Return to 585

REGION VI NEWS

A MONTHLY NEWSLETTER OF SIGNIFICANT REGIONAL AND WASHINGTON ACTIVITIES

CIVIL AERONAUTICS ADMINISTRATION, LOS ANGELES, CALIFORNIA

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THE JOB OF AN AERONAUTICAL ENGINEER (AIRCRAFT POWER PLANTS)

The modern post-war transport type aircraft in use on the airlines today is a highly complex creation. The aircraft contain many new features for improved operational efficiency and passenger comfort not found on pre-war aircraft. Examples of such features are cabin and engine supercharging for high altitude operation, complete air conditioning systems, high frequency radio for communication and blind flying, radar navigational sets, hydraulic booster systems for control surfaces, combustion heaters for passenger and crew compartments, thermal anti-icing systems for wing and empennage, reversible propellers to shorten landing distances and electric galleys for complete meal service. The DC-6, Constellation, Stratocruiser and Convair-liner are representative of the latest and most modern types of transport aircraft.

It is the policy of the CAA to encourage aircraft manufacturers in the design of any new and unusual types of aircraft which they may desire to undertake. At the same time, it is our responsibility to approve only safe airplanes.

Because of the complexity of such aircraft, it has become necessary for the aeronautical engineers in the Aircraft Engineering Branch to specialize in certain phases of the airplane components. The particular specialties now recognized are power plant installation, airframe structures, engines and propellers, and miscellaneous equipment such as hydraulic systems, radio equipment and electrical systems. This article will deal with the duties of the power plant installation engineer. Subsequent articles will deal with the duties of the other engineering specialists.

Certain parts of the Civil Air Regulations deal with airworthiness requirements for aircraft. One set of Regulations covers non-transport or personal type aircraft. Another set covers transport type aircraft. In recognition of the fact that transport type aircraft are more complex and that they are used as common carriers, the Regulations for transport aircraft are more restrictive in that they require a higher level of airworthiness.

The Regulations are intended to be objective in nature and to be as free as possible from detail considerations. The CAA is a regulating agency, and not a procuring agency. Therefore, we are not concerned with efficiency of aircraft, but only with safety. Efficiency of design is a matter between the manufacturer and the customer.

The power plant engineer must have a sound engineering education as well as an extensive background of experience involving aircraft power plant installations. Many of our engineers have worked in the engineering departments of aircraft companies for several years before coming to CAA. For example, he must know the fundamental principles of design and operation of internal combustion engines. He must be able to understand the principle of operation of complex fuel systems, and to visualize the manner in which such fuel systems may be operated by the pilots flying the aircraft. He must anticipate possible failures in the fuel system components, such as broken lines or sticking valves, and to analyze the design of the fuel system for any inherent functional weaknesses which would make such failures more serious than they would be if a different arrangement of components was employed. The Regulations covering fuel systems, being objective in principle, only prohibit certain design practices known to be bad. In other respects, they are general in nature, and frequently require interpretation by policy decision or special ruling when a controversy with a manufacturer arises.

The power plant engineer must understand the principles of propeller operation and the details of pitch control mechanisms in order that he may evaluate the suitability of a reversible propeller installation in an airplane from the standpoint of anticipating any manner in which propellers could be reversed, deliberately or inadvertently, and thus affect the safety of the airplane. If there are no specific regulations covering such an installation, as is presently the case for reversible propellers, the engineer may propose a policy based upon good design practice and common operating procedure.

Cabin and engine supercharging systems have presented many new problems for the power plant engineer. He may find it necessary to recommend to the manufacturer that certain safety features such as suitable instrumentation to warn of malfunctioning of the equipment, and controls to render the equipment inoperative in the event of malfunctioning, be incorporated in the installation. In the event the manufacturer is unwilling to follow his recommendations, he may refer the matter to higher authority for consideration and decision as to whether the devices recommended by him and opposed by the manufacturer are necessary for the safe operation of the aircraft. When appropriate, he should recommend new or amended Regulations covering the installation of such equipment as a means of avoiding controversy in the future with other manufacturers.

The power plant engineer must be able to exercise sound judgment in determining whether any changes to any major component or system submitted for approval by a manufacturer are necessary as safety items in the event of a probable malfunctioning or as a means of preventing a serious malfunctioning. He must avoid recommending or requiring any changes in a proposed design which might be desirable from a customer standpoint, but which cannot truly be considered as items affecting immediate or future airworthiness. Design changes and the installation of unnecessary equipment items may frequently add considerable to the cost of the airplane, and it is essential for maintaining good relations with manufacturers and operators that the CAA never lay itself open to the charge of unfair administrative practices.

The power plant engineer must in general have good engineering knowledge and experience in this specialty and be able to exercise good judgment in separating the "wheat from the chaff" in the many and varied problems which confront him in approving the design of the various power plant components for minimum airworthiness.

Regional Administrator's Column

By: James E. Read, Acting

REGIONAL OFFICE CHANGES

For months now, we've been hearing of reorganization -- everyone's been discussing it -- rumors have been flying. Finally Administrative Order No. 1 was issued describing the organization and functions of the Regional Office and listing the persons selected to head up the revised organization. Things seemed to move along just about the same as before, and on the surface there appeared to be very little change, if any. Then came the fateful day -- June 28. The "movers" and telephone men arrived, and things really began to happen. Furniture was being moved right and left and we actually began to "feel" the reorganization. It was reminiscent of the last week in December, 1946, when we moved from Santa Monica.

As soon as things simmer down, and everything is peaceful and quiet again, the major portion of the reorganization will have been completed and operations, as rearranged, will no doubt settle into a smooth running organization. Everything possible is being done to streamline our operations and the earnest cooperation of all personnel is requested. As you know, the new organization structure of the Region was designed to facilitate close coordination in program development and execution, and we are confident that the rearrangement of offices and personnel will assist materially in accomplishing this objective. Perhaps there will be some dissatisfaction on the part of a few who feel that their former location was more desirable, but after a few days, I'm sure these differences will disappear.

At the Regional Administrator's Staff Meeting on June 21, it was decided that Division Status Reports which are an agenda item for each meeting would be summarized and published in the Sixth Region News, together with other informational data which may develop at such Staff Meetings. In this way, all will be kept informed of what is going on in the Regional Office, as well as decisions rendered at Staff Meetings.

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SUPER DC-3 FLIES; CRUISING SPEED MAY BE HIGHER THAN EXPECTED

The Douglas Super DC-3 successfully completed its first test flight recently at Santa Monica, California, piloted by chief company test pilot John F. Martin, who stated on landing that indications were that the plane would be even faster than the 243 mph cruising speed expected. Span of the Super DC-3 is 90 ft. five feet less than the original model; length is 67 ft, 8½ in. Gross weight is 29,500 lbs., an increase of 4,300 lbs. over the standard DC-3. Following CAA certification, the Super DC-3 will be available to airlines in two models, powered either by 1,475-hp. Wright R-1820-09HE or by Pratt and Whitney 1,450-hp R-2000 engines.

SOUTHWEST AIRWAYS COMPANY

Southwest Airways Company was organized in 1940 and in August, 1942, filed its first common carrier application with the CAB. Due to the critical international situation at the time, the application was tabled and Southwest received a number of assignments important to the national defense.

It operated three large military training establishments at which it taught both primary and advanced flying to more than 17,000 cadets. It flew over a million miles in a feeder airline operation for the ATC and operated a large engine and airplane overhaul depot for the Army which produced between 175 and 200 engine overhauls per month and turned out one complete aircraft overhaul per day.

Shortly before the end of hostilities, the company's application for an air carrier certificate was again considered and in May, 1946, it was authorized to service twenty-five cities in California, and Medford, Oregon on a three year experimental basis.

Southwest, during the thirty months it has been in full operation as a scheduled air carrier, has made a number of contributions to the art and practices of airline operation. One such contribution was a flight equipment conversion plan designed to improve the arrangement of a DC-3 aircraft so as to make it more suitable for airline use, especially for short-haul operation. In this plan the forward cabin bulkhead was moved ahead two stations, thus eliminating the forward cargo compartment, which cannot be easily used for cargo in the standard arrangement because of difficult loading and unloading. By locating passengers in this area, the space is efficiently utilized and at the same time, cargo can be loaded rapidly.

A loud speaker system was installed, making it possible for the flight crew to give instructions to the passengers more rapidly or to keep them informed of the progress of the flight and to call attention to special items of interest during progress of the flight. Other contributions were made by originating new procedures for getting the aircraft in and out of stations more expeditiously. The practice of installing gust locks and landing gear pins was discontinued. Safe procedures were developed and perfected to keep one engine running throughout the stop at an intermediate stop. This has made it possible to cut down the time the aircraft is stationary at an intermediate stop to 1½—2 minutes.

To improve regularity and reliability of service, Southwest developed operating procedures for an all weather operation at Arcata (Army-Navy-Civil Landing Aids Experiment station) and has made more than 100 scheduled landings at that station (which serves Eureka) using manufactured weather. This operation utilizes FIDO, GCA, High Intensity Light, and ILS. Southwest's first use of these aids, more commonly known as the "integrated landing aids", on December 14, 1947, marked the first time a scheduled air carrier or, as a matter of fact, any commercial aircraft used manufactured weather in regular operation.

Another contribution to the safety, regularity and reliability of air transportation was Southwest's development of procedures which utilize commercial radio broadcast stations as primary aids to air navigation. When these were first approved by the CAA on February 9, 1948, their use was limited to Southwest's operations. At a later date, after more than 400 instrument approaches had been made on stations at five different cities without one incident wherein safety was impaired, a master specification was issued by the CAA which it is hoped will make the procedures available to the entire industry. This had the effect of adding an estimated 2,300 non-directional homing beacons to the country's air navigation facilities without added expense to the Government. (Continued on page 16)

CAA AT THE LOS ANGELES AIRPORT

The Los Angeles Airport is unique in the Sixth Region, and perhaps nationally, in that CAA projects completed and underway will provide maximum safety in all weather and under virtually any traffic situation. FIDO (Fog, Intensive, Dispersal of) has been installed, and other new installations will include slope line lights, surveillance radar, approach radar, distance measuring equipment, and high intensity runway lights.

The original Los Angeles Radio Station was commissioned at Brand Park, Glendale, California, in 1929, using call letters KCT. Don Fulton is the present Chief of the Station and is in his 18th year with the CAA. The Los Angeles INSAC has one of the highest activity records in the Sixth Region. The personnel complement includes a secretary to the Chief, and 19 Aircraft Communicators. The station is located on the first floor of the Airport Administration Building over which is the local Weather Bureau Office. A pneumatic tube connection between the offices is used to transmit weather information.

L.A. COMMUNICATIONS STATION

Los Angeles Station personnel have figured frequently in situations which have been of national interest. Many contacts were made recently with endurance flyers Dick Riedel and Bill Barris during their successful attempt to set a new endurance record. The station was also called upon by Dr. Irvin Krick to transmit the latest weather information to stations along Bill Odom's line of flight. Dr. Krick, who operates a commercial weather forecasting office, had been commissioned by Odom's backers to furnish this service.

The Station is called upon to perform special tasks incident to its location and because it is near the Regional Office. For example, the station handles many administrative messages for the Regional Office, and the local CAB office, including all messages pertaining to aircraft accidents which are received and distributed to CAA and CAB. The station conducts many personnel interviews and teletype speed tests for potential employees for the 8th and 9th Regions. Applicants residing in this area are furnished with letters instructing them to call at the Los Angeles Station where the job testing is administered. The Chief Aircraft Communicator then completes the test records and forwards them to the originating office for final decision. Officials representing foreign countries often visit the station to observe the operation. They usually accompany aviation groups who are attracted to the Los Angeles area because of the aviation manufacturing being carried on here.

The MTIC at the L.A. Airport is drawling Wallace Barry, a product of the Lone Star State. Barry's staff consists of a secretary, 6 Radio Maintenance Technicians, 6 Radar Technicians, and 1 General Mechanic. The Radar Technicians have been made a part of his complement in order to maintain the precision approach and surveillance radar installations now nearing completion at the airport. All six have com-

SURVEILLANCE RADAR TOWER

pleted or are in the process of completing specialized courses in radar theory and maintenance. Wallace has also completed the CAA radar course at Oklahoma.

Typical of the Airways Maintenance Technicians is Samuel Randler, whose principal responsibility is the localizer. A permanent localizer was located at the west end of the main east-west runway until December, 1946, when a United Airlines plane overshot the field and completely demolished the localizer building and equipment. A portable localizer was placed into operation at the old location. As runway changes and improvements occurred, the localizer is now in its sixth position! It is now placed to the north of the west end of the runway in order to get it out of the way of aircraft taking off toward the ocean. It is still menaced, as evidenced by the fact that a run-away jet plane recently crashed into the localizer transformer, barely missing the antennae and transmitter.

ILS LOCALIZER

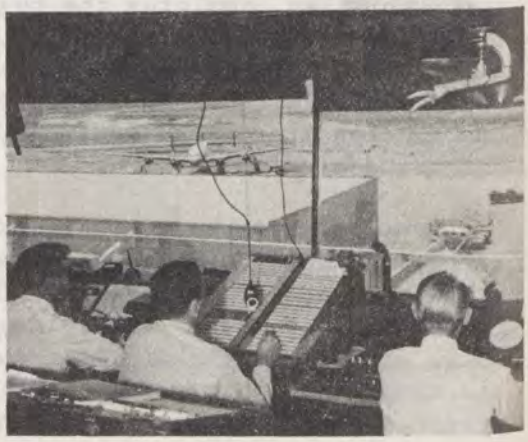
The Los Angeles Tower was built by the City prior to the war. With the coming of war, and the recognition of the Los Angeles Airport as an important field from a defense standpoint, the CAA took over the traffic control function at the request of the military forces.

Ro Lemmer, a native of Holdingford, Minnesota, is Chief Airport Traffic Controller. Ro was an Airport Traffic Controller at the time the CAA took over the tower and was promoted to Chief.

The Controllers are looking forward to the commissioning of the precision approach and surveillance radar facilities which they expect will expedite approaches and assure greater safety. Lemmer and six of his men have successfully completed a four-week course of instruction in GCA conducted by the CAA in Chicago.

Los Angeles tower has considerable jet and helicopter activity. Jet aircraft sometimes present problems because of high speed and limited fuel capacity. As Dick Fisher says, the interspersing of scheduled operations, jet aircraft, experimental aircraft, and helicopter traffic makes it necessary for the Los Angeles traffic controllers to use the eyes in the back of their heads.

Helicopters have a separate traffic pattern which is at a right angle to the usual traffic pattern. They must be cleared for each landing, take-off or movement just as any other aircraft. There are 40 to 50 scheduled helicopter operations per day, plus take-offs and landings practiced by student fliers. The helicopter terminal is on the south side of the runway and the landing area is on the north side, which means additional tower worry in clearing the 'copters to taxi across the runway.



LOS ANGELES TOWER

PERSONALITY OF THE MONTH

Tall, athletic, versatile Arnold Heimerdinger has carved quite a niche for himself in the scant three year span he has been associated with the CAA as a Flight Engineering Agent.

Fresh out of the Navy in November, 1945, with a background in aviation dating back to his private pilot days in 1934, he liked the idea of sticking with aircraft piloting on a big scale. So it was a natural for him when he received the nod to take indoctrination training as a test pilot in Augusta, Georgia.

He drew his Region 6 assignment in May, 1946, and it didn't take long for the Region to realize that "Heimie" was a real find.

It wasn't by accident that the Aircraft Branch picked him to coordinate with the Boeing Plant as the Flight Engineering Inspector in charge of the type certification for the Boeing Model 377 Transport Airplane. Heimie recalls that all of his flight tests during the process of certification weren't exactly gentle. For one bit of cool judgment and piloting finesse in December, 1948, he has been recommended for an "exceptionally meritorious" award. The incident occurred during the conduct of anti-icing tests under actual icing conditions. A fire was observed in No. 3 engine nacelle. Heimie's crew sized up the situation and brought the big transport plane in for a safe landing despite a rather severe cross-wind.

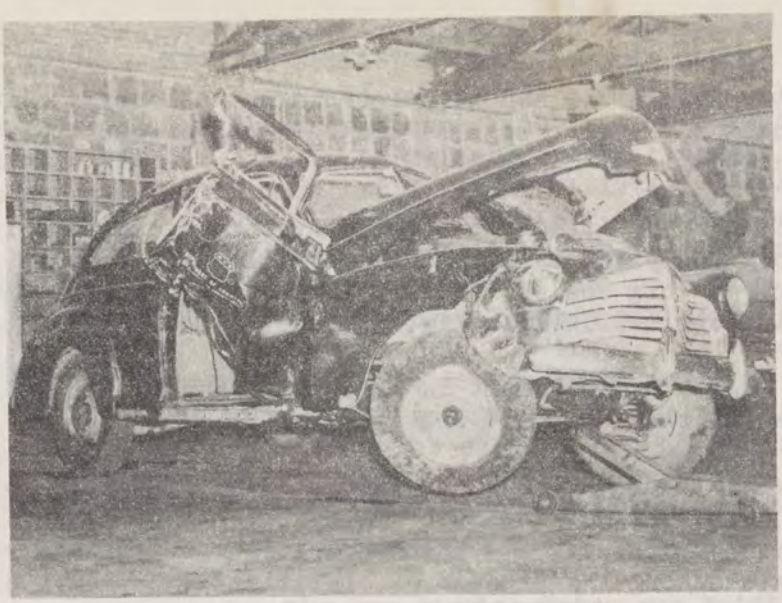
In addition, he has had testing assignments on the Navion, Navy PBY and DC-6 (anti-icing and water injection).

Heimie was born in Manchester, Michigan, on December 7, 1910. During his school days in Ypsilanti, his tall angular physique made him a natural for athletics. He was selected as catcher on the All-State Michigan High School team. While attending college at Michigan State Normal, he inked a contract with the New York Yankees. He was sent to the Newark Club of the Yankee farm system for further seasoning. A knee injury while skiing before he could display his talent in big time Pro baseball convinced him that a vocational change would be financially advisable.

From 1930 to 1941, Heimie was a service representative and field agent with the Detroit Edison Company in Ypsilanti. He next became a final inspector with the Cadillac Motor Car Co. and then with the Ford Motor Company at the Willow Run Plant.

During the war years (1942-45), he was a Naval flying officer. At first he was a flight instructor in New Orleans, Hutchinson, Kansas, Norman Oklahoma, and Dallas, Texas. In 1944, he was ordered to the Naval Air Station at Norfolk to conduct experimental flight tests on fighters, bombers, flying boats and seaplanes. As a full lieutenant, he received his discharge in September of 1945.

His wife is the former Mary Aileen Eggert of his native Michigan. His present hobbies consist of golf and bowling. He admits that he's too close to that 40 year mark for anything more strenuous.



CAA AUTOMOBILE ACCIDENTS ON INCREASE

Here lies the body of Julian Gray
Who died while taking the right of way
He was right, dead right, as he sped along
But he's just as dead as if he'd been wrong.

Nearly every automobile accident is caused through ignorance or carelessness on the part of the driver. The number of accidents that occur as a result of mechanical failure in properly cared for cars or of improperly constructed highways is such a small part of the total that it is negligible.

Let's take a look at our own box score. During the 1948 calendar year, CAA (Sixth Region) automobiles engaged in 43 accidents with responsibility divided as follows:

Negligence on part of Government driver.	22
Negligence on part of private party.	15
Contributory negligence.	6

During the same period, the Government, as a result of these accidents, suffered a net loss of approximately $4,815 in repairs and settlement of claims, and this does not include the man hour loss nor the Administrative time required to handle such cases.

Our record during this period indicates that we had, on the average, one accident for every 100,000 miles driven. While this is somewhat below the national average, it is still high when we consider the maturity and experience of our employees as contrasted to the percentage of immature drivers in the national figure who are responsible for a large percentage of accidents, especially those involving fatalities.

Disturbingly enough, the accident rate for the first 5½ months of this calendar year is comparable, there having been 20 accidents reported to date. It seems to

(Continued on Page 11)

"BIG EGGBEATER"

Regional Office employees were treated to a first hand peek at the new "Hiller 360"; the production helicopter designed and developed by United Helicopters, Inc, of Palo Alto, when it made an unscheduled landing in our front parking area a few days ago.

This ship, recently granted a Commercial license, was designed by 23-year old Stanley Hiller, President of United, to meet the varied requirements of agricultural, industrial and commercial helicopter operations. It is powered by a Franklin 178 H.P. Motor and carries 3 passengers. Its cruising speed approximates 75 m.p.h. and it burns about 32 gallons of gasoline per operating hour. A unique characteristic of the "360" is a simplified rotor system which consists of an overhead control stick eliminating all cables, pulleys and levers found in conventional helicopters.

For the sportsminded, helicopters may be equipped with pontoons and set down on the lake of your choice for a bit of fishing. Full price - only $20,000.

They tried a unique stunt recently in New York - golfing by helicppter. It was easy for the caddy-pilot to spot the ball and land near it, but he had to cut his motor on the green putts. The rotor blasts blew the ball back onto the fairway.

COAST TO COAST - NO HANDS

A DC-3 landed at the San Francisco Airport recently after a flight from Minneapolis, Minnesota, during which no hands touched the controls. The take-off time was 4:00 a.m. PST, and it landed in San Francisco at 5:00 p.m. PST. The plane flew by automatic pilot both take-off and landing, as well as the trans-continental flight. The complete operation was controlled by radio impulses from the path of omnidirectional radio stations across the country.

Question Box ... eh!

Q. Will revision and correction sheets for the Regional Warehouse Catalog be distributed to the field?

A. Rather than send revision sheets to the field, we are planning to revise and distribute the various catalog classes beginning in July.

Q. Why are Federal Airways facilities required to report every item that is issued on the Record of Consumption report when it is forwarded to the Regional Office?

A. It is the objective of the station stock control plan to reduce the number of invoices to each facility to a minimum. This can only be accomplished by bringing the station stock up to full maximum allowance each time a shipment is made. This, in effect, eliminates the formal semi-annual period, but provides, ordinarily, for no more than two shipments per year.

Q. When authorized to secure bids locally, is it permissible to advertise in the local newspapers?

A. No. It is the policy of the Administration, except in rare instances, not to advertise invitations to bid for purchases, or sales, in newspapers. In addition to submitting bids to local suppliers, or buyers, a copy of the Invitation to bid should be given to the local Postmaster for posting.

Q. May bids for purchase of, or sale of, material be submitted by Government employees?

A. Yes. But such bids may only be considered after readvertisement and provided no other bids are received in response to either advertisement. In no event may bids be accepted from employees who participate in or have responsibility for deciding the award.

Q. If I am a permanent employee and desire to transfer to a different line of work, what qualifications must I meet?

A. You will be required to meet the experience requirements for the position and if a written examination has been given, you will ordinarily be required to pass the written test on a non-competitive basis.

"JATO"

When we refer to "Jato", we mean jet assisted take-off, not "Smilin' Jack's" girlfriend. a JATO unit is essentially a rocket in which the propulsive force is the reaction to the discharge of the combustible material out of the discharge noggle.

JATO offers great possibilities for improving the utilization of aircraft in commercial service. On an airplane like the DC-4, two JATO units will permit the airplane to be safely operated at maximum gross weights from elevated airports or from relative short length fields at lower altitudes. JATO may be used either to provide additional thrust during the take-off to get the aircraft airborne sooner, or as a standby source of power to be used only in the case of an engine failure. CAA performance requirements for transport aircraft require that field lengths be predicated upon the expected failure of an engine occurring right at the time of take-off. For this reason, the gross weight of an airplane may have to be reduced below the maximum allowed by structural considerations in order to provide the required safety factor for short fields or for fields at higher altitudes in which the engines cannot develop full power. Two JATO units weighing only 500 pounds may permit an increase in gross weight of possibly 2500 pounds on some aircraft in order to meet minimum safety requirements under the above conditions.

A small JATO unit has been developed for contemplated use on small engine personal type aircraft. This unit will exert 250 pounds thrust for about 12 seconds, and weighs less than 50 pounds. When installed on a small two-place airplane, this little JATO would provide sufficient power to carry the airplane a thousand feet into the air in event of an engine failure occurring on take-off, which would give the pilot sufficient altitude to return to the airport and make a safe landing.

During the war, JATO was used very effectively on large military aircraft in getting them airborne in a minimum amount of runway length. Large aircraft with high wing loadings require a lot of power to get them airborne, but once airborne, they will cruise at maximum weight of as little as 50% of the available power. Therefore, the short duration of thrust provided by JATO permits the use of smaller horsepower engines than normally required to get the aircraft airborne.

Other novel uses of JATO during the war were on assault barges in which a bank of JATOS would be fired just as the assault barge approached the beach. This thrust would carry the boat through the breakers and well onto the beach, thus permitting the troops to embark on dry land. Heavy six-wheel military trucks mired deeply in the mud could be blasted out of the mud onto dry ground by the use of several JATO units.

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CAA AUTOMOBILE ACCIDENTS ON THE INCREASE (Continued from Page 8)

be a good time to check our responsibilities and our driving practices and to begin NOW to develop good driving habits.

First, as a driver of a government car, you are presumed to be a competent driver and are required and expected to be familiar with local and state traffic laws. It is expected that you will observe the common courtesy rules of

the road and will so conduct yourselves as to reflect credit to the service. Yet seven accidents last year were attributable to failure to give right of way. Figuratively speaking you, the operator, while on Government business have no right of way. Let the other fellow have it. Time lost in giving rights of way is time well invested. Eight accidents resulted from following other vehicles too closely. Too large a percentage of drivers engage in this dangerous practice. The distance at which it is safe to follow another car depends upon speed, road, traffic, weather and light conditions, car condition and your own alertness. It is a greater distance than most drivers realize. A simple rule of thumb followed by many professional drivers is: A DRIVER WITH AVERAGE REACTION TIME SHOULD STAY AT LEAST 20 FEET OR SLIGHTLY OVER ONE CAR LENGTH BEHIND THE CAR HE IS FOLLOWING FOR EACH 10 MILES PER HOUR OF HIS SPEED. At 50 miles per hour, therefore, the safe following distance is 100 feet.

SPEED: Excessive speed in view of conditions, was cited in many cases as a contributing factor. No person shall drive a vehicle upon a highway at a speed greater than is prudent and in no event at a speed which endangers the safety of persons or property. Under no circumstances should speed, or the element of time, cause you to drive in an unsafe manner. Speed is treacherous - respect it. Stop and consider, if you will, how many feet it will take you to stop your machine if you are traveling 50 miles per hour. If your brakes are excellent and your reaction time is good, you will be able to stop in about 178 feet (better than half a block), at the minimum. This probably seems out of reason, but actual tests have proven the above figure to be better than average. The above figure is the distance from the point where a signal is given to stop to the point of actual stop. The surprising fact is the distance required to actually get your foot on the brake. At 50 mph, you are traveling 75 feet per second. Average reaction time, or time to get your foot on the brake, is 3/4 of a second. So at 50 mph, you travel approximately 60 feet or better than three car lengths before you ever get your foot on the brake. The common conception that you can practically "stop on a dime" at 50 mph, is, therefore a dangerous one.

Accidents have also resulted from miscellaneous other causes which, with forethought, are preventable. Remember there is no such thing as an unavoidable accident. They are "caused occurrences". Knowledge and constant use of sound driving practices building into good habits will avoid these driving errors:

IMPROPER PASSING: The most important rule in overtaking is: OVERTAKE AND PASS ONLY WHEN YOU ARE SURE YOU CAN EASILY MAKE IT SAFELY. A slow vehicle crawls up the hill ahead of you. The driver beckons you to pass. If you pass "blind" you abandon your own judgment and trust to his. If the result is an accident, YOU are the one who suffers and who pays the damages. When anyone signals his desire to pass you, courtesy as well as the law in most states requires that you do nothing to interfere, either by obstructing the roadway or by increasing your speed. Your responsibility goes further. Keep to the right and reduce speed slightly.

STOPPING ALONG THE HIGHWAY: Never stop in such a position on the highway that vehicles approaching from behind will come upon your car unexpectedly or be forced into danger by having to move around you on the wrong side of the road. Always pull OFF THE PAVEMENT. A driver who sees a tail light ahead may not realize soon enough that it is on a car that has stopped, particularly if he is facing the light of an oncoming car.

ROUNDING CURVES: Good drivers slow down BEFORE, not after entering a curve. A car is steadier on a curve when the engine is pulling than when it is coasting, or being slowed down. Therefore, a driver should enter the curve slowly enough to enable him to accelerate slightly when rounding it. Having to brake on a curve is a dead give-away of incompetent driving. Stay on your own side of the road on curves! Many drivers "flatten" a curve by cutting across the inside lane. This is an extremely dangerous practice as it fouls a lane they have no right to drive in.

GOING OVER HILLS: NEVER overtake a vehicle near the crest of a hill. Your traffic "sight-distance" ends at the hillcrest and so you can never safely cross the center line. It is irritating to follow a big slow moving truck up a long winding hill and have to shift to a lower gear. But if the only alternative is to pass without seeing far enough ahead, an experienced driver follows the truck at a safe distance and takes his delay philosophically.

Next month: DEFENSIVE DRIVING

TIME MARCHES BACKWARD

You World War I pilots will be interested to know that a replica of the airplane flown by Lincoln Beachly way back when (1912-1914) is being built by an enterprising gentleman in Coronado. It is a "Pusher Byplane", hand made of customary composite construction and practices, sometimes referred to as "stick and wire construction."

Both the former Beachly Byplane and the one under construction use rotary engines, wooden propellers and carry about three-fourths of one hour's gasoline, gravity fed. General specification and performance follow:

Length	18'
Wing span	21'
Weight dry	800
Useful load	400
Ceiling	10,000 feet
Climb	500' per minute
Engine	9 cylinder
Duration	Main tank 3/4 hr at 80 throttle auxillary 1¼ hr at 80 throttle
Full power	80 MPH
Landing	40 MPH
Stalling	30 MPH

The builder expects to use the plane for educational and exhibition purposes at fairs, displays, air shows and motion picture work around Hollywood.

LOS ANGELES AIRPORT CONSTRUCTION PROGRAM

On October 1, 1928, the City of Los Angeles entered into a lease with Wm. Mines for a square mile of land to be used as a municipal airport. This land was purchased by the City in October, 1937, so that it was possible to utilize WPA funds, City funds and, later, defense airport funds in the development of the airport. Additional land for future extensions and protection of the approaches was later purchased, and on December 9, 1946, the terminal operations of the airlines serving the greater Los Angeles area were moved from Burbank to Los Angeles Airport.

Ranking fourth in the nation, Los Angeles Airport last year handled 5% of the total air traffic in the United States and nearly half of all air carrier business in the State of California. Over 1,000,000 passengers landed or took off, and 18,000,000 pounds of air mail and nearly 33,000,000 pounds of air cargo passed through the terminal.

Eight scheduled airlines use the field and carry passengers to all parts of the nation and to such international locations as South America, Australia, Europe and Asia.

$12,000,000 has been invested in the field by the City and the Federal Government. The land, some 2,518 acres, is valued at $5,723,747, while improvements, such as buildings, runways, taxiways, hangars, drainage, etc. amount to $6,077,425. In addition, the airlines using the field have invested approximately $8,500,000.

More than 3,600 employees work on the field for the municipal and federal governments, the airlines, and concessionaires. Total annual payroll for this group is close to $14,000,000. North American Aviation and Douglas Aircraft, which are housed on the field, employ some 23,000 people, with a yearly payroll of approximately $100,000,000.

The sketch on the following page shows the manner in which it is intended to develop this airport further. Sepulveda Boulevard will be routed underneath the airport via an underpass and Lincoln Boulevard and a temporary detour will ultimately be abandoned when the traffic is routed through the underpass.

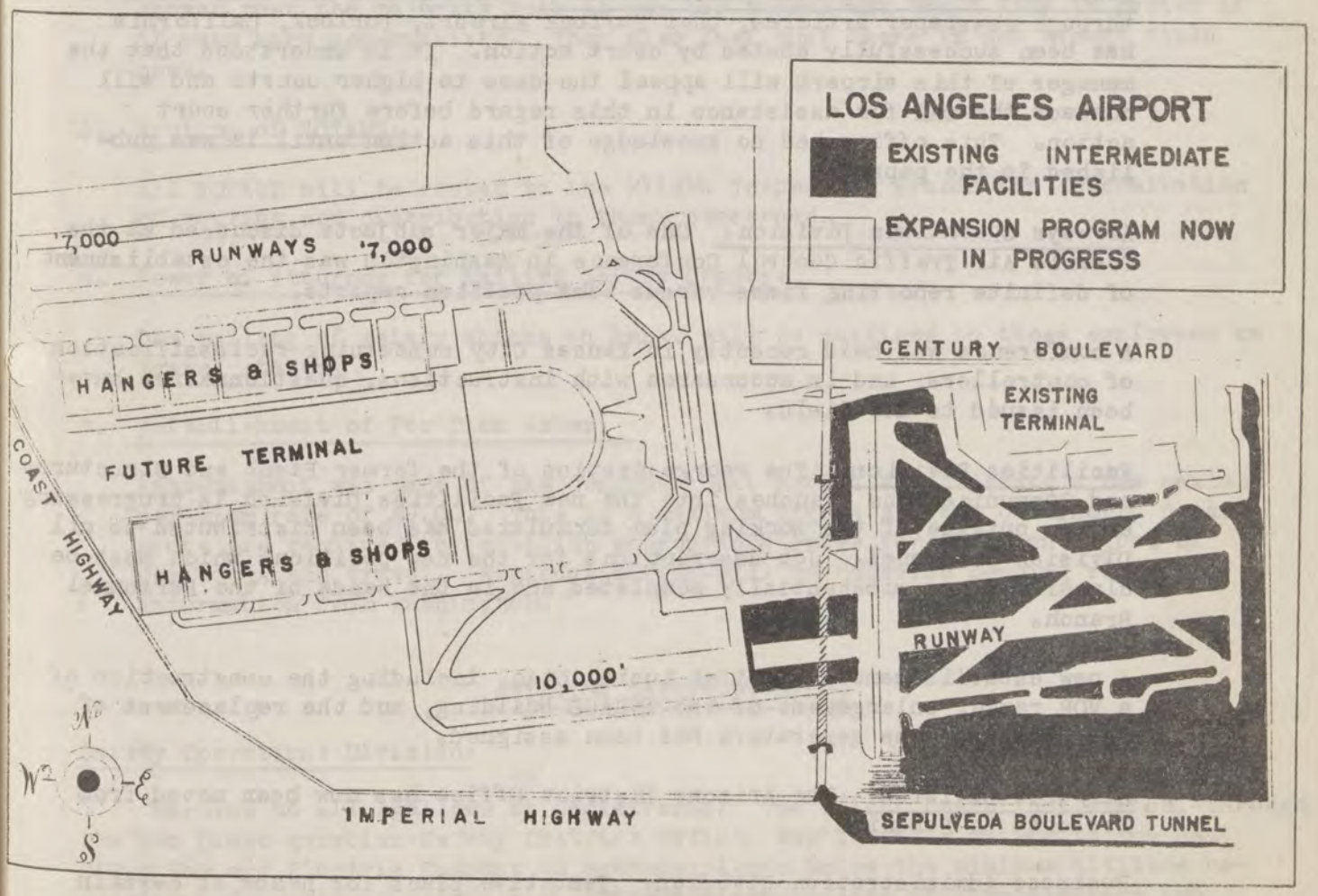
The main E/W runway, which is at present 6,000 feet long, will be extended to an ultimate length of 10,000 feet. The new terminal area will be placed west of Sepulveda Boulevard where there will be ample space for the latest type of building, with adequate aprons and parking area for aircraft and automobiles.

The airport will operate on a modified tangential system in order to speed up in and out operations. The prevailing winds are from the west, so the normal procedure will be for an incoming plane to land on the main runway in the south half of the airport, complete its landing near the terminal area where it will discharge passengers, taxi to the north to take on new passengers and take off to the west from the northerly group of runways. When the wind is from the east, this procedure will be reversed with landings in the northerly area and take-offs in the southerly area. In view of the fact that these two directions cover practically all of the wind conditions, it is possible at Los Angeles to handle the same amount of traffic that is handled at Idlewild which has eight runways costing in the neighborhood of $300,000,000. One additional N/S runway will be provided at Los Angeles to take care of those unusual conditions when there is a strong north wind, generally not over 5 days per year.

At present, the installation of FIDO (Fog, Intensive, Dispersal of) is being handled by a City-Federal aid project at a cost of $842,350, of which the Federal share is $455,459. The initial phase of the airport extension which covers grading about 12,000,000 cubic yards of dirt will cost $3,363,731, of which the Federal share is $1,798,541.

Negotiations are now under way for relocation of the two high voltage power lines which run in a N/S direction through the extended area. The Sepulveda underpass is now being designed and the City is preparing plans for installing high intensity runway lighting system at a cost of approximately $100,000, of which the Federal share will be $54,000.

The airport is now served by an intermediate frequency radio range, VHF aural-visual range, CAA ILS, and low intensity neon approach light lane. The Facilities Division is working on the installation of a high intensity slope line approach light lane, surveillance radar and precision beam radar so that this airport will shortly be equipped with the finest and most up-to-date navigational facilities.



SOUTHWEST AIRWAYS (Continued from Page 4)

In 29 months of operation ending April 30, 1949, Southwest served its 25 stations collectively more than 100,000 times, flew over 39 million passenger miles, and carried 214,000 passengers and over 4 million pounds of mail and carbo using new efficient procedures described herein with a flawless safety record.

SUMMARY OF REGIONAL ADMINISTRATOR'S STAFF MEETING

Twice monthly, the Regional Administrator holds a staff meeting, attended by all Division Chiefs. So that all employees may be cognizant of the matters discussed at the top level in the Region, it is planned to print a summary of these meetings in the Region Six News each month. The following is a summary of the meetint held June 21, 1949:

1. Reports of Division Chiefs:

Deputy Regional Administrator: It was suggested that all ICAO material be transferred to Art Johnson's office and that he be responsible for any coordination between Divisions.

Assistant to the Regional Administrator: Information has been received through newspaper articles, that Turlock Airport, Turlock, California has been successfully abated by court action. It is understood that the manager of this airpark will appeal the case to higher courts and will contact the CAA for assistance in this regard before further court action. This office had no knowledge of this action until it was published in the papers.

Airways Operations Division: One of the major subjects discussed at the Oceanic Air Traffic Control Conference in Washington was the establishment of definite reporting fixes versus time position reports.

A conference was held recently in Kansas City concerning reclassification of controllers, and in accordance with instructions, questionnaires have been issued to the field.

Facilities Division: The reorganization of the former Plant and Structures and Communications Branches into the new Facilities Division is progressing and an outline of the working plan formulated has been distributed to all Division personnel. Job descriptions for the new positions which must be classified are substantially completed and in the hands of the Personnel Branch.

A new establishment project at Lucin, Utah, including the construction of a VOR range, enlargement of the INSACS building, and the replacement of the Diesel engine generators has been assigned.

Airports Division: The Arizona District Office has now been moved from Prescott to Phoenix.

Business Administration Division: Tentative plans for heads of certain Washington Offices call for the Planning and Evaluation Division to be headed by Mr. F. B. Lee; Budget and Management and Personnel to report to Mr. Nyrop and Mr. Sturhahn, former Director, Office of Business Ad-

ministration, has been assigned as Mr. Nyrop's Executive Assistant.

Plans are being formulated in Washington for a staff school at Oklahoma City to consist of a three months' course. Attendance will be compulsory for all key personnel down to the Branch level. An attempt is being made to get legislation passed to permit key personnel to attend university courses in management such as the one conducted at Harvard University.

Aircraft Division: Mr. George Haldeman, former Supt. of the Aircraft Division in this Region, and a group from Washington flew the CAA DC-3 with the cross wind landing gear to Los Angeles to conduct additional tests on the gear. (For details regarding these tests, see page 18)

Safety Operations Division: Bonanza Airlines have received a CAB Certificate authorizing Phoenix-Reno operations using DC-3's.

2. Evaluation of Region Six News:

Business Administration Division Branch Chiefs have made a survey of opinions regarding the News during recent field trips and the results tabulated showed that the majority felt it was too formal and would like it better if it were more personalized. They also feel that there is not enough field news.

3. Routing of NOTAMS:

All NOTAMS will be routed to the Flight Inspection Branch for determination of routing and distribution to those concerned.

4. Power of Attorney for Mailing Salary Checks:

The mailing of salary checks to banks will be confined to those employees on travel status.

5. Establishment of Per Diem Rates:

Announcement was made of the Congressional action establishing a new maximum per diem rate of $9.00. This is a maximum figure and the Government Departments are required to establish appropriate rates for different types of positions and travel. Regional action will be deferred pending receipt of information from Washington.

AVIATION SAFETY HI-LITES

Safety Operations Division:

Warning to all swallows at Capistrano!! The Flight Operations Branch, through the San Diego Aviation Safety District Office, has issued a waiver to the San Diego Gas and Electric Company to operate planes below the minimum altitude requirement in order to patrol high tension electric line at approximately two week intervals, Mission Valley Substation, North rim, Texas Street, San Diego, to San Juan Capistrano and return.

Mr. William Hudson, Scheduled Air Carrier Agent, Los Angeles, recently returned from the East where he took a refresher course in helicopter training. One week was spent at Sikorsky and one week at the Bell Aircraft Company.

Mr. William Perry, Non-Scheduled Operations Agent, Burbank Office, has improved to the extent that he has been taken to his home, where he is getting around in a wheel chair and crutches. He hopes to be back on the job within the next sixty days.

Mr. A. C. Burns of the Airman Standards Branch, attended an Aviation Advisory Committee meeting, held in the California State Building, Los Angeles, California. The general topic discussed was Aviation Training now in progress in the public trade schools and junior colleges of Southern California and particularly aircraft and engine mechanic training courses.

Many inquiries are being received from commercial pilots regarding training courses on helicopter. At the present time, the Sixth Region has only one CAA approved helicopter school for flight instructor training which is located in Los Angeles.

Aircraft Division:

CAA's Douglas DC-3 with the CAA sponsored Goodyear cross-wind gear was in Los Angeles recently and Sixth Region flight personnel from Safety Operations and Aircraft Divisions had an opportunity to evaluate the gear. Take offs and landings were made by eight different pilots. The site selected for the flights was Palmdale, where the wind was blowing 31-32 mph. with gusts up to 37 mph. The runway used was at 75° to the wind direction.

None of these pilots had had any previous experience with the cross wind gear and, although there was a noticeable tendency for some to follow their early teachings of lowering the wing on the windward side prior to touch down, they soon caught onto the fact that this was unnecessary as, although the airplane was in a "crab" position in relation to the runway, the gear took care of the crab on contact.

Even with such a strong side wind component, it was found unnecessary to use much brake during the landing roll. Taxiing was relatively simple and could be satisfactorily accomplished by proper use of throttles, without the necessity of "riding the brakes".

The main wheels pivot and are free to turn through an arc of 30°. The pivot point is within the wheel itself. The tail wheel does not lock since it obviously must remain free at all times; otherwise, it would be under constant side loads. As the airplane moves forward along a taxi strip or runway, the center line of the fuselage may be at an angle to the direction of movement. The greatest obstacle to be overcome is the ridiculous feeling a pilot has in moving straight down a runway when his airplane is heading off to one side.

An application for type certificate was received from the Aircraft Conversion and Maintenance Company of Tucson, Arizona, for their Model 9 light roadable aircraft, which is similar in design to the Bowlus Baby Albatross. This aircraft is a two-place closed cabin monoplane, incorporating a Lycoming G-235 engine in the lower aft portion of the cabin, with an estimated gross weight of 1800 lbs.

Airways Operations Division:

L. Ponton de Arce, Chief, Air Traffic Control Branch, and Glenn Simonson, Chief, Air Traffic Control Center, attended a conference in Washington on Oceanic Traffic Control. Representatives of all Regions were present, as were officials of the CAB and Air Force. Simonson served as Chairman of a Committee which considered flight posting procedures and equipment.

John Garrison, Air Traffic Control Branch, attended a conference on position classification at Region 5, Kansas City, June 14. He has accompanied by G. M. Riley, Personnel Officer.

Seventeen Aircraft Communicators have been given separation notices as a result of action taken by the House of Representatives whereby the complement of each Class I and Class II stations is to be decreased one position. Civil Service reduction-in-force procedures were strictly adhered to in determining those affected. An interesting sidelight is furnished by the resignation of Bond F. (Pappy) West, Los Angeles station. Pappy was up for retirement in 1950, but advanced his resignation one year in order to permit an employee affected by the reduction to remain on duty. His was a true act of unselfishness for which Pappy deserves much credit. He has had a long career with the CAA, serving at various stations in the Sixth and Seventh Regions during the past 18 years. He is a Navy veteran and is 61 years old.

Facilities Division:

New Project Assignments:

At Lucin, Utah, a VOR Range, enlargement of the INSACS, enlargement of the powershed and replacement of Diesel engine generators have been scheduled for accomplishment during the early fall. Funds for construction of five units of living quarters have also been requested in the 1950 program. The housing construction will be carried out concurrently with the other projects if it is possible to negotiate leases and arrangements for water with the Southern Pacific Railroad.

Negotiations are underway with Transocean Air Lines for sufficient space in the Administration Building to house the INSACS at Arcata. Building modifications will be made concurrently with the construction of the previously approved instrument landing system. It is expected that the INSACS installation will be completed by October 15, 1949.

Construction of a MRL radio range to serve the Miramar Navy Base at San Diego has been assigned. The project will be constructed for the Navy, with Navy funds, and Navy materials will be utilized.

Construction:

The construction of the watchhouses at Ukiah and Crescent City has been completed, and Engineer Seewald is reporting back to the Regional Office for reassignment. Construction of the new building for the combined CAA and Weather Bureau use and the new control tower at Reno has been completed, and Engineer Steene has reported to the Regional Office. The Weather Bureau is occupying

the new quarters at Reno and the installation of the new console equipment is underway in the CAA quarters. This project has been given first priority in the console program.

The Navy assembled the towers, buildings and other equipment necessary for the new SRA range to be constructed adjacent to the Camarillo, California flight strip. A contract is being awarded, and it is expected that the work will be underway July 19, 1949.

The contractor arrived at Winnemucca, Nevada on June 4, 1949, and started the work of completing the combined Weather Bureau and CAA building.

Equipment installation was completed by the Construction Branch, flight checks made by the Flight Inspection Branch, and the following VOR's were commissioned for use during the month: Battle Mountain, Lovelock, Sod House, San Jose. The Blythe Range was flight checked and found satisfactory, and it will be commissioned as soon as commercial power is extended.

Maintenance:

All District Supervisors and Inspectors in the Facilities Division were called in to the Regional Office on May 31 for discussion of reorganization and work programs. This group, together with regional office maintenance Branch personnel, met with Mr. W. E. Kline, Director of Federal Airways, for discussion and review of maintenance problems in general.

Joseph H. Betka, General Mechanic, was killed in an automobile accident on U. S. Highway 395, eight miles North of Carson City, Nevada. Mr. Betka was returning to the Regional Office from an assignment in Reno, Nevada at the time the accident occurred. No other car was involved in the accident.