procure a boat of this kind, but its efforts hitherto have been unsuccessful.

Major H.H. Arnold, Air Officer, 9th Corps Area, Lieut. H.A. Halverson, Assistant Air Officer, Captain Lowell H. Smith and Lieut. Eugene C. Batten, of the 91st Squadron, with Colonel Hanna and Lieut. Koger of the 9th Corps Area Headquarters, as passengers, arrived early in the week from March Field, after a visit to the southern part of the State on an official tour of inspection. Lieut. Halverson had a thrilling return trip, being about seven hours on the way, with one landing at Bakersfield, Calif., for gas. The whole party attended the game on Armistice Day at Pasadena.

Mr. and Mrs. A.G. Bates, son-in-law and daughter of General C.A. Devol, Menlo Park, who have been visiting Major and Mrs. Brett, left Sunday for New York, via New Orleans.

The officers and ladies of the post are congratulating Lieut. and Mrs. Arthur G. Liggett on the birth of a son, Arthur G. Liggett, Jr.

Major W. A. Robertson, A.S., was a visitor at this field during the past week, and flew down to Mather Field with Sergeant Westover of the 91st Squadron (Observation) on official business. Major Robertson was at one time commanding officer of the 91st Squadron, and is a frequent visitor to that organization. At present he is in charge of the Air Service Officers' Reserve Training Unit at the University of California, Berkeley, Calif.

Hors 5th Group (Obs.) Luke Field, H.T., October 31.

While the Press Delegates to the International Congress were assembled in Hawaii, the Hawaiian Department staged a huge Military Show, which was participated in by every branch of the service. The Governor of the Territory, all press delegates, and many civilian guests were invited to attend, and occupied a grandstand specially constructed for the purpose at Schofield Barracks. The Air Service was allotted one-half hour in the program, and demonstrated the following:

1. Aerial combat between a Fokker and a Curtiss-Wright to indicate the progress that has been made in plane maneuverability.

2. Bomb Raid - five DH4's in V formation dropped ten 100-lb. demolition bombs on a target in full view of the grandstand. All bombs dropped simultaneously, well grouped.

3. Radio telephone communication - one Curtiss-Wright equipped with a radiophone established 2-way communication with a mobile hut located near the grandstand and equipped with a magna vox, which transmitted messages which were audible to all spectators.

4. Attack Raiding - The five DH4's, after completing their bombing in V formation, maneuvered into single file attack echelon and carried out a series of dive attacks on a small canvas target located $\frac{1}{4}$ mile away from and directly in front of the grandstand. Marlin and Lewis guns were used during the raid, and all shooting was extremely destructive.

5. Passing in Review - The last five minutes of the Air Service half hour were devoted to passing in review at low altitude. All observers stood at attention as the planes passed the reviewing stand, where the Commanding General took the salute.

All events were displayed on the exact schedule and were run off without a hitch.

Major Stratemeyer, who arrived recently from the States, is now commanding office of Air Park No. 10.

Hqrs. 5th Group (Obs.) Luke Field, H. T., October 31, Cont'd.

Captain Robert Oldys, Group Operations Officer, was married in Honolulu on Saturday, October 22nd, to Mrs. Eloise Wichman Nott, of Honolulu.

Major John B. Brooks, Commanding the 5th Group, has been appointed the Constructing Quartermaster for Luke Field, and will take over the construction project now under way at this station.

Lieut. Ulric L. Bouquet and Sergeant V. E. Vickers, A.S., were both killed in a DH4 crash from 2000 feet altitude on Wednesday, October 26th, after attempting to join a three-ship DH formation.

Bolling Field, Anacostia, D.C., November 30.

The past few weeks have brought some notable changes in the strength, personnel, morale and organization at this station. By the addition of over a hundred recruits, the personnel is now nearly up to full peace strength. Only lack of housing space has prevented filling up the quota entirely. The excellent recruiting work which has produced this result in such a short time was handled by Lt. Maitland and a detail of soldiers from this station, working without funds. They have established a record which other recruiting parties are finding difficult to follow.

Work on the addition to the soldiers' barracks and on the officers' quarters has actually been started, and huge piles of lumber and materials have made their appearance.

The reorganization of the 10th Squadron into Air Park No. 1 has been completed and all flying operations are now conducted by the 99th Squadron. The organization of Photo Section No. 3 is also now completed, and it is in its new quarters.

The addition of these recruits has relieved the great strain to which the previous small personnel was subjected in trying to carry out the operations of the station, and as a result the morale of the whole station has taken a decidedly upward leap.

A football team, organized under the direction of Captain Scott and Lieuts. Ramey and Kirksey (head coach) have won all four games played without being scored on by its opposition. In this respect they have fully lived up to this station's team last year, when it won the 3rd Corps Area championship and was not scored on all season. On November 6th the team won its opening game from the much heavier Arlington A. C. eleven by the score of 10 to 0. On November 16th, they triumphed by the score of 14 to 0 from their friends across the field, the Naval Station, and three days later, on the 19th, they outplayed the heavier and well drilled team from the Marine Barracks and beat them 14 to 0. On November 26th they won a hard battle from the Naval Hospital eleven by the score of 7 to 0.

Basketball is next in order, and the squad is being made up early so that plenty of practice can be had before the season starts.

The officers in their club room and the enlisted men in the recreation room celebrated Hallow'een night with regular old fashioned parties and dancing. The decorations were appropriate and striking. In spite of bad weather the rooms were crowded and every body had a royal good time. There was plenty of sweet cider and eats on hand. These dances are to be continued monthly, and the interest shown by all concerned assures their success.

Aberdeen Proving Ground, Md., November 29th.

Recently a flock of geese landed on the aviation field, evidently having been attracted by the landing "T". Since then all doors and windows have been kept closed to keep wild fowl out, and the officers go armed with shotguns for self protection.

The Air Service officers, reinforced by Major McDonnell from Massachusetts Institute of Technology and Major Walton from the Office of the Chief of Air Service, have wrought havoc among the geese and ducks on Romney Creek.

The various ranges of mountains are being moved into the valleys without the assistance of Mahomet. When it is realized that the center of the field is 32 feet higher than the edge, it can be readily seen that this is "some" job. When completed there will be four runways, each 2,000 feet in length and 300 feet wide, making this an excellent field.

Ellington Field, Houston, Texas, November 19.

The work of rehabilitating the post goes on apace, the flying training, both school and tactical, being carried on uninterruptedly, and all this with an officer personnel reduced to the point where organizations have only one or two officers present for duty.

The work of repairing the road through the post was commenced by filling in the worst of the holes. It is expected that the road will thus be shortened several miles. The new dentist, Captain Tiesing, also has expressed himself as highly in favor of the improvements.

General Hines, accompanied by Major Spatz, who is slated to take command of the post shortly, inspected Ellington on November 9th. Captain Baucom led a formation of seven SE5's, which demonstrated with dummy bombs the methods of pursuit bombing developed at Langley Field, Va., during the recent maneuvers. General Hines made a short talk to the officers, expressing pleasure at the condition of the post and the progress being made. After the inspection a reception was held in the new Officers' Club, where tea, cigars, music and conversation were served.

The following-named officers have reported from temporary duty at Langley Field, Va., where they aided in administering capital punishment to the capital ships or, as some would have it, putting the naught in the dreadnaught: Captain Byrne V. Baucom, 1st Lieuts. L.S. Andrews, Richard T. Aldworth, Sam L. Ellis, Samuel G. Frierson, David G. Lingle, Thomas K. Matthews, William C. Morris, Hiram W. Sheridan, George P. Tourtellot and Ennis C. Whitehead.

Lieut. Richard Aldworth reported to Ellington Field on November 16th, and related incidents in connection with some very thrilling rides he experienced at McCook Field, and at Louisville, Ky. He was very much pleased with the performance of some of his mounts. It also seemed that he had a considerable portion of McCook Field in his luggage, and perhaps the most interesting exhibit was the 50 calibre machine gun ammunition, a cartridge so long and menacing that it reminded the old timers here of our affable mosquitos.

On account of being situated so far from town practically all of the officers have obtained more or less recalcitrant automobiles for their municipal duties. The local Ku Klux is preparing for extra duty.

Mather Field, Mills, Calif., November 14.

The members of the 9th Squadron (Obs.) commanded by Lieut. Wm. S. Sullivan, joined forces with patriotic societies of Sacramento in observing Armistice Day. Quite a huge and very well organized parade was held in town on the morning of the 11th. On Sunday evening, Nov. 13th, a special Armistice Day service was conducted by Chaplain Kelley at the Service Club, consisting of patriotic recitations and songs.

Lieut. Gullet, Madarasz, Morgan and Schramm, with Cadets Johnson, LeBreton and Montieth, left for Rockwell Field by air on the 9th for the purpose of ferrying much needed new planes to this station. The two classes of flying cadets here maintain regular flying hours, making the lack of a sufficient number of new ships keenly felt. The flyers returned late on the afternoon of the 13th.

Three officers of the post took advantage of short leaves when Attorney A.J. Reynolds of Sacramento invited them on a fishing trip in the vicinity of Fort Jones, Calif. They came back weary but jubilant, and laden down, each having caught the limit on salmon and trout. The Officers' Mess was plentifully supplied and each household on the post had one or two delicious fish dinners during the week provided by the fishermen.

The two detachments of enlisted men, each group in charge of a cadet, which were sent out for fall training in advanced radio work, returned to the post after establishing radio stations at Visalia and Montague. Flying Cadets of the class which will graduate within the next six weeks have been assigned as instructors and supervisors in a number of such missions, and their work has been highly commendable. Lieut. Ned Schramm, A.S., with Radio Engineer Richards, inspected both stations before the detachments were called in, and their reports indicate that the men have worked in a most satisfactory manner. The interest that nearly all young men have in radio has made the radio classes the most popular ones with the soldiers in the post schools this season.

Private Frank Nowakowski, familiarly known on the post as "Novey", the champion bantam-weight of the 9th Corps Area, met Angelo Silva in the ring at Oakland on the 9th. The bout was declared a Draw, but they are scheduled to battle again the coming Wednesday and, of course, Frankie has the backing of everyone at Mather Field.

Lieut. Eugene Bayley and his bride returned from leave on the 11th. They have decided to live on the field instead of securing a house in Sacramento.

Miss Emma J. Shellhorn of Minneapolis is the guest of Lieut. and Mrs. Ralph W. French, Q.M.

The ladies of the post have organized a Bridge Club, to meet each week. Mesdames F.H. Poole, J.W. Slattery and G.A. McHenry were elected officers of the club. Their plans are to have each member entertain the club in turn each week, and they are looking forward with much pleasure to the winter's social activities.

The purpose of this letter is to keep the personnel of the Air Service both in Washington and in the field informed as to the activities of the Air Service in general, and for release to the public press.

FOR RELEASE DECEMBER 28, 1921.

ESTABLISHMENT OF A BUREAU OF CIVIL AERONAUTICS IN THE
DEPARTMENT OF COMMERCE.

Legislation, which will have a far reaching effect on the future of commercial aviation in the United States, is embodied in a Bill (S. 2448) recently introduced in the Senate by Mr. Wadsworth, an exact duplicate (H.R. 9184) being introduced in the House of Representatives by Mr. Hicks. This bill provides for the establishment of a Bureau of Civil Aeronautics in the Department of Commerce, under the jurisdiction of the Secretary thereof, and for the appointment of a Commissioner of Civil Aeronautics as the head of such bureau, an Assistant Commissioner, and the necessary operating personnel.

Among the various duties assigned to the Commissioner of Civil Aeronautics under the provisions of the bill are:

The registration, identification, inspection, certification or licensing of all civil airdromes or air stations; and the inspection of the design and construction of civil aircraft and the licensing of the operation thereof.

The regulation of the navigation and operation of civil aircraft through the establishment of aerial traffic rules and regulations, in order to safeguard life and property.

To foster civil aeronautics by designing, approving, mapping and laying out air routes; by establishing and encouraging the establishment of landing fields and air stations; by establishing and operating meteorological services in cooperation with the other departments of the government; by establishing and operating communication and signalling systems; by studying the development of aeronautics in the United States and other countries; and by the collection and dissemination of information relative thereto.

To operate such air services as the Secretary of Commerce may deem necessary for inspecting, licensing, regulating and controlling the operation of civil aircraft, and the mapping and laying out of air routes, airdromes and air stations and the policing thereof.

The bill makes it unlawful to navigate any aircraft in violation of the provisions thereof, or any regulation promulgated in conformity therewith, and makes violations punishable by a fine of not exceeding \$1,000 or by imprisonment for a term not exceeding one year, or both.

The Commissioner of Civil Aeronautics is authorized to fix fees and charges for the inspection, registration and licensing of aircraft, airdromes, stations, etc., and will be required to keep available at all times an up-to-date comprehensive survey and inventory of all civil and industrial aeronautical resources within the United States, and publish quarterly a bulletin setting forth all licenses issued, together with field reports of all flying activities, accidents, and field and route data, under the control of the bureau.

District courts of the United States shall have exclusive jurisdiction over all claims and controversies involving aircraft, airdromes, and air stations, their owners, lessees, charterers, and operators licensed under this act.

The creation of a bureau for the development of air navigation was strongly urged by the National Advisory Committee for Aeronautics in its annual report, recently submitted to Congress by the President, as noted elsewhere in this issue of the NEWS LETTER.

The beneficial effects of the proposed legislation cannot be overestimated, and the enactment of same into law will serve to fill a long felt need in the aviation industry of this country, creating as it does a proper organization to

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centralize many of the activities and to specialize in the development of civil and commercial aeronautics.

One of the great drawbacks to the progress of civil aviation in this country is the accident bugbear. In a previous issue of the NEWS LETTER there was quoted a report given out by the Manufacturers Aircraft Association concerning accidents in commercial aviation, which showed that most of the fatal accidents occurred in converted war machines piloted by so called "Gypsy" flyers. The registration, inspection and licensing of aircraft will eliminate the possibility of a flyer taking any old creak of an airplane and embark on the business of taking up passengers for aerial flights.

There is today not only an utter lack of national regulations governing aerial navigation, but a dearth of airports, the last report of the Manufacturers Aircraft Association giving the number as 271, of which 145 are municipally owned, 69 privately owned, and the remainder operated by the Army, Navy, Marine Corps and Aerial Mail Service. The United States has thus one airport for every 14,000 square miles of territory - an apt illustration of the slow progress of aerial communications in this country.

It will be seen that through the provisions of the Wadsworth Bill an endeavor is made to correct the deficiencies above mentioned and, in addition, to establish and operate communication and signalling systems and meteorological services. The bill appears to go a long way towards safeguarding, and promoting the stability of, the aviation industry in this country. This assurance of Federal supervision of aeronautics, combined with the knowledge that the government is fostering and encouraging it, should tend to bring the business men of this country to a realization of the fact that commercial aviation is not a mere adventurous project, but a sound business proposition.

The success of business enterprises of the present day depends in a large measure upon credit and insurance, and the successful operation of any transportation venture can be assured only if the public is protected against injury or property damage resulting from the use of unfit equipment or the employment of unskilled crews, or both. With the existence of a Federal agency to determine the airworthiness of aircraft and the competency of pilots, there should be no further reason for the existence of prohibitive rates of insurance. Furthermore, the knowledge that no aircraft will be permitted to navigate the air unless it is proven to be thoroughly airworthy and the pilot thoroughly competent should tend to dissipate whatever doubt on that score may have been possessed by those who have heretofore had no confidence in aerial transportation and who have been wont to look at aviation from afar.

Another feature of the bill - one that will tend to relieve the anxiety of owners, lessees, charterers or operators of aircraft in connection with the matter of accidents, is the provision that they shall be entitled to the same measures of exoneration from the limitation of liability as are provided under existing law for the owners, lessees, charterers or operators of vessels.

SOME FAST TRAVELING IN THE AERIAL MAIL SERVICE

Pilot Claire K. Vance of the Aerial Mail Service must have surely had some wind on the tail of his plane when, on November 21st he made the trip to Elko, Nevada, from Reno, Nevada, a distance of some 235 miles, in one hour and twenty minutes. There have been hints cast that Vance was a speed demon, and now it goes without saying.

NEW AERIAL MAIL HANGAR AT CRISSY FIELD

Mr. Caldwell, Air Mail Superintendent, has let the contract for a new hangar at Crissy Field. Work was begun on November 28th, and it is expected that construction will be completed and the hangar ready for occupancy in thirty days. The hangar now used by the Air Mail Service will be turned over for the use of the Reserve Squadrons now organizing in the vicinity of San Francisco.

TO INCREASE ACTIVITIES OF AERIAL MAIL SERVICE

Mr. Glenn L. Martin, of the Glenn L. Martin Co., Cleveland, Ohio, and Assistant Postmaster Shaunessy are expected at Crissy Field, Presidio of San Francisco, Calif., in the near future for a conference with Major H. H. Arnold, 9th Corps Area Air Officer, and other army officials. Much is looked for as a result of their conference in furthering the activities of the Aerial Mail Service and as a stimulant to the number of civilian flyers in the Bay region of San Francisco.

FOREST SERVICE CONFERENCE AT MATHER FIELD

A big Forest Service conference was held at Mather Field, Mills, Calif., during the latter part of November, which was attended by approximately 50 of the leading members of that service. The representatives from the National Headquarters were Chief Forester W. B. Greeley, with Messrs. R. Headley, Assistant Forester; E. W. Kelley, Fire Inspector; and C. E. Rachford, Grazing Inspector. District Foresters Fred Morrell from Missoula, Montana; A. S. Peck, Denver, Colorado; F.C.W. Pooler, Albuquerque, N.M.; R.H. Rutledge, Ogden, Utah; and Paul G. Redington, San Francisco, California, were present with their forest supervisors, fire specialists, rangers, law enforcement specialists, chiefs of operation, fire assistants and the administrative assistants; men in charge of personnel and training; and men who look after public relations and make a specialty of research work in the interests of fire prevention.

A lengthy program was originally planned, but the important questions involved were so numerous that it was found necessary to hold sessions every evening as well as in the mornings and afternoons of each day, causing a considerable curtailment of the hospitality planned to be extended to the Forestry Service by the command at Mather Field in the matter of social affairs.

In addition to the Federal Forestry representatives there were present Messrs. D. R. Cameron, Forest Inspector of British Columbia, Don Bruce, Professor of the University of California, and M. B. Pratt, Deputy State Forester of California.

The conference was brought to a close on November 26th and, although some of the members left earlier in the week, the majority remained until Saturday afternoon, when the few who had brought their cars started on motor trips home to San Francisco and points in Oregon and New Mexico, the balance leaving by train. The lecture delivered during the week by Mr. Paul G. Fair, Constructor of Exhibits of District No. 5, for the information of the foresters, was also attended by nearly everyone on the post. Aside from the entertainment afforded by the showing of attractively colored slides and the rather technical information given on the mounting of wild animals, many new ideas on the taking of photographs were gained. The conservation of animal life is a part of the work of the Forestry Service, and Mr. Fair's talk was of practical help, or will be so, to many of the foresters when they get out in the field.

Mr. Fair's forestry exhibit at the Officers' Club has been a source of much interest and enjoyment to everyone. An harmonious background, painted, the foreground on the right burned off in a fire started by a lighted match carelessly thrown into dry brush, the middle area cleared by the forest rangers' work, thereby stopping the progress of the fire, and on the left side of the exhibit green trees, shrubs and bushes, making a safe retreat for the wild animals of the wood, together with two perfectly mounted specimens of young deer standing in the foreground, presented a very attractive picture. Many pictures taken by Mr. Fair, showing the cooperation between the Forestry and Air Services have been hung in the club, temporarily, and excellently executed small models of campers with their properly equipped tent and correctly arranged camp fire have been erected.

The night before the foresters left they gave a stag party at the Club to the officers of Mather Field, entertaining them with songs, recitations, impromptu speeches, etc. Clever cartoons, of both the foresters and officers, drawn by one of the former, occasioned much hilarity, but no wounded feelings. Refreshments were served during the entire entertainment, which did not break up until after twelve o'clock, and everyone attending pronounced the affair a huge success.

BOMBING PLANE WITH PASSENGERS SETS NEW ALTITUDE RECORD

A report has been received from the Chief of the Engineering Division at McCook Field, Dayton, Ohio, that a Martin Bomber of the latest model, equipped with superchargers, and with Lieut. Leigh Wade as pilot, made an altitude flight on December 7th to 21,000 feet, with four passengers and no bomb load. The plane was still climbing and could have gone much higher but for the fact that the observer, Roy Langham, was made insensible due to the lack of oxygen.

On the afternoon of December 8th the Martin Bomber, equipped with superchargers, Lieut. Leigh Wade piloting, went to 25,600 feet and then ran out of gasoline. The pilot switched the gasoline tank to the emergency tank, but the lines were frozen, so that they were forced to discontinue the climb. The personnel suffered no inconvenience, having a large supply of oxygen. The bomber was still climbing, and it is estimated that it can go to approximately 28,000 feet.

This is believed to be of very great importance in connection with the future of bombing airplanes, and the altitude reached by this bomber is believed to be a world's altitude record for two-motored airplanes.

REORGANIZATION OF THE OFFICE OF THE CHIEF OF AIR SERVICE

Under the reorganization of the Office of the Chief of Air Service, approved by General Patrick on December 1, 1921, five divisions are provided, viz: Personnel, Information, Training and War Plans, Supply and Engineering. The office of the Chief includes the Assistant Chief of Air Service and the Executive Office. Subordinate to the Executive Office are the Finance and Medical Sections, the Legal Advisor and the Director of Aircraft Production (Spruce Production Corporation). The Orders and Files Section is under the immediate supervision of the Chief Clerk.

The Personnel Division is composed of three sections - Officers, Enlisted and Civilian. The Information Division comprises the Library Section, Special Section and Reproduction Section. Five Sections comprise the Training and War Plans Division, viz: Schools Section, Tactical Units Section, R.O.T.C., National Guard and Officers Reserve Section, War Plans Section and Airways Section. The Supply Division embraces the Property-Requirements Section, the Procurement Section and the Material Disposal and Salvage Section. The Engineering Division, located at McCook Field, Dayton, Ohio, a technical representative of which is on duty in Washington, is composed of the Planning Section, Technical Section, Factory Section, Flying Section, Procurement Section, Supply Section, Patents Section and Military Section.

The following assignment of officers on duty in the Office of the Chief of Air Service has been made:

Executive-----	Major Walter H. Frank
Assistant Executive-----	Major Hubert R. Harmon
Chief of Personnel Division-----	Major Rush B. Lincoln
Chief of Information Division-----	Major Horace M. Hickam
Chief of Training and War Plans Division--	Lt. Colonel James E. Fechet
Chief of Supply Division-----	Lt. Colonel Wm. E. Gillmore
Chief of Engineering Division-----	Major Thurman H. Bane
Chief of Finance Section and Budget Officer, Air Service, in Office of Executive-----	Major Jenner Y. Chisum
Chief of Medical Section in office of Executive-----	Colonel Albert E. Truby

To duty in:

Personnel Division; Major J. W. Simons, Jr., 1st Lieut. George E. Hodge.
Information Division: Captain David S. Seaton, 1st Lieut. Charles H. Mills.
Training and War Plans Division: Major Herbert A. Dargue, Major Walter G. Kilner, Major Percy E. Van Nostrand, Major Leo A. Walton, Major Oscar Westover, Major Barton K. Yount, Captain Oliver S. Ferson, Captain Burdette S. Wright, 1st Lieut. Robert J. Brown, Jr., 1st Lieut. Wm. E. Connolly and 1st Lieut. Horace S. Kenyon.
Supply Division: Lt. Colonel Harry Graham, Major Roy M. Jones, Major George E. A. Reinburg, Major Walter R. Weaver, Captain Frederick F. Christine, Captain Aubrey I. Eagle, 1st Lieuts. Wm. V. Andrews, Charles G. Brenneman, Edwin F. Carey, Aaron E. Jones, Benjamin R. Morton, and Edwin R. Page.

As Engineering Representative: Major Henry W. Harms and 1st Lieut. Ernest E. Harmon.
Office, Assistant Chief of Air Service: 1st Lieut. Clayton L. Bissell.
Finance Section: Captain William F. Vollandt.
Medical Section: Major Benjamin B. Warriner and Captain William J. Freebourn.

THE AIRSHIP ROMA

During the current week the new Italian-built airship ROMA is expected to land at Bolling Field from Langley Field on its first long trip. Elaborate plans for its reception and christening have been formed. From a captive balloon the daughter of Assistant Secretary of War Wainwright is to christen the huge ship with a bottle of liquid air, following which distinguished visitors are to be given rides therein.

ANNUAL REPORT OF THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS.

The establishment in the Department of Commerce of a Bureau for the regulation and development of air navigation is the recommendation made by President Harding in transmitting to Congress on December 7, 1921, of the 7th Annual Report of the National Advisory Committee for Aeronautics for the fiscal year ending June 30, 1921. The President urges upon Congress the advisability of giving heed to the recommendations of the Committee, and states:

"I think there can be no doubt that the development of aviation will become of great importance for the purpose of commerce, as well as for national defense. While the material progress in aircraft has been remarkable, the use has not as yet been extensively developed in America. This has been due, in the main, to lack of wise and necessary legislation. Aviation is destined to make great strides, and I believe that America, its birthplace, can and should be foremost in its development."

In its report the National Advisory Committee for Aeronautics describes its activities during the past year, the technical progress in the study of scientific problems relating to aeronautics, the assistance rendered by the Committee in the formulation of a policy regarding the Federal regulation of air navigation, the coordination of research work in general, the examination of aeronautical inventions, and the collection, analysis, and distribution of scientific and technical data. The report also contains a statement of expenditures, estimates for the fiscal year 1923, and recommendations as to the present requirements for aviation.

The more important general recommendations of the Committee are summarized as follows:

Legislation for the Development of Aviation.

The most urgent need for the successful development of aviation at the present time, either for military or civil purposes, is the enactment of legislation providing for the Federal regulation of air navigation, and the establishment of airways and airdromes under Federal regulation. The Federal regulation should include the licensing of aviators, aircraft, and airdromes; the airways should consist of chains of landing fields providing supply and repair facilities and including the necessary meteorological stations, observations, and reports. If the Federal Government will establish and regulate transcontinental airways, as recommended, the committee is confident that air lines for the transportation of passengers or goods will be rapidly established by private enterprise in all parts of the country. The first national airways, however, should be carefully planned to serve military as well as civil needs. The committee reiterates its former recommendations as to the manner of accomplishing the desired results, and urgently recommends the establishment by law of a Bureau of Air Navigation in the Department of Commerce.

Extension of Aerological Service.

The committee emphasizes the importance of extending aerological service (under the Weather Bureau) along airways as established, and recommends that adequate provision of law be made for this service, which is so indispensable to the success and safety of air navigation.

Policy to sustain the Industry ✓

Whatever may have been the faults or the shortcomings of the aircraft industry during or since the war, the fact remains that there must be an aircraft industry and that it should be kept in such a condition as to be able to expand promptly and properly to meet increased demand in case of emergency. The Government, as the principal consumer, is directly concerned in the matter, and should formulate a policy which would be effective to sustain and stabilize the aeronautical industry and encourage the development of new and improved types of aircraft. In this respect the committee recommends the adoption of a policy which, while safeguarding the interests of the Government, will tend to sustain and stabilize the industry.

Importance of Military Aviation

Aviation is indispensable to the Army and the Navy in warfare; and its relative importance will continue to increase. Other branches of the military services are comparatively well developed, whereas aviation is still in the early stages of its development. The demand for greatly reduced expenditures in the military and naval services should not apply to the air services. The committee recommends that liberal provision be made for the Army and Navy Air Services, not only that provision be made for the maintenance and training of personnel, but also that the funds be adequate to insure the fullest development of aviation for military and naval purposes.

Scientific Research

Substantial progress in aeronautical development, whether for military or commercial purposes, must be based upon the application to the problems of flight of scientific principles and the results of research. The exact prescribed function of the National Advisory Committee for Aeronautics is the prosecution and coordination of scientific research, and, while encouragement may be taken from the progress made, greater provision for the continuous prosecution of research on a larger scale is strongly recommended by the committee.

The Air Mail Service

The Air Mail Service has demonstrated that airplanes can be utilized with certain advantages in carrying the mails. And it has done more than this, despite the handicap of using military types of aircraft, poorly adapted to its work or to any civil or commercial purpose, in demonstrating that commercial aviation for the transportation of passengers or goods is feasible. There are several causes which are delaying the development of civil aviation, such as the lack of airways, landing fields, aerological service, and aircraft properly designed for commercial uses. The Air Mail Service stands out as a pioneer agency, overcoming these handicaps and blazing the way, so to speak, for the practical development of commercial aviation. As a permanent proposition, however, the Post Office Department, as its functions are now conceived, should no more operate directly a special air mail service than it should operate a special railroad mail service; but until such time as the necessary aids to commercial aviation have been established it will be next to impossible for any private corporation to operate under contract an air mail service in competition with the railroads. The National Advisory Committee for Aeronautics therefore recommends that provision be made for the continuation of the Air Mail Service under the Post Office Department.

Helium and Airships ✓

The United States has a virtual monopoly of the known sources of supply of helium, and these are limited. Experiments have been conducted by the Bureau of Mines with a view to the development of methods of production and storage, but as yet the problem of storage in large quantities has not been satisfactorily solved. Because the known supply is limited, because it is escaping into the atmosphere at an estimated rate sufficient to fill four large airships weekly, and because of the tremendously increased value and safety which the use of helium would give to airships, particularly in warfare, it is, in the opinion of the National Advisory Committee for Aeronautics, the very essence of wisdom and prudence to provide for the conservation of large reserves through the acquisition and

sealing by the Government of the best helium-producing fields. Attention now being given to the development of types of airships to realize fully the advantages which the use of helium would afford should be continued. Such development would give America advantages, for purposes either of war or commerce, with which no other nation could successfully compete.

The present organization of the National Advisory Committee for Aeronautics is as follows:

Charles D. Walcott, Sc. D., Chairman.
S.W. Stratton, Sc. D., secretary.
Joseph S. Ames, Ph. D.
Maj. Thurman H. Bane, United States Army.
William F. Durand, Ph. D.
John F. Hayford, C.E.
Charles F. Marvin, M.E.
Rear Admiral William A. Moffett, United States Navy.
Major General Mason M. Patrick, United States Army.
Michael I. Pupin, Ph. D.
Rear Admiral D. W. Taylor, United States Navy.
Orville Wright, B.S.

The members of the committee are appointed by the President, and all members as such serve without compensation. The full committee meets twice a year, the annual meeting being held in October and the semi-annual meeting in April.

An Executive Committee of seven members is provided by regulations for carrying out the work of the Advisory Committee.

AIRSHIP TRAINING AT ROSS FIELD

The course in Primary Airship Training for the class of officers stationed at Ross Field was started Monday, November 14, 1921, and the class is now deep in the intricacies of Navigation and Aerostatics. The work is proving very interesting and it is planned to make this department one of the strongest at the field. A motor room, where the actual tearing down and building up of aerial motors can be undertaken, is now being built and, in many other ways, the course in airship training will be made as interesting and instructive as possible. Very satisfactory progress has been made on the construction of two new steel hangars at this field. The grading and foundation work has been practically completed, and with the arrival of the steel the work will be pushed to rapid completion. Two airships, Types "C" and "D", are being shipped to Ross Field, and the arrival of these ships is eagerly awaited by the personnel, everyone being extremely anxious for an opportunity to ride in them.

NATIONAL GUARD AERO SQUADRON ORGANIZED.

The 137th Observation Squadron, Air Service, Indiana National Guard, was granted Federal recognition on August 1, 1921, and has to date received most of its equipment. Two large steel government hangars, size 66 x 120, have been received. Ships are being set up at Wilbur Wright Field at the present time and will be flown to Kokomo, Indiana, the location of this squadron, very shortly. The minimum strength of the squadron is 24 officers and 90 enlisted men, and the maximum strength 132 enlisted men and 31 officers.

FREE BALLOON FLIGHT

A free balloon left McCook Field about 9:40 a.m., November 29th, and soared off to the north eastward before a brisk wind. The flight was made principally for the purpose of testing out a number of new instruments just received, and which includes a new statiscope, a barograph and a vertimeter. Those who took the trip are Major Napier, Captain McFarland, Lieut. Schneeberger, Art Smith and W. E. Huffman.

HELIUM FILLED AIRSHIP VISITS LANGLEY FIELD

The U.S. Navy Airship C-7, the first airship to use helium gas, flew over and landed at Langley Field Thursday, December 8th. The capacity of this airship is 181,000 cubic feet.

According to the Langley Field Times, the Naval officers in charge of the ship claim that a high degree of efficiency was attained with the helium gas, but that the lifting power of the ship is not so great as when filled with hydrogen gas. The advantage in using helium gas is greater safety, as it is non inflammable and will not explode. The envelope of the C-7 contains practically all of the world's supply of this new gas. A plant for purifying helium is being installed at Langley Field.

The helium used in inflating the C-7 is the product of the Government's plant at Fort Worth, which was built during the war and is now under the joint operation of the Army and Navy.

NEW FARMAN SPORT PLANE SHOWS REMARKABLE PERFORMANCE

During the past week the personnel at Bolling Field were privileged to witness a sensational demonstration of the new Farman Sport Plane, piloted by former Captain Robertson of the Royal Air Force. This is the plane which created such a furore in aviation circles by its performance at Omaha. This tiny biplace biplane, equipped with a 60 h.p. LeRhone motor, with a wing span of only 24 feet and a total weight of less than five hundred pounds, showed something new in range of speed, and goes far toward filling the need of a plane that can land and take off almost anywhere, besides being speedy and maneuverable. The maximum speed of this little fellow is rated at more than 90 miles per hour, and its normal speed ranges down to a landing speed of between 10 and 20 miles per hour, depending upon the wind. On this field, against a 12-mile wind, it landed in less than 50 feet, and took off in less than 60 feet, climbing at an angle of more than 45 degrees. Its maneuverability is unexcelled by anything ever seen at Bolling Field, and yet it cannot be made to spin. Its performance convinced everyone at the field that a real step forward had been made in the onward march of aviation.

GENERAL BANDHOLTZ INSPECTS BOLLING FIELD

On December 7th Brigadier General Bandholtz, Commanding General of the newly formed District of Washington, inspected Bolling Field and its personnel. His expressed desire of having the soldiers at this station, in their appearance and drill, compare with the standard maintained at other Army stations in this District, is being rapidly fulfilled. New Melton cloth, well-fitting uniforms, are to be issued to all soldiers, and they are filled with the determination to show that the Air Service cannot be outdone in any military duty required of it.

This inspection was followed on December 10th by another by Major General Patrick, Chief of Air Service, whose talk afterwards was an encouragement and inspiration for better things in the future.

FOREIGN AIR BUDGETS

Italy has increased her air budget for 1921-22 to 66 million liras, an advance of over 26 millions above the 1920-21 budget. In Siam, the government Air Force is also augmenting her air force, as well as giving generous support to civilian and commercial flying.

In China, there appears to be a hitch over the finances of the healthy provision for commercial air services made by the Government, as many times referred to. With normal Chinese methods the actual cash seems to be mainly missing, so that neither staff nor contractors are receiving their dues, which means that all the splendid missionary work already carried out by the Vickers Company, and those who have brought about the whole scheme, may be wasted.

According to recent reports to hand there are now at the Nan Yuan aerodrome 30 airplanes daily engaged in flying and 100 are as yet unpacked. All are of the latest type and finest workmanship. An able staff of foreign advisers and flying experts has been busy training the Chinese, many of whom have creditably passed the preliminary tests. China climatically and geographically is eminently adapted for flying, and opportunities for commercial aviation are very promising, but, as already stated, all the fine spadework which has been done will be wasted and aviation will be set back for years if financial support is not forthcoming. - FLIGHT (London).

AERONAUTICAL NEWS FROM OTHER COUNTRIES

Brazil.

A committee of the Brazilian Senate has reported favorably, according to the United States Naval Attache in Rio Janeiro, upon a bill proposing the establishment of two aviation lines between Rio de Janeiro and Porto Alegre, which are to be started before September, 1922. One of the routes will be laid out along the coast, carried out by hydroplanes, and maintained and directed by the Ministry of Marine; the other will traverse the interior of the country to the west of the coast range of mountains, and will be carried out by airplanes under the direction of the Ministry of War. The routes will pass through the most important political, industrial, and commercial centers wherever possible.

Chile.

The Government of Chile has under consideration a 15-year exclusive concession for commercial aviation rights. Information has been received by the Dept. of Commerce from Rollo S. Smith, secretary in the office of the Commercial Attache at Santiago, to the effect that a petition from the local representative of the Spad and Bleriot airplane factories has been submitted to the Chilean Government, seeking a 20-year exclusive franchise to install and operate an aerial service between Iquique, Concepcion, and intermediate cities. The tariffs to be put in force, if the franchise is granted, will be submitted to the Government for its approval, and the landing stations will be at the disposition of military aviators. An advantage claimed for the proposed service is that the trip from Santiago, the capital, to Antofagasta - a distance of 1,552 kilometers by rail and requiring a two days' journey - could be accomplished by airplane in something over five hours and at a cost per passenger of 500 pesos for the round trip.

Amsterdam.

The aerial service between London and Amsterdam will be temporarily suspended for the winter months, according to the London Times. This service, which is run by a Dutch company known by the initials of K.L.M., and using Fokker machines, began operations in April. Since then the company's aircraft have made 352 flights between London and Amsterdam. In April next year the company intends to reopen the route with one service each way daily, which will be increased to two services a day on May 1st. The subsidy of Fl. 200,000 (about £17,500) granted to the K.L.M. by the Dutch Government for the years 1920 and 1921, which was intended to meet two-thirds of the company's estimated losses, has proved to be insufficient, and an increase of subsidy, amounting to Fl. 260,000 (about £22,800) has been applied for. The total estimate for civil aviation included in the Dutch Budget of 1922 amounts to Fl. 1,315,000 (about £115,000), of which Fl. 370,000 is asked to cover two-thirds of the company's estimated losses in the coming year. During five months this year the K.L.M. service carried 410 passengers between London and Amsterdam and, besides mails, nearly 18,000 tons of goods, nearly all British exports.

England.

According to the London FINANCIAL TIMES an aviation company is to be formed to establish a route between Ostend, Brussels and London, having secured a substantial government subsidy for this purpose. The organization is practically complete, and includes as manager a man who is the prime mover in

England. (Cont'd)

aerial navigation and has organized practically all the previously existing air services in England. It is intended to maintain a special daily service between Ostend and London throughout next summer.

France.

The famous French flying "Ace" Nungesser has opened a school of aviation at Orly. The school has received a State subsidy, and numerous pupils have been enrolled. M. Eynac, Under-Secretary of State for Aeronautics, who visited this establishment, expressed the government's satisfaction at the excellent results obtained from the training given.

It was reported from Paris on November 22nd that M. Alfred Leblanc, the well known balloonist and pioneer aviator, had died at the age of 51 after a long illness.

Alfred Leblanc was born in Paris in 1869 and was quite a successful business man. He became an enthusiastic balloonist many years before the beginning of aviation, and when M. Louis Bleriot began his aviation experiments with towing man-lifting kites behind motor boats M. Leblanc was the first to cooperate with him. When the Bleriot monoplanes really began to fly, Leblanc definitely joined M. Bleriot, as his right-hand man, and became one of the very first Bleriot pilots. He took part in the first aviation meeting at Rheims in August, 1909, and won the famous Circuit de l'Est in 1910. In the same year he represented France on a Bleriot in the Gordon Bennett Race at Chicago, which was won by Mr. Grahame-White. Thereafter he did little flying and became practically the business manager of the Bleriot firm.

SQUADRON NEWS

Carlstrom Field, Arcadia, Fla., December 6.

The officers and ladies of Carlstrom Field were the guests at a dance given by Mr. and Mrs. M. E. Kellum in honor of their daughter, Miss Ida Kellum. The dance was given at the Officers' Club, which was very prettily decorated for the occasion. The receiving line consisted of Major and Mrs. Ralph Royce, Miss Kellum, Miss Frizzell and Mrs. Davidson. As the guests arrived they were conducted to the receiving line and paid their compliments to the hostess of the evening. Dancing began at 9 p.m., and lasted until 2 a.m. The dancers presented a most unique appearance as farmers and farmerettes in their overalls and gingham. Everyone enjoyed the evening and were loud in their praise of Mr. and Mrs. Kellum as host and hostess.

Captain C. W. Ford, Captain Woolsey, Captain Maynard and Lieut. Corkille left the field by automobile for a hunt in the big cypress. They have established camp at Carsons ranch which is located about sixty miles south of Carlstrom Field. Major Royce, Lieut. Patrick, and Lieut. Chauncey flew down to their camp last week end. A landing field on the prairie had been staked out by the earlier arrivals. They were feasted on roast wild turkey and brought back two that the hunters had killed.

Lieut. Nelson, of Bartow, Fla., a Reserve Corps officer of the Air Service, was given a forty-five minute hop this month. Lieut. Nelson was an instructor at Kelly Field during the war.

The following-named second lieutenants have reported to Carlstrom Field for duty and pilot training: Donald B. Phillips, Robert C. Wimsatt and Robert F. Robillard. These officers took the regular army examination in August and chose the Air Service.

McCook Field, Dayton, Ohio, Dec. 1.

The employees of the Balloon and Airship Section have formed an organization to be designated "The Airship Engineering Society". The object of this Society is primarily the advancement of airship engineering, and its purposes are to investigate and discuss, in general, subjects relating to aeronautics, and in particular problems pertaining to designs, construction and operation of lighter-than-air craft.

Captain Allan P. McFarland, Chief of Airship Test Section, has received orders to proceed to Langley Field for the next course in the Airship School. He expects to leave about the middle of December and will be absent for about four months.

The test of the "J" air-cooled cylinder, which is being developed by Mr. Heron of the Engine Design Section, is under way in the Laboratory, and is proving to be a very gratifying experiment.

Lieut. Schneeberger returned a few days ago from a trip to Langley Field, where he had been inspecting the fabric of the Airship ROMA.

Robert E. Robillard and Cecil E. Archer of the S. & A. Branch have accepted commissions as 2nd Lieutenant in the Air Service. Lieut. Robillard left for his home in Boston, from whence he will proceed to Carlstrom Field, Arcadia, Fla., for training. Lieut. Archer, who is an ex-service man, has had sufficient training and will remain on duty at this post until further orders from Washington.

March Field, Riverside, Calif., Nov. 19.

Major Arnold, Corps Area Officer, accompanied by Lieut. Halverson and Lieut. Koger, of the Navy, landed at March Field Tuesday afternoon, November 14th, having started from Los Angeles with the intention of flying to Crissy Field, San Francisco. Low hanging clouds prevented them from getting over the mountains, however, and they were forced to spend the night in Riverside, continuing their flight Wednesday.

Lieut. Raymond Morrison brushed a little sawdust off the table of a power planer early this week, and now two fingers are a little shorter than they really ought to be. Look before you brush, Morrison, and why be so doggone particular about a little sawdust, anyway?

Nineteen hundred gallons of gas were received at March Field Thursday and the pilots of the 19th Squadron were out early Friday exercising the SE's. These planes have been rusting in the hangars for the last week on account of gas shortage.

March Field, Riverside, Calif., Nov. 19, Cont'd.

The officers of the 19th and 23rd Squadrons engaged in a couple of baseball brawls this week, the 19th humiliating the 23rd to the tunes of 28 to 9 and 18 to 5. It looks as if the 19th would have to lend the bombers some ball players or agree to choose up sides, regardless of squadrons, if interest is to be maintained in the Tuesday and Thursday games.

An unfortunate accident occurred at March Field on Tuesday evening, November 17th, when William Tierney, passenger in a civilian ship piloted by Hubert Kittle of Venice, California, got out of the front seat and walked into the propeller. He was instantly killed.

March Field, Riverside, Calif., November 26.

A five-ship D.H. formation was flown to Rockwell Field, San Diego, Calif., by Capt. Herold and Lieuts. A. B. Pitts, Reily, Brand and Colliver, on Tuesday, November 22nd. They were met over Lake Elsinore by a 3-ship formation of SE5's, piloted by Major Peabody and Lieuts. George and Wood, and were escorted to Rockwell Field. Lieut. Clark followed later in an SE5, to be inspected and repaired at Rockwell Field. On the return trip of the formation, on Tuesday afternoon, Lieut. Reily's ship threw a connecting rod near Fallbrook, forcing him to land and spend the night there.

Major Peabody read a letter from Lieut. H. A. Dinger at the officers' meeting Friday that would have caused all members of the two squadrons scheduled for Honolulu to resign immediately had they not been well acquainted with Dinger's pessimism. Lieut. Dinger was recently transferred from March Field to the Philippines, and stopped at Honolulu en route. He tells a horrible tale of small, rough landing fields and of quarters that are rougher, but says that we may like it at that.

The formation flight of Tuesday prevented the officers' ball game of that day from being a strictly Bomber-Pursuit affair, but on Friday the two squadrons tangled up with the usual result - a beating for the Bombers, this despite the fact that they had the Adjutant and the Quartermaster in their lineup. The Pursuers are thinking of playing the Bombers with their left hand tied to their right heel in the hope of making the score sound respectable.

Lieut. George invited several of the bachelors to help him eat turkey and make merry on Thanksgiving Day, and it is rumored that a certain young lady present put a decided crimp in the tranquility of Lieut. Tonkin's bachelorhood.

Hqs. 5th Group (Observation) Luke Field, H. T., Nov. 7.

The tactical missions accomplished during the past week consisted mostly of bomb and attack raids on different points off the coast of Oahu. During these raids pilots are selected as flight commanders and are held responsible for the tactics employed in the execution of the mission. During the bomb raids when clouds permit, dummy bombs are dropped from altitudes ranging from 4,000 to 10,000 feet. In the event of low clouds over the objective, the V formation is changed to single file echelon formation and an individual dive attack is made by each pilot in line with the flight leader. During attack raids Marlin and Lewis guns are used by each plane, and, although the V formation is constantly used while traveling en route, the single file echelon dive attack is always employed, on account of its maneuverability, while in the vicinity of the objective.

Radio was used successfully on twelve flights during the week, despite the excessive interference existing in and around the Hawaiian Islands.

Excellent progress is being made on the photographic mosaics of sectors ordered by G-2, Department Headquarters.

Boxers from Luke Field are being entered in the monthly Pearl Harbor and Fort Kamehameha matches, and are showing up well under competition.

Langley Field, Hampton, Va., December 3.

The All-Army team, of the Third Corps Area, defeated the powerful semi-professional Baltimore Oriole pigskin eleven on Saturday at Baltimore, by the score of 21 to 0. The Army team is composed of stars from the teams in this Area. Six of its players are from Langley Field. Ignacio, Langley's plunging fullback, scored all of the three touchdowns as well as kicking the goals after touchdown.

Langley Field, Hampton, Va., December 3, Cont'd.

The Post Exchange, under the management of Major E. L. Canady, has gotten away from that apparent state of dilapidation which has existed for over a year, and is rapidly assuming a real business-like appearance. It has now become an institution of real service to the officers and men of the post. There are no more complaints about poor service and discourteous treatment.

Major T. J. Hanley, Jr., who has been ordered for duty in the Philippines, will leave Langley Field after having completed nearly two years' service at this important station. Reporting for duty on January 2, 1920, Major Hanley has filled several important offices during his tour of duty here. Shortly after his arrival he was placed on duty as Executive Officer, serving in this capacity under Lt. Col. John N. Reynolds, Commanding Officer. Later he became the Commanding Officer of the First Army Observation Group, and during the intensive bombing project of the First Provisional Air Brigade last summer he served as Commanding Officer of the Fourteenth Squadron (Bombardment). Major Hanley has been on duty as an instructor in the Field Officers' School for nearly two years. During the summer of 1920 he served on detached service at Fort Leavenworth, Kansas, for approximately three months. Both Major and Mrs. Hanley have been active in the social life of the post, having made a host of friends, and the best wishes of the community go with them to their new station.

The dinner dance at the Club on Thursday evening was well attended and much enjoyed by all. Captain and Mrs. Reynolds gave a dinner party in compliment to their house guest, Miss Adaline Thornton. Captain and Mrs. Reed gave a large dinner party.

Ross Field, Arcadia, Calif., November 26.

Plans are being made to start a new class of 50 cadets in the early part of 1922. The various universities and colleges of Southern California will be advised of the advantages of such a course, and it is thereby hoped that a large number of applications from among students and graduates of these schools will be received.

The following officers are sailing from San Pedro, California, on the Naval Transport HENDERSON, December 2, 1921, for Langley Field, Va., via Panama Canal: Major W. W. Vautsmeier, Captains Charles P. Clark, Harold E. Weeks, W.D. Wheeler, F. H. Durrschmidt, George D. Watts, and First Lieutenants W. C. Cummings, W. C. Burns and C. H. Welch. These officers, with the exception of Captain Wheeler, who goes to Lee Hall, Va., are going to Langley Field primarily for the purpose of undertaking airship training at that field. Most of these officers have been stationed at Ross Field for more than two years, and their departure will be keenly regretted by their many friends.

Lieut. Jos. A. Physioc, Jr., has been appointed Post Athletic Officer to succeed Captain George D. Watts, and Lieut. J. C. Shively has been appointed School Athletic Officer. Plans are under way to organize strong basketball teams from among the post and school officers. The post officers defeated the school officers by the score of 11 to 10 in a game of indoor baseball, played last Wednesday afternoon.

A series of weekly boxing exhibitions was inaugurated last Thursday at this field, with marked success. An inside arena has been erected and a large number of civilians, as well as officers and soldiers, enjoyed the bouts.

Captain George S. Warren and Mrs. Warren, who have just returned from Camp Lewis, have moved into quarters on the post. Other new recent arrivals along Officers' Row are Lieut. and Mrs. Jos. A. Physioc.

Lieut. W. J. Flood, A.S., who recently completed the Balloon Observers' Course at this field, left last week for his new station at Brooks Field, San Antonio, Texas.

Major H. D. Munnikhuisen, Q.M.C., has arrived at this station to serve as quartermaster, vice First Lieutenant George C. Wynne, Q.M.C. Major Munnikhuisen was accompanied by his wife and their two children. They have just ended a delightful sixty-day leave, having spent considerable part of this period in making lone automobile tours.

First Lieutenant James T. Neely has been appointed Post Adjutant to succeed Lieut. W. C. Cummings, who has been ordered to Langley Field.

One of the regular semi-monthly Officers' Hops was held last Friday evening at the Santa Anita Officers' Club, and it was a very enjoyable affair.

Hqrs. 12th Squadron (Obs.) Fort Bliss, Texas, Nov. 26.

During the past week the officers and enlisted men of this organization have been trying out for basketball. Several practice games have been played, and 1st Lieut. Charles Sullivan, Captain of the team, stated that this organization will turn out one of the fastest teams of this post. The average weight of the team is estimated at about 140 pounds.

1st Lieut. Edgar A. Liebhauser, Air Service, formerly of the 13th Squadron (attack) now stationed at Kelly Field, Texas, was assigned to the 12th Squadron (Obs.) and reported to the commanding officer for duty on November 20th.

Hqrs. 12th Squadron (Obs.) Fort Bliss, Texas, December 3.

Applications for enlistment in this organization during the past week totaled eight, but owing to lack of sufficient educational qualifications only four of the number succeeded in passing the examinations.

On December 3rd Sergeant Arthur C. Juengling and Private Arthur E. Johnson returned from a twenty-day hunting pass, which they spent in New Mexico, their headquarters being at Silver City. They killed five deer, and on their return home brought back a hide to show the boys. They reported a good time, the only thing marring their trip being the loss of three of the four horses that made up their pack train. Everyone regretted that they were unable to bring back any of the venison.

During the past week the Squadron has been receiving instruction in the Manual of Arms. There are two classes, the first class and the advanced class. First Sergeant Simpson stated that he was very much pleased with the care and interest the men had shown in the drill.

Mather Field, Mills, Calif., November 28.

Thanksgiving Day was happily observed by all organizations on the post, and a most delicious dinner of roast turkey, with all the necessary trimmings, was served at the Officers' Club. There were almost 100 persons present, as many of the families who keep house on the field came to the Club for this special occasion. The District Forester from District No. 2 played a Thanksgiving Hymn upon the completion of the dinner, ending in a most fitting manner an unusually enjoyable dinner hour. Thanks surely are due to every individual connected with the preparation and arrangements for the day.

Mrs. W. R. Mackinnon started on a trip East principally for the purpose of displaying her lovely young son to his grandparents. A telegram from Lieut. Mackinnon's father, announcing their safe arrival in New York, also evinced a little of the pride he felt in having such a fine grandson.

Ever so many guests are being entertained on the post. Miss Emma Shellhorn, of Minneapolis, is the guest of Lieut. and Mrs. R. W. French; Captain and Mrs. Louis M. Field (M.C.) are entertaining Mrs. Field's mother, Mrs. Anderson, who just recently arrived from Kentucky; Mrs. Hess, Lieut. Waller's cousin, will be his guest for several weeks, and Madame Maughan, with Mrs. Maughan's sister, Mrs. Trevithick, motored from Utah with the Maughan family, and plan to spend several months in California.

San Antonio Air Intermediate Depot, Kelly Field, Texas, Nov. 29.

The Annual Horse Show of the Second Division was held at Camp Travis on November 21st, 22nd and 23rd. Major Garrison, Commanding Officer of the San Antonio Air Intermediate Depot, riding "Dick", property of Colonel M. L. Crimmins, Infantry, won first place in the open jumping contest on the 21st, there being over thirty entries in this contest. On November 23rd Major Garrison also pulled down third place in the polo bending contest.

The Mechanics' Dance, given by the Commanding Officer and officers of the Air Intermediate Depot, was put over on Friday evening at the Aviation Club, Kelly Field No. 2. The dance began early and continued until the wee small hours. The Club was decorated with streamers, palms and ferns. Added to this was a real bar in one end of the room, which reminded everyone of the dear old days before the war. The grand march was led by Major and Mrs. Garrison at 11:15, and the guests were supplied with confetti, serpentine and noise makers, which soon caused the celebration to take on the effect of New Year's eve. Many visitors were

San Antonio Air Intermediate Depot, Kelly Field, Texas, Nov. 29, Cont'd.

present from the other camps, including the Corps Area Commander, Major-General John L. Hines. All guests wore the uniform of an aviation mechanic.

The officers of the Depot have just finished playing off a tennis tournament, which was won by the Commanding Officer, Major Wm. H. Garrison, Jr.

The Depot is very proud of its girls' basketball team, which has been practicing for the past several weeks under the supervision of Lieut. W. W. Dixon and is now ready to meet all comers. On Friday, December 2nd, they will play the Turners' Basket Ball Team of San Antonio, Texas, and it is felt that they will surely "bring home the bacon".

Kelly Field, San Antonio, Texas, Nov. 19.

Preparations are being made to carry out night observations by the 13th Squadron with the new XBIA's. These ships have already aroused much interest on the field, and the night flying is looked forward to by all.

On October 19th Miss Genevive Harper and Lieut. Ames S. Albro were married at the home of the bride's parents in San Antonio. Another wedding of interest was that of Miss Grace Daniels, of Los Angeles, and Lieut. Leland S. Andrews in the home of Lieut. and Mrs. Louis Dayton, Dewey Place, San Antonio. Lieut. Andrews is now stationed at Ellington Field.

This week the low heavy clouds in the mornings made it impossible for the students to continue their camera obscura work. Formation flying, therefore, has taken its place until the sun shines again. Two teams made cross-country trips, one to Del Rio and the other to Ellington Field. Lieut. Dunton as pilot and Lieut. Booker as passenger made a fast hop to Sabinal, Texas, and return in 70 minutes. Lieut. Dunton, with Major Miller as passenger, made the same trip later.

A total of 154 flights for a duration of 88 hours were made by the 3rd Group (Attack) this week, being an increase of twenty-one hours over last week. Seven of these flights were cross-country, the other qualification and test flights.

Lieut. Matthews and mechanic of Ellington Field, Texas, arrived here this week and returned after a two days' visit.

Cadets Norwood and Wright arrived on the 15th from Ellington Field. Cadet Norwood ferried an SE5A from the San Antonio Air Intermediate Depot to Ellington Field for the First Pursuit Group.

A meeting of athletic officers was held at Fort Sam Houston, Texas, on November 18th, and a new schedule of football games was arranged. According to the new schedule, Kelly Field will play as follows: November 23rd at Kelly Field with the 23rd Infantry; November 30th at Camp Travis with the 9th Infantry, December 14th at Kelly Field with the 2nd Engineers, and December 21st at Kelly Field with the 8th Training Battery.

On Saturday, November 19th, the football team journeyed to Sabinal and added another victory to its long list by defeating the Tigers of Sabinal to the tune of 14 to 0. The battle was rough, tough and dusty, but clean sport mainly was exhibited by both teams. After the game the members of the teams were entertained with a dinner dance given by the ladies of Sabinal. The field warriors are expecting another trip to Sabinal on December 3rd to play the 5th Cavalry. Kelly has now scored approximately 130 points in 5 games against 21 of their opponents.

Kelly Field played the second game of the Polo Handicap tournament at the Brackenridge Park field on November 20th. The polo team staged a very exciting game, but the odds were with the 2nd Division, who won out in the last two periods, the score being 14 to 10. The second and third teams are out for practice almost every day, and in a short while three crack polo teams will be in evidence.

The officers' and ladies' riding classes are progressing rapidly, due mostly to the enthusiasm shown.

The much postponed baseball dinner will be held on Thursday night, November 22, 1921, at 8 p.m., at the Menger Hotel. This is the opening night of the Menger Hotel House Dance, and the best of food and music will be provided. Reservations will be made upon application.

The Board of Governors held the regular weekly meeting Thursday to devise further plans for the entertainment of the enlisted personnel.

Kelly Field, San Antonio, Texas, Nov. 26.

A wonderful dinner dance was held at the Aviation Club on Thanksgiving night. Tables were set for about 65 couples, and after the turkey, dancing was enjoyed, the music being furnished by the Hunter Melody Five.

On Thanksgiving afternoon the Kelly eleven battled with the husky 23rd Infantry at the Camp Travis Stadium, before a throng of about 5,000 people. Although Kelly met defeat, the doughboys admit that it was the hardest scrap they ever had. Captain Usher, Lieut. McKee, Sergeants Knowlan, McFarland and Bills were a stone wall on the defensive. Lieut. Aldsworth starred with the footwork, and Major Reynold's entry in the last half at quarter put new life in the game. The game showed that Kelly has a real squad of football artists. In the evening an elegant turkey dinner was given the team at the Menger Hotel, and the day was voted a big success by all present.

The polo team has entered in the "Trail Trophy Tournament", which is to take place in a few weeks. Beautiful cups are offered as prizes by this progressive Camp Travis paper, and the Kelly Field team hopes to get a couple.

On Friday, the 25th, the San Antonio Air Intermediate Depot gave one of the most successful informal dances of the season, at the Club. A joyful throng of about 200, garbed in overalls of every description, presented a spectacle not soon to be forgotten. Refreshments were served from the lunch counters throughout the evening, and together with the snappy music, nothing was left to be desired.

The 2nd Group (Bombardment) has almost established a record this week by flying 214 hours and 55 minutes in 342 flights in four flying days. Training has now reached the formation stage, with camera obscura when the weather permits. Twenty-four cross country flights were made in almost as many directions.

The past week has been a busy one for the 3rd Group (Attack) Communications Department. A field radio set, consisting of two fully equipped radio trucks, has been set up at Camp Stanley, to be used in conjunction with the bombing practice of the Second Bombardment Group, starting Monday. Three wireless operators were furnished with the trucks.

The Radio School for enlisted men of the Group, which is under instructors of the Communications Office, has been showing very satisfactory results. A large number of enlisted men enrolled in the school, and in a short while the Group will have a number of competent wireless operators and radio mechanics from the enlisted personnel of the Group.

The 13th Squadron has acquired a new DH4B ship of special design and build for the exclusive use of the Group Commanding Officer.

The enlisted personnel held their annual Thanksgiving Dance at the Service Club on the evening of November 22nd, music being provided by Tulipons Melody Three. Miss Hazelton, the charming hostess, surpassed all her previous records in providing a host of pretty girls and good eats. The only complaint to the management was that the holes in the doughnuts were too large.

The 11th Squadron has issued a defy to all the other squadrons on the field regarding their football team, and it won't be long before we see what Top Sarg. 'Dink' Knowlan has up his sleeve.

Clark Field, Pampanga, P.I., October 17.

The continued shortage in the supply of gasoline has greatly interfered with the complete and successful operations on this field. Consequently, all flying and motor transportation has been suspended for the present. Horses and horse-drawn vehicles must be depended upon for transportation. Relief from this extremity, however, is hoped for in the near future.

The Department Air Officer, Major B. Q. Jones, flew to this field on October 16th for the purpose of inspecting a photo plane holding device turned out by the local Engineering Department. As a result, more material has been requisitioned and all planes will be equipped as soon as possible to accommodate the K1 Camera.

During the week orders were received directing the return to the States of 1st Lieut. William Sweeley and 1st Lieut. C. L. Webber. They will depart on the December 15th transport to their respective assignments, Crissy and Rockwell Fields. It is judged, by the words and actions with which the orders were received by these officers, that no better assignment could have been given them.

Clark Field, Pambanga, P. I., October 17, Cont'd.

Twenty-five flights were made at this field during the week, totalling 1925 minutes. The aerial gunnery, bombing practice, radio practice and photographic work of Friday, October 14th, attracted an extra amount of attention and interest. Six officers and two enlisted men were the participants in the exercises of the day. Several hundred rounds were fired from the air with both Marlin and Lewis machine guns. Four 24-lb. fragmentation bombs, Mark "2A" and two dummy bombs were dropped from the plane piloted by 1st Lieut. Edwin Johnson, 1st Lieut. C.L. Tebber acting as observer and bomber. Brigadier-General Charles G. Treat, Commanding General of Camp Stotsenburg, accompanied by Lieut. Waddell, his Aide, were interested observers from the ground.

Clark Field, Pambanga, P. I., October 24.

News has been received that the 28th Squadron (Bombardment), having been assigned to duty in the Philippine Department, will on arrival proceed to this field for station.

Due to gasoline shortage, only necessary test and cross country flights to headquarters 4th Group (Obs.) Manila, were participated in by pilots of this field during the past week. Flying activities for the week totalled 11 flights of 385 minutes duration.

The program of instruction as scheduled for pilots and observers has necessarily been restricted to ground work. Class periods being occupied by instruction in Aerial Navigation and Administration.

Special Orders No. 243, Headquarters Philippine Department, dated October 18, 1921, requiring this field to participate in the annual staff ride, was received October 19th. One officer and 19 enlisted men of the 3rd Squadron (pursuit) Photographic Section No. 6, and the field Flight Surgeon (Captain David W. Bedinger) with two enlisted men of the Medical Corps, will proceed on November 2nd from this station to Lucena, Tayabas, by motor transport. It is expected that six planes, carrying pilots and observers, will be dispatched for observation work with the other arms.

General Orders No. 30, Headquarters Philippine Department, October 19, 1921, provides that the 3rd Squadron (Obs.) be redesignated and reorganized in accordance with 1920-1921 Tables of Organization. The old designation - 3rd Squadron (Observation) - will be changed to "3rd Squadron (Pursuit)". This squadron, however, will operate as an observation squadron until pursuit equipment has been received.

Kindley Field, Fort Mills, P. I., October 15th.

Major Moreno, flight surgeon and Lieutenants Hine and Ellicott have gone to China, via Japan, on leave. They expect to be gone one month and fifteen days.

The officers of the 2nd Squadron (Obs.) who arrived in this Department in December, 1919, have received their orders and assignments in the States, and expect to sail on December 15th.

Major Jones, Department Air Officer, visited the field and inspected the Balloon Operations Office on October 13th.

Noncommissioned officers above the grade of corporal are receiving instruction in the handling of the pistol prior to going on the range.

Kindley Field, Fort Mills, P. I., October 22.

On Monday, October 17th, Lieutenant John B. Patrick, Air Service, ferried seaplane N9H #2640 to this station from Manila, to be disassembled and salvaged. All Hispano engines at this station have been ordered packed for shipment to the States. Lieut. Patrick returned to Manila on Monday with Lieut. Dallas in an HS2L Flying Boat.

The baseball team organized at this field has been entered in the Fort Mills League. The first scheduled game is on October 23rd, when the Air Service meets the Coast Artillery team.

During the past week the garrison Basketball team played two games and broke even.

Hqs. Detachment, 4th Group (Obs.) Paranaque Beach, Manila, P.I., Oct. 23.

All the officers of the 2nd Aero Squadron, having been flying seaplanes for the past two years, are to take a refresher course in the flying of DH4's at Paranaque Beach, under the instructions of 1st Lieut. C. Bettis.

First Lieutenants Patrick and Richter are taking refresher courses in the piloting of the DH4 airplane at Paranaque Beach, under the instructions of First Lieutenant C. Bettis.

Two officers and 15 men have been ordered from the 2nd Aero Squadron to Paranaque Beach in connection with a flight of three DH4 airplanes, to be equipped with flotation gears and used in Coast Artillery observation work in place of seaplanes.

On October 10th a class of three enlisted men started to take the Aerial Observers' course at this station. First Lieut. C. Bettis is the instructor of the class, and Sergeants Friedel and Benoit, and Private Grant are assigned to take the course of instructions.

Orders have been issued for Sergeant O'Briant of this detachment to proceed to Lucena, Tayabas Province, for the purpose of directing voluntary Filipino labor in fixing up a flying field at that city. This field will be used in the coming Staff Ride as a base for airplanes attached as liaison with the Infantry and Artillery.

The gasoline speed boat of Headquarters Detachment has been replaced by the steam rescue launch "Rochester". This launch will "stand-by" at Paranaque Beach at all times when flying is being carried on at this field.

Staff Sergeant Winfield M. Minor of Headquarters Detachment, on duty at the Department Air Office, was discharged on October 11th to accept an appointment as chief clerk in the office of the Department Air Officer.

Crissy Field, Presidio of San Francisco, Calif., November 26.

Again the Air Service tells them where to put them. On Tuesday last, 1st Lieut. E. S. Batten at the stick and 1st Lieut. B. S. Catlin as Observer hopped off in a DH to observe a shoot to be carried on at Fort Funston. Visibility was very poor, causing them to fly with a ceiling of not over 800 feet. The battery commander reports their work as O.K. and regrets that they had motor trouble and were forced to return to Crissy Field before the shoot was completed. Before their return, however, they reported fourteen shots.

The Post Exchange is again in the limelight with a lunch counter soon to be installed where short orders, sandwiches, hot dogs, coffee, etc., will be served at all hours.

Everyone is commenting on the broad grin of 1st Lieut. Arthur C. Liggett and the cigars he has been passing out. Well, who wouldn't over the arrival of an 8½ pound boy on November 9th by the name of Arthur G. Jr. Yes, and other broad grins are noticed as we see Corporal Chisholm accounting for his many sleepless nights since Wm. Duncan arrived on October 23rd.

The Corps Area Air Office is complete once again, Major H. H. Arnold, Air Officer, having returned from a thirty-day sick leave. It is rumored that Major Arnold, during his leave, bagged many a duck as well as other game.

Crissy Field is very grateful for the treat recently received from 1st Lt. Wm. C. Goldsborough, who flew to Lake Herman, near Benecia, California, and brought back a generous supply of wild ducks.

Staff Sergeant Alva R. DeGarmo of the 91st Squadron (Obs.) has returned to duty from a well earned furlough spent with his parents in the vicinity of Los Angeles, Calif. During his furlough Staff Sergeant DeGarmo found considerable time to hunt and fish in the seclusion of the San Bernardino Mountains. He was one of the 91st Squadron pilots on this season's forest patrol.

A number of officers attended the annual football game between the University of California and Stanford, which was held in the new Stanford Stadium at Palo Alto, California. The score was 42 to 7 in favor of California.

Golf seems to claim first place as a sport among the officers at Crissy Field. The ladies of the post also are well represented on the club course.

The organization of the Air Service Reserve Squadrons, Photo Sections and B.I.O. in this Corps Area are progressing along lines that should prove to be a firm foundation. Authority has not been received as yet to accept candidates for actual enlistment, and this fact certainly proves to be somewhat of a handicap. There are at this writing some fifty or more pioneers who are devoting their spare time to the learning of Air Service duties in general and are anxiously waiting an opportunity of signing their names to an enlistment paper. They say "Let's go."

Crissy Field, Presidio of San Francisco, Calif., November 26.

Through the efforts of the officers, ladies of the post and the Crissy Field Post Exchange, Christmas will be celebrated in true fashion. It is their intention to take care of the officers and enlisted personnel as well as their respective families.

The Ordnance Officer, 1st Lieut. E. S. Batten, has added to his supply of dangerous weapons six Browning Machine Guns with tripods, to be used for anti-aircraft defense. He has also received a number of field glasses, for which there has already been some scramble.

First Lieut. Wm. C. Goldsborough, E & R Officer, has issued a call for basketball players, and, before the memorandum was dry, enough men signified their intention to make the team. Much is expected from these candidates, as most of them have previously played on fast amateur and semi-professional teams.

Staff Sergeant Alvin C. Gundred is turning over the sum of \$100 to Uncle Sam. The occasion for this is that he is to take his place in the Movie World and is purchasing his discharge so that he will lose no time in associating himself with those of the silver screen. Sergeant Gundred's training in the Air Service alone has fitted him for the exceptional position he is about to take. The Pacific Studios, Inc., were in need of a God of Rain, Snow and Sand Storms, to say nothing of lesser effects. With the aid of a few aeronautical motors, Sergeant Gundred expects to provide the required effects and will also have charge of the Machine Shop.

Do we eat at Crissy Field? "We say we do", is the answer from all the members of the enlisted personnel of this command. A glance at the following menu will readily convince the most skeptical: Cream of Oyster; Ripe Olives; Celery Hearts; Shrimp, Mayonnaise Dressing; Roast Young Turkey, Giblet Gravy; Oyster Dressing; Cranberry Sauce; Candied Yams; Mashed Potatoes; Creamed Cauliflower; Hot Mince Pie; Pumpkin Pie; Chocolate Layer Cake; Ice Cream; Mixed Candies; Assorted Nuts; Coffee; Cigars and Cigarettes.

It has been rumored about the field that Sergeant Moore, formerly nontom-missioned officer in charge of transportation but now with the Utilities, broke his nose in putting on the feed bag for the above spread. Sergeant Moore claims, however, that it happened while cranking a Ford. Not a few concur with his version, as they claim he always goes in "head first". Getting back to the eats, it must be said that the Mess Officer, 1st Lieut. B. S. Catlin, Jr., and Mess Sergeant Julius deserve unlimited credit, also Cook "Snakes" Shafer, for making Thanksgiving Day one to be long remembered.

Post transportation will soon be crowded if they keep on getting new equipment. The latest in the transportation line are a tractor and three electric trucks. The tractor is to be put in general use about the field and should prove to be a valuable asset. The transportation men are vying with each other as to who will solo on it first. The electric trucks are capable of pulling ten tons, and will be used in connection with the seaplanes.

Private Wm. A. Fox of the 91st Squadron (Obs.) is still confined to his bed at the Letterman General Hospital as a result of a street car accident in San Francisco recently.

Captain A. W. Smith, Flight Surgeon, has just returned from Camp Lewis, Washington, where he has been connected with the Army Football Team representing the 9th Corps Area. Captain Smith acted as line coach for the team.

The Post Exchange is certainly very progressive these days, the latest being a bus line to and from the car station. With this new addition to the regular Crissy Field bus there should be no more alibis submitted.

The wrecking of the old and temporary buildings which were in use during the World's Exposition in 1915 is about completed, and the further camouflaging of Crissy Field is in full swing.

"Batter up", calls the "Ump" as the 91st Squadron ball team takes the field, and that usually includes the game. The team hit the dust, however, at the hands of the All-Star team of the Letterman General Hospital on November 19th, to the tune of 4 to 0. There is plenty of Crissy Field money to be found for the return game this Saturday. It is rumored that there will soon be in action some professional ball players (not Black Socks) and that Crissy Field will take the money. On Saturday the team played the Sudden, Christenson Lumber Co. team, and splintered a score of 10 to 2.

(Copy)

Crissy Field, Presidio of San Francisco, Calif., November 26.

After drill on Wednesday the royal rooters followed the team to Fort Scott, where they crossed bats with Fort Scott's "Bean Bellies". When it was time to return the score was found to be 13 to 3 in favor of the flyers. In Privates McLaughlin and Petric the team has contenders for a Babe Ruth crown, as they both knocked out homers in this game, while Private Warmach hit every time he went to the bat. The batteries for Crissy Field were Privates Schmidt and Root.

First Lieutenant H. A. Halverson, Assistant to the Air Officer, 9th Corps Area, has the prospector's fever these days. Until recently he could be seen with a shovel in one hand and a portion of Mother Earth in the other, while on his saber strap hung the American anchor. Now he is to be found wrapped within the cockpit of a DH, and where the American anchor formerly hung now hangs a pair of tricky field glasses and, last but not least, a map showing in detail the sector in which Death Valley Scotty made his millions. Although most sincere in his belief that he too will reap a wad that will equal or even surpass that of Death Valley Scotty's, there are a number here who question it. It has been suggested, in order to assure himself of a fortune, that he land and plant within the Valley a cornfield, so that at some future date he could govern himself accordingly and thereby pick up many a nickel from the dry and weary travelers who may chance to find themselves in Death Valley.

Pilot Johnson, of the Air Mail Service, Chicago, Ill., is among the recent newcomers at the field. He is here taking the place of Pilot Ray Little, who is now enjoying his annual vacation.



