AVIATION WEEK
AUG. 11, 1947
INCORPORATING AVIATION AND AVIATION NEWS
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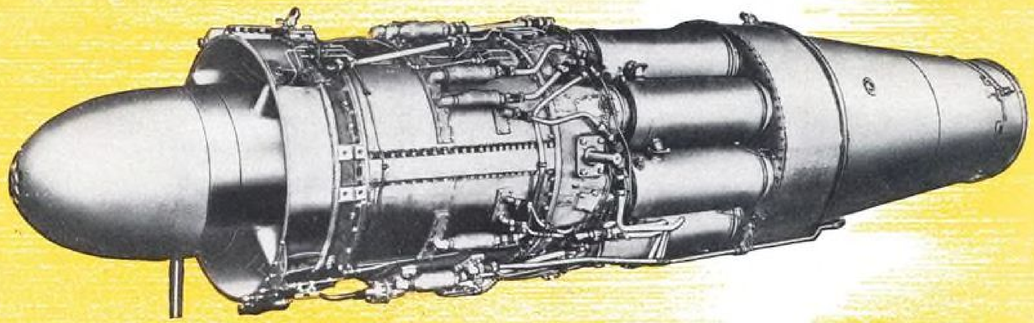

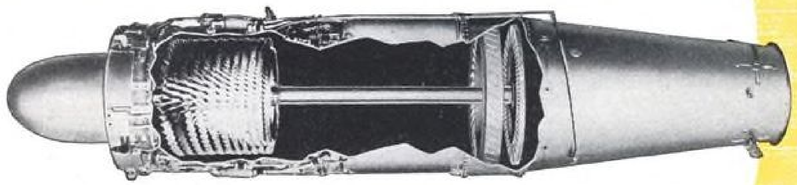

The General Electric TG-180 jet engine shown above develops the equivalent of 5000 h.p.—air speeds well over 500 m.p.h. Right, an artist's conception of a jet engine interior shows, left to right, many-bladed compression assembly, shaft, nozzle diaphragm and turbine wheel—precision components built by Thompson Products.

The jet engine was a toy  2000 years ago!

Nearly 2000 vanes, blades and buckets go into the various jet engine components built by Thompson Products for the TG-180. The rotor compressor assembly pictured here is being lowered into a testing pit where it is whirled at high speeds during final inspection.

THE BASIC PRINCIPLES OF JET PROPULSION have been known since Hero of Alexandria, 130 years B.C., designed a primitive engine to operate a toy.

In the centuries following, many inventors and engineers tried to perfect a workable jet engine, but failed because materials could not be found that would stand up under intense heat and heavy centrifugal strains.

A never-ending search for high-strength, heat-resisting alloys, and better methods to turn them into precision parts for modern jet engines, has been an important part of Thompson research and engineering.

Just as Thompson improvements in parts design and engineering have contributed to increased operating life and efficiency of reciprocating engines, so will jet propulsion engines benefit by continued Thompson research.

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FIRST IN RUBBER

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THE AIRLINES have maintained schedules with De-Icer protection for fifteen years. Business men can "stretch" the utility of their own planes the same way.

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FIRST IN RUBBER

AVIATION WEEK

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THE AVIATION WEEK

CHARGE TO CHANGE—Aviation attention focused on Capitol Hill and the charges of Howard Hughes against Sen. Owen Brewster has been partially diverted to a change in the Government's aviation administration—John R. Alison for William A. M. Burden as Assistant Secretary of Commerce for Air. Somewhere along the line in the closing days of Congress, the selection of George A. Stone, of Columbus, Ohio, picked some months ago to succeed Burden, ran into opposition. His name never went to Congress.

Appointment of Alison was a complete surprise. Industry scrutiny of his background relieved some of the puzzlement. In addition to an excellent war record as an airman, Alison worked with Commerce Secretary Harriman when the latter was Ambassador to Moscow. Although Alison has never held a civilian aviation post that could be considered a training ground for his new job, there is some opinion this might be an asset. He could bring a fresh approach and no prejudices to a badly muddled situation.

NO COMFORT FOR CAA—One thing seems apparent. His appointment should bring no end to the pressure on CAA. Administrator T. P. Wright reportedly desires to deal only with Secretary Harriman on aviation matters. At a recent joint CAA-Army-industry conference, Wright asked an industry member to work with the Army representatives as "I don't get along with them very well." Alison, in the regular Army before the war, served as a colonel in the AAF.

BREWSTER'S BOOMERANG—As the Hughes investigation bumbles along like a man finding something he never knew he lost, Washington observers more and more are coming to the belief that if Maine's Owen Brewster, in stirring up the inquiry, thought he was throwing his hat in the ring for the Republican vice-presidential nomination, he actually was throwing a boomerang.

Although Brewster is not a member of the investigating subcommittee, he has turned up as one of the main figures by virtue of Hughes' charges that the Maine Senator used the threat of an investigation to try to force a TWA-Pan American Airways merger. The fact that merger discussions took place at the time Hughes said they did, and that Brewster has been a long-time friend of Pan American, and that Brewster did try to persuade Hughes to embrace the chosen instrument proposal, all add up to a possible uncomfortable future for Brewster's political ambitions.

With the investigation rambling all over the air map, Hughes' troubles with TWA, and vice-versa, are part of the picture. TWA never has received the second $5,000,000 Hughes loan, nor the RFC loan which Hughes said he would attempt to negotiate when he reorganized the company last spring. On top of reports that the Hughes ready cash is running low, comes strong indications of a growing interest in TWA by the duPont family. This interest lends further significance to the moving of TWA New York and Washington offices to Wilmington scheduled for early fall.

SECRET AS A PARTY LINE—Further light has been shed on the manner in which the investigation is being conducted, leaving little doubt as to the motives which prompted it. Elliott Roosevelt, star of the show before Hughes appeared on the scene, asked who had released to the newspapers the itemized account of entertainment expenses of Hughes press agent John W. Meyer, which were given to the subcommittee in "secret" session. Chairman Homer Ferguson said "I haven't any idea." Actually, the list of expenses was mimeographed and handed to press representatives by committee clerks.

CHANGE IN SAFETY—While the Alison appointment and the Hughes investigation vied for attention, the Presidential Air Safety Board was slipping out of the limelight. The change that characterized other aviation developments has been manifest here, too. After a hot start, the Board has cooled off. Some close to the scene say it has bogged down. CAB Chairman James M. Landis insisted the board remain at work all summer, but slow recent progress may be due to his preocupation with other duties.

AMPHIBIOUS OPERATION—The state of change in the armed services following the merger was to be expected, but not the extent to which it has gone. The Navy is not voluble, and a trifle chagrined about it, but carrier pilots have resigned their Navy commissions to accept commissions in the new, autonomous U. S. Air Force. One was an Annapolis graduate and a lieutenant commander. He is now a lieutenant colonel in USAF. Air Forces reports it has processed several pilots who resigned Navy commissions and accepted commissions in the Air Force Reserve. A further indignity to the Navy point of view is that Joe Foss, Congressional Medal of Honor winner and former Marine pilot, is now Commander of the South Dakota Air National Guard, part of the USAF.

The transfer from the sea-borne to the air-borne air force is just a trickle, but it may grow.

NEWS DIGEST

DOMESTIC

Boeing B-29 "Pacusan Dreamboat" broke two closed-course distance records: 6,213 miles over a Patterson Field-Benson, Ariz. course averaging 277 mph. and 8,855 miles over a Patterson Field-Andrews Field, Md.-Tucson, Ariz. Triangular course averaging 227 mph. Lt. Col. Olbert F. Lassiter, AAF Strategic Air Command, flew both missions.

Frank H. Russell, organizer of the Manufacturers Aircraft Association in 1917, died at Newtown, Pa. He organized the original Wright Company in 1909, served as president of Burgess Aeroplane Co. In 1911, vice president and director of Curtiss Aeroplane and Motor Co. and in the same capacity at the Edward G. Budd Mfg. Co.

CAA Administrator T. P. Wright signed the revised Federal-aid airport program for the construction or improvement of 908 airports at a cost to the government of $66,569,590 with local or state sponsors providing an additional $70,235,095.

Air Force Association will publish Air Force Magazine, produced during the past year by Phillip Andrews Publishing Co.

Dr. A. C. Krueger has joined the staff of Airborne Instruments Laboratory, Mineola, New York as supervising engineer, antenna design section. He was formerly with the Manhattan Project and Republic Aviation Corp.

FINANCIAL

Mid-Continent Airlines reports net profit of $6,914 during June against $34,853 profit the same month a year ago.

Minneapolis-Honeywell Regulator Co. had a net income, after provision for taxes, of $3,302,343 for the first six months of 1947. This is equivalent, after preferred dividends, to $2.51 per share on 1,243,800 shares of common stock outstanding. It compares with net income for the corresponding 1946 period of $1,630,666 or $1.18 per share.

AVCO Manufacturing Corp. reports net income for the six months ended May 31, 1947, after taxes, totaled $3,175,339 equal after preferred dividends to 44 cents per share on 6,613,424 common shares outstanding. Net sales for the period were $50,747,235.

FOREIGN

Bilateral Air transport agreement between India and France has been signed at New Delhi.

Air France plans to reduce its trans-Atlantic air cargo rates 34 percent on shipments over 100 lb. effective Aug. 24.

Ministry of Civil Aviation announces that BOAC has acquired a second hand Lockheed Constellation for reconditioning for use on trans-Atlantic routes.

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INCORPORATING AVIATION AND AVIATION NEWS

Hughes Levels New Charges In Pan American-TWA Feud

Claims Brewster used Senate probe threat to force airline merger; reveals War Department threat to turn TWA Stratoliners over to PAA.

The long standing TWA-Pan American Airways feud over international air routes was aired again last week as Howard Hughes, TWA majority stockholder, blasted Senator Owen Brewster (R., Maine) with new charges linking the chairman of the Senate War Investigating Committee with Pan American pressure to keep TWA out of international operations. The Senate committee is currently probing Hughes wartime contracts for the XF-11 photo plane and the HK-1 200 ton flying boat.

Hughes charges were made in a series of Los Angeles press conferences and open letters to Brewster published in the Los Angeles Examiner after that paper offered Hughes its front page for six days to air his grievances.

▶ **Conferences Revealed**—Hughes revealed that he had conferred with Juan Trippe, Pan American president, last winter regarding merger of TWA and PAA and that he had finally rejected the merger proposal after considering it for 30 days, because "the deal would have not been equitable for other TWA stockholders."

AVIATION NEWS reported on March 3 that discussions were under way between Howard Hughes and Pan American officials on possibilities of merging the two airlines to give Pan American its long sought domestic routes and solve TWA's financial problems.

▶ **Collings Denial**—Hughes would neither confirm nor deny the story but Sam Pryor, Pan American vice president and former Republican national committeeman from Connecticut, denied the conferences. John Collings, acting executive vice president of TWA, issued a statement to TWA employes that "any reports of a merger of TWA and Pan American Airways are erroneous and irresponsible and without authentic foundation."

Hughes also claimed that Brewster made an "abortive attempt" to "intimidate and coerce me" (Hughes) into merging TWA with Pan American Airways by offering to call off his investigation of the Hughes Aircraft Co.'s wartime contracts if the merger were accomplished. This attempt, Hughes charged, was made at luncheon in Brewster's Mayflower Hotel suite during the week of Feb. 10.

▶ **Aviation News Report**—AVIATION NEWS reported in its Feb. 24 issue that:

"The leading proponent of the community airline on Capitol Hill is conducting a one-man missionary campaign on Howard Hughes. Senator Brewster and the West Coast aviation executive have spent many hours together recently, many of them traveling. Hughes is said to be "leaning" toward the community company idea. And other TWA executives wonder whether it is because of the threat of a full fledged quiz into the Hughes-Kaiser cargo plane deal by Brewster's War Investigating Committee."

"Brewster was perfectly frank," Hughes declared. "He laid his cards on the table.

"Under the circumstances and since the threat of investigation was obviously created in the first place as a blackmail weapon to maneuver me into the merger with Pan American airways I did not consider that giving in to their demands would necessarily be dishonest on my part . . .

"Since I felt the birth of the investigation was illegitimate, I did not consider that its elimination would be a crime . . . I never did reach a decision on the morals, because, at the end of our negotiations the merger deal Juan Trippe offered was not one I considered equitable from the standpoint of other stockholders in my company, TWA."

▶ **Many Pleasant Hours**—Hughes also charged that Brewster accepted free transportation and extensive entertainment from Pan American. He alleged that Brewster spent "pleasant weekends" at the home of Sam Pryor at Hope Sound, Fla. and "many, many pleasant hours" being entertained in Washington by Pryor, Juan Trippe and Bill McEvoy, PAA public relations executive. Brewster denied any connection with Pan American.

The Brewster investigation really began, Hughes charged, when TWA challenged Pan American on the North Atlantic. When it happened, Jack Frye, then TWA president, who later resigned over policy differences with Hughes, told him:

"Howard, you are going to learn that Pan American Airways has the biggest, most complex and strongest political machine that has ever hit Washington. Juan Trippe feels you have moved in on his territory, which he considers to the entire world outside the U. S., and he is going to make your life miserable. You have no idea the lengths to which these people will go."

"Juan Trippe and Brewster made it very clear to me that they only needed TWA in order to put their community company airline bill through Congress and make it a law," Hughes continued. "They could shove it down the throats of the other overseas airlines if they could just get TWA on their team. Then Juan Trippe, who already has the biggest airline in the world, would wind up with a complete monopoly, automatically and quite legally, putting all the smaller airlines out of business and taking over their routes and airplanes."

▶ **Stratoliner Deal**—Hughes also charged that during the war the War Department attempted to take TWA's five Boeing Stratoliners away from the company and turn them over to Pan American to fly the Atlantic.

Brewster's presence on the Senate Interstate and Foreign Commerce Committee, which passes on aviation matters, is considered unusual because of the custom of not having two senators from the same state on the same committee. Senator Wallace White, also of Maine, is committee chairman. Brewster has been concerned with TWA's financial affairs since last January. As head of the aviation subcommittee he began an investigation into airline finances at which he took testimony from CAB Chairman Landis in executive session on TWA's financial condition. This investigation was shelved in favor of a probe of airline safety after a series of fatal airline accidents last winter.

Both Brewster and Hughes have asked the Justice Department to investigate the Hughes charges. Brewster has offered to take the stand as a private citizen before the Senate War Investigating Committee to answer questions on Hughes' allegations. Brewster introduced legislation calling for the community airline in the last session of Congress but it never was reported out of the Senate Interstate and Foreign Commerce Committee. Similar bills failed of passage three times previously in Congress.

Elliott Roosevelt Assails Materiel Command for "Failures"

Wartime photo-reconnaissance planes were easy prey for German fighters, says President's son; Arnold defends XF-11 deal.

The Senate's War Investigating Committee abruptly dropped consideration of the $18,000,000 Kaiser-Hughes 200-ton flying boat project last week to probe the XF-11 reconnaissance plane project of Howard Hughes.

Circumstantial evidence stacked up by the Senate group, aimed at indicating that the political influence of Elliott Roosevelt, inspired by lavish entertaining by John Meyer, Hughes public relations man, resulted in an expensive misadventure into wooden reconnaissance plane production, was countered with blunt charges by Roosevelt of collusion between the Air Materiel Command and its wartime chief, Maj. Gen. Oliver Echols, and the established aircraft industry to freeze out independent aircraft manufacturers.

▶ **Scores P-38**—At the request of AAF's commanding general, Gen. H. H. Arnold, Roosevelt returned from the European Theater in August, 1943, to tour the U. S. aircraft plants and ascertain the type of reconnaissance plane which should be put into production. The Lockheed P-38 planes being used by U. S. Forces were being "shot down like ducks by the Germans and even had trouble evading Italians," Roosevelt reported. He cited one two-and-a-half-month period in which his squadron of 92 planes was reduced to one plane. Plywood Mosquitos being used by the British "were doing a wonderful job," he said, "in spite of the fact the Materiel Command said wooden planes were no good."

Roosevelt's report of September, 1943, overriding the objections of the Air Materiel Command and AAF's flat ban on wooden planes, resulted in the awarding of a $50 million contract to Hughes for 101 of the Duramold F-11 reconnaissance craft.

▶ **AAF Feared Politics**—Chief of Air Staff, Lt. Gen. Barney Giles, and Echols, then assistant chief of air staff, had turned down the Hughes plane with an emphatic and final "no" only one week previously and protested the letting of the contract—ordered by Arnold. A month after the contract was let, Echols' assistant, Maj. Gen. Charles E. Branshaw, warned that "It is concluded that in view of the amount of money involved and many uncertainties connected with it that this project will probably at a later date draw Congressional attention and possibly public criticism upon the AAF."

Insinuating collusion with established aircraft manufacturers, Roosevelt pinned blame for failure of the Hughes project on the Air Materiel Command. AMC refused to permit Hughes to go ahead with production of his original prototype with the modifications proposed by him, Roosevelt said, and forced major design changes causing, at one time, eleven months delay in negotiations. AMC, he insinuatingly observed, "was extremely interested in having war contracts performed by those already in the field." Turning to Echols, its former chief, he added: "Who does he work for now? The Association of American Aircraft Manufacturers." (Echols is AIA president).

▶ **Flags Materiel Command**—Roosevelt testified that the Materiel Command had a personal objection to Hughes because he was using manpower in his plant that they thought should go to other companies. When asked if he knew that officers down the line refused to approve the XF-11 without direction of the Secretary of War, Roosevelt replied:

"This is indicative of the spirit in which the Materiel Command approached the entire problem of procurement in all theaters. I criticize General Echols' position in the first place that he should try to protect himself so much on the delay in the photo plane."

▶ **"Miserable Failure"**—Roosevelt suggested that the Committee question Echols "as to whether his judgment might not have been swayed by the fact that he is now working for these war contractors who did not want to see criticism of them spread on the record after the war." He charged that the Materiel Command "failed miserably" as far as the European and North African Theaters were concerned in "getting us the equipment and supplies we needed." He said that in many instances it was necessary to set up conversion depots overseas to make equipment usable after it had been received from the Materiel Command.

Roosevelt said he was requested by Robert Lovett, then Assistant Secretary of War for Air and General Arnold to "see if I couldn't find a new aircraft manufacturer because the old ones were already overburdened."

In a press conference preceding his testimony, Roosevelt charged that the true story of U. S. air reconnaissance in the war would never be told the public because "too many big shots are trying to cover up their record." He said there were "too many favored manufacturers whose production breakdowns have to be covered up."

▶ **Arnold Defends XF-11**—Arnold joined in the defense of the Hughes project, stating it "was the best we could get at the time. . . . Hughes' was the only plane that had prospects of equalling the Mosquito."

The Hughes contract was scaled down to three planes—one for static testing and two flyable models. The Government has accepted the static model, and in January of this year "accepted" the flyable model in which Hughes crashed last summer. Government payments to Hughes, which will ultimately total $13 million, plus $8 million for termination settlement, amount to $8,557,568 to date. Since AAF insured its own planes during the war, it was obliged to "accept" and pay for the crashed model.

▶ **Methods Ineffective**—The Committee's attempts to develop circumstantial evidence that the late President Roosevelt had a hand in the Hughes project were ineffective. Elliott Roosevelt denied having taken the matter up with his father. The spotlight was turned on a memo written by former RFC Chairman Jesse Jones, a close friend of Hughes, to the late President in June, 1942 highly praising the Hughes plane, but there was no evidence that the President did any more than refer the memo to Arnold with a note, reading: "What is there in this?"

The Senate group, headed by Sen. Homer Ferguson (R., Mich.), concentrated on gleaning details and sidelights from the expense accounts of publicity man Meyer, showing expenditures totaling $5,083 on Elliott Roosevelt between September, 1943, and November, 1945—or only a small portion of Meyer's total expenditures of $169,661 for the period. It was developed that many expenditures listed for Roosevelt were for parties at which he was only one of ten or twenty guests.

▶ **Lists Companies**—Roosevelt pointed out that he had also been entertained in fine style during the war by "Douglas, Lockheed, Fairchild, Curtiss Wright, Girdler, General Electric, Ford, Chrysler, Pan American" and a long list of other firms.

The switch in hearing subject matter occurred last week after a series of witnesses testified on the $18 million contract awarded for the flying boat, but minus testimony by the two key defense witnesses for the project: Donald Nelson, former WPB chairman and Admiral William Leahy, chief of staff to the President.

In September, 1942, one week after the Joint Chiefs of Staff had officially rejected the flying boat project, Leahy and Nelson, following a White House conference with Henry J. Kaiser and his assistant, Chad Calhoun, gave it the green light. At the behest of Jones, the contract for three planes let the following month delegated engineering development to Hughes.

▶ **Flying Boat Facts**—Other facts developed on the flying boat project:

• **In February, 1944**, Nelson cancelled the project on which $13 million had then been expended. It was estimated it would take from $5 to $6 million additional to complete one plane. Jones interceded with the late President Roosevelt. A Jones memo to Nelson informing that the President believed that the aeronautical data to be obtained from the giant ship warranted its completion resulted in the letting of a new contract in March, 1944.

• **Under The Terms** of the contract, negotiated by Jones, the Government would not be able to take over the plane—now awaiting to make its first test flight in Long Beach, Cal.—for approximately four years. Hughes is authorized to keep the plane for a rental—amounting to approximately $500,000 annually—to be charged against his investment in the project, up to $2,000,000. Hughes reports a private investment of $7,000,000 in the project.

• **Total Government Outlay** for the plane will amount to $21,115,970. In addition to the $18 million for the ship, the Government is committed to furnish $1 million for testing, $500,000 for moving the plane from the Culver City plant to Long Beach, and $1,615,000 for engines and propellers.

The parade of witnesses on the Kaiser-Hughes undertaking included:

• **Three CAA Officials**—Deputy Administrator Charles Stanton, A. A. Vollmecke, and W. A. Klickoff—pointed to CAA progress reports at the Hughes plant picturing wastage of materials, improper tooling and lax conditions.

• **H. Robert Edwards**, Regional DPC supervising engineer, portrayed the plant as "sort of a country club" where employes "quarreled constantly, costs spiraled unheeded, and nobody was boss."

• **Edward Bern**, former general manager of Hughes Aircraft, reported that inter-company politics, hamstringing work, caused him to resign.

AAF Blames Hughes

An Army Air Force accident investigation board ruled that the crash of the Hughes XF-11 at Los Angeles July 7, 1946 "was avoidable after propeller trouble was experienced," and charged "poor coordination by the principals—Hughes Aircraft Company employees, Air Materiel Command and Howard R. Hughes."

Referring to the test flight of the XF-11 when Hughes as pilot almost lost his life in a forced landing that completely wrecked the experimental photo reconnaissance plane, the board pointed out that pilot error constituted the main cause of the crash. Five main charges were leveled at Hughes:

• **He did not use** the specially provided radio frequencies and facilities.
• **He was not** sufficiently acquainted with emergency procedure for the propeller.
• **He immediately retracted** the landing gear after take-off in direct violation with the flight program which specified that the maneuvers were to be conducted with gear down.
• **He did not** give proper attention to the possibilities of an emergency landing when sufficient altitude and direction control were available.
• **He failed** to analyze or evaluate the possibility of failure in the right hand power sector.

Summing up, the board stated that "several indirect causes contributing to the accident were a result of technique employed by the pilot in operating the aircraft and in following the procedure as outlined in the flight test program."

Failure of a rear propeller, the board claimed, was apparently a secondary factor.

MORE JET POWER

Lockheed P-80Bs lined up prior to delivery to U. S. Air Force. Under new contract, company will furnish 32 additional P-80Bs to Air National Guard, which already has 54 on order.

Personnel Studies Aim At New Warfare

Studies of psychology and psychophysiology of problems involved in civilian defense and resistance against immediate attack from enemy aircraft or long-range guided missiles will be made by a newly-formed Committee on Human Resources formed by the Joint Research and Development Board. Headed by Dr. Donald G. Marquis, chairman of the department of psychology, University of Michigan, the new group includes Maj. Gen. Fred L. Anderson of the Army Air Forces and Rear Admiral J. W. Roper of the Navy Dept.

A major phase of the studies will be methods establishing the qualifications and selection, allocation and utilization of personnel for special military purposes including duty in remote air bases subject to extremes of heat and cold and high altitude bomber and fighter crews. The studies will be under the general supervision of Dr. L. R. Hafsted, newly named JRDB executive secretary.

Air Policy Group Gets Working Orders

Homeless commission receives new ACC statement.

The Presidential Air Policy Commission last week had one of its basic working tools—the revised statement of air policy of the Air Coordinating Committee—but no home. Appointment of John R. Alison as Assistant Secretary of Commerce for Air means the commission will have to give up the office it has occupied while the air post was vacant.

With such basic organizational details as office space, clerical help and appointment of an executive director still to be resolved, the commission has held no formal meeting for about ten days, but is expected to form again next week.

▶ **Policy Approved**—The new statement of air policy of ACC was expected to be made public late last week or sometime this week after receiving formal approval of the President. It is a declaration of principles, sketching merely broad outlines of things that should be done, rather than a detailed list of recommendations. Such a detailed list will be prepared by Stanford University in the form of a revision of the 1945 ACC report.

As far as procurement is concerned, it is expected that ACC's new policy statement will call for minimum annual procurement of 5,000 military planes.

▶ **Solon Board Busy**—The Congressional Air Policy Board likewise is too concerned with initial organizational problems to have taken a bite into its new job. Following the President's signature on House Resolution 3587 establishing the ten-man group, the following were appointed: Sens. Owen Brewster (R., Maine); Albert Hawkes (R., N. J.); Homer Capehart (R., Ind.); Ed Johnson (D., Colo.); Ernest McFarland (D., Ariz.); Reps. Charles Wolverton (R., N. J.); Carl Hinshaw (R., Cal.); Karl Stefan (R., Neb.); Alfred Bullwinkle (D., N. C.); and Paul Kilday (D., Texas). The senators are all members of the aviation subcommittee of the Interstate and Foreign Commerce Committee, while all House members except Stefan were on the subcommittee which investigated air safety.

Some of the members are out of town; others, Brewster for one, are engaged in other Congressional business and there is no indication when the board may settle down to work.

Earling Leaves C&S

Albert J. Earling, vice president and director of Chicago and Southern Air Lines, has resigned. In charge of C&S traffic and sales during the past two years, Earling left to become president of Southwestern Supply Co., distributor of pre-fabricated homes. T. M. Miller, C&S general traffic manager, will take over Earling's airline duties.

John Alison Named To Commerce Post

President Truman has appointed John R. Alison, former AAF colonel and Gainesville, Fla., aviation consultant, to the post of Assistant Secretary of Commerce for Aeronautics, recently vacated by William A. M. Burden.

The appointment is subject to Senate confirmation next January and carries with it direction of the Civil Aeronautics Administration, U. S. Coast and Geodetic Survey and the U. S. Weather Bureau, as well as membership on the Air Coordinating Committee and the National Advisory Committee for Aeronautics.

Alison's wartime record includes command of the 23rd Fighter Group, successors to the original "Flying Tigers", in Maj. Gen. Claire L. Chennault's 14th Air Force in China. Alison joined the AAF in 1936 and went to England in 1941 as RAF advisor on the operation and maintenance of American airplanes. He accompanied Harry Hopkins and Gen. Joseph T. McNarney to Moscow that same year as adviser on American lend-lease aircraft. He remained as air attache to Russia in 1941-42 and later coordinated lend-lease in the Persian Gulf area after U. S. entry into the war.

Alison's wartime decorations include: Distinguished Service Cross, Distinguished Flying Cross, Silver Star, Purple Heart, Legion of Merit, Air Medal and the British Distinguished Service Order. He resigned from the AAF last year to organize an executive air transport service in Florida to provide transportation for industrial companies on a fee basis. He takes office immediately in Washington.

Certification Near For Martin 2-0-2

Glenn L. Martin Co.'s Model 2-0-2 last week was near certification, several months shy of two years from the time construction began on number one airplane.

With the accelerated service test completed, the CAA certification board at midweek was meeting in the Martin plant to iron out the final details of licensing the twin-engine, 40-passenger transport.

In nine days, the 2-0-2 visited 38 cities and covered 16,700 miles in 69 hr., clipping minutes and in some cases hours from the scheduled airline time between points along the route. The 2-0-2 flew from Memphis to El Paso, for example, in 4 hr., 26 min. less than DC-3 time.

The CAA accelerated service test calls for 150 hr. of flying, but credit may be given for other service flights.

Northwest Airlines has been flying a 2-0-2, and Martin has put more than 500 hr. on the two airplanes the company is retaining for its own use.

Martin expects to deliver two certificated 2-0-2s to Northwest this month.

Industry Observer

► **Navy has completed tests of two Grumman F6F Hellcat fighters equipped with .60 cal. machine guns and reports are being studied. Tests proved satisfactory and a quantity of the guns is being procured for further service tests. Decision on replacement of .50's throughout fleet units has not yet been made.**

► Navy has supplied AAF and McDonnell with technical data and operational experience on dirigible-type aircraft mooring hooks, with which the tiny XP-85 is equipped. Wide disparity between XP-85 minimum flying speed and B-36A cruising speed presents a problem to which only piloting technique offers a solution at present. Various combinations of flaps, slots and spoilers are being studied for XP-85 to slow its minimum speed to at least 150 mph. for "coming aboard" the B-36A.

► **Second Martin XP4M-1 is now undergoing flight and ground tests at the Baltimore plant. Total P4M-1 order now stands at 24.**

► Douglas expects to taper off its 10 a month DC-6 production rate this fall as major commitments to domestic carriers are met. Douglas has now built 60 of the big transports or 45 percent of 141 orders now on hand.

► **AAF personnel are still manning three airfields on the wartime top secret Crimson Ferry route through Northern Canada to Greenland. These fields at Chimo in Northern Quebec, Frobisher along the fringe of Baffin Island and Mingan on the Quebec coast have been purchased by the Canadian Government for $30,000,000 and will be manned by RCAF personnel this fall.**

► Glenn L. Martin told the Senate war investigating committee that his company has modified 30 B-29s to carry atomic bombs and that no more had been modified since the end of the war because it was impossible to keep pace with changes in the bomb. He indicated that the B-29 cannot be re-designed or converted to carry newer type atomic bombs, indicating that the B-50 and B-36 will be the atomic bomb carriers of the immediate future.

► **Potentials of the new types of strategic transports are being explored by the Air Transport Command. In recent tests a complete materiel depot was moved from Florida to the Canal Zone by Douglas C-74 and C-54. The C-74 carried 951,405 lb. in 41 trips while it took a C-54 16 trips to carry 104,405 lb. C-74 averaged 29,603 lb. pay load against 6,525 lb. for the C-54.**

► A double-ended aircraft JATO unit, with a center valve which directs the combustion products out of either end, has been patented by Constantin P. Lent, N. Y. engineer. The unit could be used for rapid deceleration of supersonic aircraft for landing and acceleration for takeoff.

► **Navy has developed a Zyglo process, which utilizes ultra-violet "black light" for the inspection of special turbojet alloys, which defy ordinary magnaflux inspection.**

► AAF studies indicate that air transport services now being operated by military agencies in Europe could be handled more economically by commercial contract operations but Air Transport Command is bucking a policy shift on the grounds that higher costs are justified by training military crews for troop carrier operations.

► **Boeing is scheduled to get an AAF contract for 27 more C-97 Stratofreighters making a total of 37 to be manufactured for the AAF. Last model of the initial order of 10 is equipped to handle 134 fully equipped troops.**

► Norwegians are operating an airline service along their northern coast with British Sandringham flying boats equipped with airborne radar.

► **AAF is sponsoring research on high speed bomber armament systems utilizing conventional machine guns and cannon in the belief that these weapons will remain standard even though bomber speeds enter the transonic range.**

► Indication that unusual soundproofing techniques will have to be developed for the after cabins of military or commercial wing-jet aircraft was given recently when the pilot of North American Aviation's B-45 jet bomber entered the tail compartment in flight to adjust flight recording instruments. He reported excessive noise from shock waves of the plane's jet exhaust. In this particular plane it is expected that sealing and pressurization of the tail gunner's compartment, in production units, will provide ample soundproofing. Sound experts generally agree that special soundproofing will be required for any inhabited portion of an airplane structure entering a 90 deg. cone extending behind a jet engine tail pipe.

► **On a showing that runways should not be considered taxable as "industrial" property, Lockheed Air Terminal at Burbank, Cal., won a $218,400 reduction of assessed valuation originally fixed at $882,700. Robert E. Gross, President of Lockheed Aircraft Corp., in seeking the assessment cut, told the county board of supervisors that the reduction was vital to his company to permit the air terminal's continued competition with "tax free" Los Angeles Municipal Airport.**

Convair Price Rise

Consolidated Vultee Aircraft Corp. has increased the price of its Convair Liner (formerly Model 240) effective Sept. 1, from $315,000 to $360,000 due to increased labor and material charges and a shrinking foreign market caused by the dollar shortage.

The new price applies only to domestic orders. The foreign price of about $325,000 probably will go up proportionately. The increase was announced in advance, Sales Vice-president W. A. Blees stated, to give prospective purchasers an opportunity to place their orders at the old price.

First FIDO Planned For Los Angeles Field

Construction of the first U. S. commercial FIDO installation may begin in September at Los Angeles airport. Five major airlines using the terminal tentatively have agreed to amortize over a five year period about 50 percent of installation costs, and to assume operation and maintenance costs during that time.

Engineering plans for the installation, now 80 percent completed, will be ready within 30 days for presentation to Air Transport Association and airline engineers for approval. It is expected that construction bids then will be called for without delay.

► **Cost Rising**—Woodruff De Silva, Los Angeles Airport manager, told AVIATION WEEK that while the FIDO project in original proposal contemplated an installation cost not to exceed $450,000, the final plan may raise the cost to nearly $650,000.

The program now under consideration calls for the city's application to the Federal Government for federal aid funds amounting to approximately 50 percent of total installation cost.

Although this would leave a maximum of more than $300,000 of installation charges to be paid off by airlines during five years, plus operating and maintenance charges, airline spokesmen indicate that it will prove a sound investment.

► **Seek Economy**—Lew Goss, of TWA's staff at Los Angeles, who has been named airline coordinator for the FIDO project, says that economies effected by reducing alternate airport arrivals and departures will more than meet the amortization charges.

One indication of the penalty of alternate airport operations is an airline report that a single bad-weather schedule diversion from Los Angeles Airport to Palm Springs, involving one four-engine airplane, costs $400. Intangible costs include the loss of potential airline business as a result of passenger ill-will generated by broken schedules and the confusion of bus transportation from the alternate airport to the terminal area.

Airlines participating in the Los Angeles FIDO test will be United, American, TWA, Western and Pan American.

New Training Types For Service Schools

The Army and Navy have substantially eliminated the biplane primary trainer from the military pilot training program and will start future students on 600 hp., 6,000 lb. advanced training types in the future. Navy's transition from the N3N and N2S "Yellow Perils" to North American SNJ series has been completed and the Army Air Forces has completed one class and is processing a second making substantial use of North American AT-6 types throughout the course.

Elimination of the light, primary-type trainer and the preliminary dual and solo of the type from the flight syllabus follows lengthy examination of extensive evidence that such flight time not only contributes little to the learning rate but actually creates habits which may later prove dangerous when the neophyte pilot is graduated to heavier, faster combat types.

AAF's March, 1947 primary class used AT-6s extensively, although not completely, in the course and 14 out of 20 students passed, an attrition rate slightly lower than average. Subsequent classes are utilizing the AT-6 an increasing percentage of the total hours with eventual complete conversion planned.

Navy's decision was made on the basis of its March, 1947 class of 100 at Naval Air Training Base, Corpus Christi, Texas. This class was given primary instruction in SNJ types in accordance with a program worked out by Capt. James Thatch and Rear Admiral Clifton A. F. Sprague, Navy Basic Air Training Command. Aircraft procurement problems also were elements in the decision, the Navy having originally planned future pilot training in Fairchild NQ primary and North American SN2J types, both of which have completed flight tests in prototype form and declared approved for procurement. Budget slashes will prevent the production of either of these types and the large quantity of SNJ's now on hand accelerated the decision.

Following graduation from the SNJ-AT-6 primary training stage, students will move directly into obsolescent combat types for advanced training. Navy will use Grumman F6F, Vought F4Z, Grumman TBF (Eastern TBM) and Convair PBY's for advanced and operational training. AAF will move students into North American P-51, Republic P-47, North American B-25, Convair B-24 and Boeing B-17 types for advanced and operational training.

BOEING XL-15's FIRST FLIGHT

With Elton H. Rowley, flight test chief at Boeing's Wichita Div. at controls, radical new liaison craft makes steep climb on initial test flight. Powered by 125-hp. Lycoming, XL-15 is designed to clear 50-ft. obstacle in 600 ft., cruise at 101 mph., and land at 35 mph. First and second X-jobs are due for delivery this month, followed by ten YL-15s on order.

LETTERS

Air France and Sabena Protest

U. S. directors of both lines write that AVIATION WEEK comment libeled them.

To the Editor:

In your issue of July 28, in the section "The Aviation Week," Sabena is the subject of some rather ill-considered and inaccurate remarks. Since these misstatements of fact are detrimental to international aviation as a whole, and not only to Sabena, we feel that this letter should be accorded the courtesy of publication.

Starting with a service between Brussels and Paris, in 1923, Sabena's unduplicated route mileage today totals more than 15,000 miles, and we have flown almost 200,000,000 passenger miles to date. In 1946, alone, we flew 4,574,865 miles and carried 121,178 passengers. If one includes our immedia e predecessor in the Congo (the King Albert Line, organized in 1920) we are among the first three or four airlines in point of operations.

The criticism expressed by "U. S. Airmen" is additionally misleading, in view of the fact that Pan American World Airways is in charge of maintenance and operation of our aircraft in the U. S., while Sabena reciprocates in Belgium.

All of Sabena's equipment on the North Atlantic route is new. Our DC-4s are not converted C-54s, but new Douglas four-engined planes.

All of our flight personnel are internationally trained and have received special training at the Douglas plant at Santa Monica, Cal., the Eastern Air Navigation School, New York, N. Y., and at Pratt & Whitney. This includes six months of study on the Douglas DC-6. Sabena is the first foreign carrier to receive delivery of this new American post-war luxury liner, and is at present demonstrating its first of three ships to all the principal cities on its routes. On board are representatives of two leading press services and one of this country's leading weekly news magazines, as well as Douglas officials.

Douglas Larsen of NEA, one of those aboard, just returned from part of the flight, and a newspaperman who has flown some 200,000 miles reports that, based on his observations, Sabena is operating close to the top of any airline he has ever flown with.

Our operational experience includes flights over every type of terrain and water conditions. Our routes include flights to almost all capitals in Europe, the Belgian Congo, to Egypt and South Africa.

Our advertising in the United States, handled through an American local agency, stresses the points brought up in this letter and "sells" Sabena on the basis of its experience, reputation and equipment. "Old World courtesy" is an added service to passengers, but not the theme or sum total of Sabena's consideration for its passengers.

We regret the need for bringing these facts to your attention, but we are certain that you will want your readers to be properly informed on this matter. We feel also that Sabena is entitled to a proper expression of facts in your news columns, and we will appreciate publication of an early correction of your statements.

FERNAND J. MARTENS
U. S. Manager, Sabena

To the Editor:

I am writing to you to ask for a retraction of your editorial reference to Air France in the July 28 issue of AVIATION WEEK, which is most unfair and certainly not founded on fact.

You report "U. S. airline men say the Scandinavians, Dutch and British, in that order, are doing the best operation and maintenance. The Belgians (Sabena) and French (Air France) are probably the worst." Our Atlantic record certainly does not call for such an appraisal.

Using American aircraft, maintained by Americans, Air France is proud of its trans-Atlantic performance. Our maintenance has been done by TWA and American Airlines, both American companies, and now by Lockheed, manufacturers of the aircraft we are flying in our Atlantic service. I must insist that this fact be published in the same columns in which you published the reference to Air France and Sabena as "probably the worst."

As far as our operations are concerned, may we point out that Air France's record of arrivals and departures is excellent and airport authorities will testify as to the splendid schedule we have maintained. Furthermore, may we point out that Air France's safety record is unmarred by casualties.

We believe that, if you will investigate the facts, you will find that Air France has one of the best, if not the best, operations across the Atlantic. Confidence of the traveling public in Air France's operations, based upon 28 years of over-water flying experience, is reflected in the volume of traffic we have been carrying across the Atlantic. Frederick Graham of the New York Times recently reported in an article on trans-Atlantic traffic that Air France was leading the field in payload. Such leadership must be deserved.

The statement published in AVIATION WEEK is a libel on Air France, the French National Airline, now serving 54 countries on five continents.

HENRI J. LESIEUR
General Manager
North American Region

(*Editor's Note*—AVIATION WEEK hopes to make its own future study of the relative standards of U. S. and foreign owned international airlines.)

AVIATION CALENDAR

Aug. 11—International Air Transport Association, tariffs and schedules subcommittee, Paris.
Aug. 13—CAA-sponsored State Aviation Forum, Nashville, Tenn.
Aug. 16—ISAO communications working committee, Mexico.
Aug. 16-17—Oakland Air Show, 20th anniversary of the Dole flight, sponsored by Junior Chamber of Commerce, Oakland, Cal.
Aug. 18-22—Airport Managers school, Hancock College of Aeronautics, Santa Maria, Calif.
Aug. 19—International Air-Transport Association, financial committees, Paris.
Aug. 21-22—West Coast transportation and maintenance meeting, Society of Automotive Engineers, Biltmore Hotel, Los Angeles.
Aug. 25—International Air Transport Association, financial-accounting and statistical subcommittee, Paris.
Aug. 28—International Air Transport Association, financial-clearing house subcommittee, Paris.
Aug. 30-Sept. 1—National Air Races, Cleveland, Ohio.
Sept. 1-4—Fall meeting American Society of Mechanical Engineers, Salt Lake City.
Sept. 1-10 — International Air Transport Association technical conference, Nice.
Sept. 3—International Air Transport Association, financial committee, Brussels.
Sept. 6—Anglo-American conference, Institute of the Aeronautical Sciences and Royal Aeronautical Society, London.
Sept. 8-12—Second annual conference and exhibit, Instrument Society of America, Hotel Stevens, Chicago.
Sept. 15-17—Air Force Association, first annual convention, Columbus, Ohio.
Sept. 16—ICAO rules of the air and air traffic control meeting, Montreal.
Sept. 16—International Air Transport Association, technical committee, Nice.
Sept. 16-18—Second Regional CAA conference, Atlanta.
Sept. 17 — ICAO meteorological division, Montreal.
Sept. 23—ICAO aerodromes, air routes and ground aids division, Montreal.
Oct. 2-4—Autumn aeronautics meeting, Society of Automotive Engineers, Biltmore Hotel, Los Angeles.
Oct. 3-4—Arizona State Aviation Conference, Douglas, Ariz.
Oct. 6—International Air Transport Association, executive committee, Rio De Janeiro.
Oct. 7—International Air Transport Association, traffic committee, Rio De Janeiro.
Oct. 14—International Air Transport Association, third annual general meeting, Petropolis.
Oct. 15-18—Montreal Board of Trade, second annual air conference, Montreal.
Oct. 20—International Air Transport Association, executive committee, Petropolis.
Oct. 20—Air Industries and Transport Association of Canada, annual meeting, Gray Rocks Inn, St. Jovite, Quebec.
Oct. 20—ICAO meeting on commercial rights. Petropolis.

FINANCIAL

Narrowing Profit Margins Intensify Mail Pay Drive

Airline applicants for increased compensation include companies in sound financial condition.

The drive for higher mail pay is on in no uncertain manner. Increased mail compensation now is being sought by a different type of applicant—the financially sound and more profitable carriers. Late last year the parade for relief started with the ailing airlines seeking to bolster their diminishing resources with higher mail pay. For the most part, this group consisted of companies in the subsidized category or recently removed from that class. In recent weeks, however, National, United and Eastern have petitioned the Civil Aeronautics Board for higher mail pay. Yet, none of these companies is in any immediate danger of financial difficulties despite current adverse operating results. Moreover, they are on a "compensatory service" rate basis and are among the least dependent upon mail revenue support.

About a year ago, in an article appearing in the Analysts Journal published by the New York Society of Security Analysts, this writer concluded: "...within 12 to 18 months, many, if not all, of the domestic airlines may petition the CAB for relief and seek higher mail compensation."

► **Squeeze Discernible**—This belief was predicated on the impending squeeze on profit margins of the various carriers then becoming discernible but not yet recognized by the industry and investment fraternity. It was pointed out that operating expenses have been steadily mounting while the revenue rate structure had been declining. This trend of narrowing profit margins continued with increasing intensity throughout the second half of 1946 and the early part of this year. The result was near-disastrous for many of the weaker situated carriers and a severe jolt to the well-entrenched lines. A series of unfortunate accidents and bad flying weather compounded the difficulties and accelerated the trend.

When it was seen that earnings were turning into heavy deficits, weakened carriers petitioned the CAB for emergency relief, asking higher mail pay. All such pleas were presented on a "need" basis and sought refuge in the protection believed present in the Civil Aeronautics Act. The Board came to the rescue with increased mail compensation based on a new wrinkle in computing mail pay. Outwardly the basis for determining mail pay has not been changed. Yet a number of airlines are finding their mail pay increased as much as ten-fold by getting paid for mail they don't carry. This is done by payment on the basis of "minimum capacity factor." This "factor" becomes a guarantee of weight and is used in figuring the carrier's mail pay regardless of the actual mail carried. This is illustrated by the PCA decision applying this new formula. For the period Jan. 14, 1947 to March 31, 1947, PCA will receive payment for 700 pounds of mail per mile at the rate of 60 cents a ton mile. Actually, its 1946 mail loads averaged 74 lb. per plane mile. Accordingly, solely on a tonnage basis, with a 700-lb. minimum capacity factor, PCA will receive a return of about $5.75 per ton mile for the mail actually carried compared to the 60 cents per ton mile previously received. A sliding scale has been developed so that the amount will taper off over the next two years. For example, PCA's minimum capacity factor is reduced to 600 lb. for the three months ended June 30, 1947, to 550 lb. for the subsequent nine months ended March 31, 1948, declining gradually to only 250 lb. beginning Oct. 1, 1948.

► **New Element**—This rate method was introduced for PCA, Chicago & Southern and Western. Colonial and Northeast never left the subsidy category and were recently given increased mail pay on the old plane mile basis. The table shows the recent mail rate increases granted and those pending and their relative significance.

The character of Eastern's mail pay increase request, along with that of United and National, differs materially from the emergency applications filed by the other lines. Eastern, for example, has no intention of seeking a return to the "need" category. It merely seeks to bring mail pay into better balance with present costs and traffic levels while remaining on a compensatory service but nonsubsidy rate. Both Eastern and United are receiving currently a rate of 45 cents a ton mile and conceivably would be satisfied at present with a 60 cents per ton mile rate. National is seeking a departure from this pattern by requesting compensation with a minimum capacity factor.

► **Eastern Profit**—It is interesting to note that Eastern would have been capable of operating at a profit during 1946 without any mail revenues whatsoever. Its total mail compensation amounted to $1,409,231 out of net income of $4,505,000. However, the 45 cents a ton mile rate is clearly out of line with passenger fares of about 5 cents a mile which would bring the comparable mail rate to around 50 cents a ton mile.

It is also probable that Eastern along with United and National recognize the importance of filing as soon as possible for higher mail pay, as in the past CAB awards have been declared retroactive from the date of filing. Thus far American, Delta and Northwest are the only carriers who have refrained from filing for higher mail compensation.

In any event, the current mail pay structure has developed wide disparities between various airlines. For example, American competes with Colonial for non-mail revenue between a number of points, yet the rate of mail payments for Colonial is about 16 times that of American. Similar disparities exist elsewhere and point to the constant "flexibility" in Board policy in establishing rates for the separate airlines as circumstances may have dictated.—**Selig Altschul**

Recent Mail Rate Increases Granted and Pending

		§Current Return per Ton Mile	Previous Return per Ton Mile
Temporary Rates Granted			
Chicago & Southern (Domestic Only)	$0.60 per ton mile with payment for 700 pounds minimum capacity factor	$4.90	$0.60
Colonial	$0.20 per plane mile	7.23	1.50
Northeast	$0.25 per plane mile	15.50	6.85
PCA	$0.60 per ton mile with payment for 700 pounds minimum capacity factor	5.75	0.60
Western	$0.60 per ton mile with payment for 700 pounds minimum capacity factor	2.74	0.60
Pending Rate Applications			
Braniff	$0.30 per plane mile	3.31	0.60
TWA	$0.30 per plane mile	1.88	0.45
Continental	$0.30 per plane mile	9.97	3.73
National	Minimum capacity factor	§§	0.60
United	Exact amount not defined	§§	0.45
Eastern	Minimum rate requested	0.60	0.45

§ All projections based on 1946 results
§§ Amount not specified

Douglas DC-9 Proposed As Replacement for DC-3

Specifications of new transport circulated to airlines for comment; will carry 28 passengers, cruise at 242 mph.

Douglas Aircraft Co. has finally disclosed its own plans for a proposed replacement of its famous DC-3—a market that until now has been the battleground of Consolidated Vultee and Glenn L. Martin.

As yet the Douglas DC-9 is only a proposal. Drawings and specifications are being circulated to airlines to test the market. The company has no mock-up or prototype. It will not concede it will build the DC-9. But observers familiar with the company that for years was the greatest supplier of transport planes note that the new design bears a DC designation—generally the tip-off that the design is more than a study.

► **10,000 lb. Load**—With its 10,000 lb. plus useful load, accomodations for 28 passengers, and cruise speed of about 242 mph., the DC-9 seems more nearly competitive with the forthcoming 20-passenger Beech Model 34 Feederliner than it does with the 40-passenger, faster Convair Liner, Martin 2-0-2 or 3-0-3. In effect, the DC-9 is competitive with the Convair and Martin planes not on a performance, but on what might be termed a philosophical basis.

Douglas apparently believes that the airlines need, as a DC-3 replacement, not a 40-passenger, 280-300 mph. transport, but a smaller, slower plane with lower stalling speed (75 mph. for the DC-9) and shorter take off and landing runs. It is on that concept, plus the not small value of the Douglas name, that the company seems to be pinning its hopes.

Main factor being considered by both airline and manufacturing representatives is the time element. If the DC-9 is built, production probably is at least two years away. The Martin and Convair airplanes should be in airline use by the first of the year. The question seems to be how long can an airline wait to replace DC-3s on which it may be losing money. It is too early yet to gauge airline reaction to the DC-9 proposal, although United, for one, has indicated more than passing interest.

► **Delay Puzzling**—The long delay in the company's announcement of its project plane is the more puzzling as the plans actually date from about the same time as the DC-8, the pusher Mixmaster which was built only in a bomber version for AAF. Anticipating possible adverse reaction to the unorthodox features of the DC-8, Douglas began studying a more conventional design as an alternative. When the airline reception to the Mixmaster design proved to be cool, the DC-9 began shaping up.

The new plane in appearance is as conventional as the DC-8 was unconventional (see sketch) except for the high aspect ratio wing.

It has tricycle landing gear with single nose wheel and dual main wheels. Passenger door is on the left side at the rear, although an alternative arrangement would give a door opening under the tail. Cabin can be pressurized or not. Pressurization would add about $15,000 or $20,000 to the estimated fixed $280,000 price.

Comparison of the proposed DC-9 and the DC-3 follows:

	DC-9	DC-3
Span	101 ft.	95 ft.
Length	75 ft	64 ft.
Gross Weight	30,000 lb.	25,200 lb.
Useful Load	10,406 lb.	8,600 lb.
Wing Area	850 sq.ft.	987 sq.ft.
Wing Loading	35 lb./sq.ft.	25 lb./sq.ft.
Range	2,125 mi.	2,400 mi.
Economical Cruise	242 mph	180 mph.
Top Speed	257 mph	210 mph.

The DC-9 would be powered by Wright Cyclone 1820 engines rated at 1,475 hp. dry for take off, and 1,525 hp. with water. The cruise speed of 242 mph. could be achieved on 765 hp. per engine. The airplane could also use the new Pratt & Whitney 2180 engine rated at 1,650 hp. for take off. Estimated take off distance at gross weight is 3,640 ft., and landing distance, 3,800 ft.

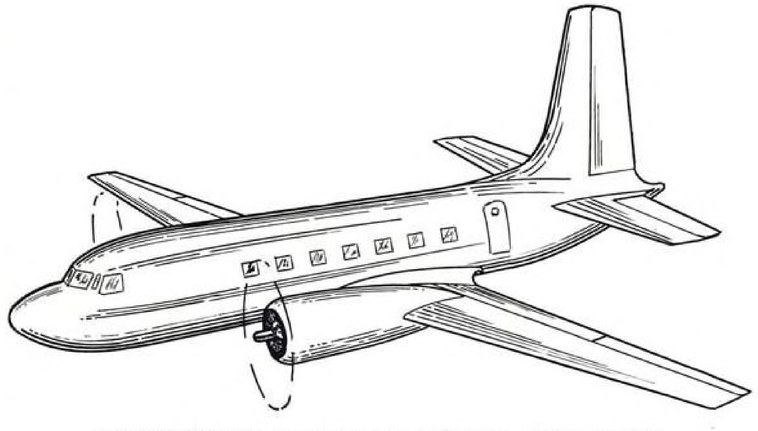
While the proposal for the DC-9 represents Douglas thinking on a DC-3 replacement, some indication of the company's thoughts on what will follow its DC-6 are seen in a paper prepared for delivery at last week's Los Angeles meeting of the Institute of the Aeronautical Sciences by R. S. Shevell, Douglas aerodynamicist. In this Shevell outlines a 40-passenger, 12,000 lb. payload transport powered by four turbo jet engines each of 4,960 lb. static thrust.

► **Proposed Jet**—Just as in the case of the DC-9, there is no evidence that the company at this time contemplates manufacture of the jet transport. If the transport industry could provide a market sufficient to pay engineering and tooling costs, and if no better design were developed subsequently, the Douglas jet transport probably would embrace the following:

- Highly streamlined fuselage and sharp sweep-back of wing and tail, the wing sweep reaching a maximum of 37½ degrees.
- Cruising speed of 490 mph. at 35,000-40,000 ft. with top speed above 500 mph.
- Economical range of 750 mi.

Shevell told AVIATION WEEK that "the design studies were prepared for analysis of the characteristics of a jet transport that could be built with engineering knowledge available at the time."

Shevell emphasized that the jet transport does not represent any Douglas proposal for a new transport now contemplated for production. The status of the DC-9 is only slightly firmer. However, with the Air Forces apparently back in the market transports, it could be that Douglas—as do other manufacturers—hopes that government money will be forthcoming to meet development costs of airplanes that may later be adaptable for the commercial market.



ARTIST'S SKETCH, based on company drawings, of Douglas DC-9.

CAA Tests Slated For Convair Liner

Official CAA flight tests of the Consolidated Vultee "Convair Liner"—new designation for the Model 240—were scheduled to begin last week, following a month of CAA ground inspections. Robert Gross, CAA Sixth Region engineering pilot, tentatively has been named to do the certification flights, and James Ross has drawn the flight engineer assignment.

An earlier report that the new Convair transport had already begun tests stemmed from the fact that the company several weeks ago put the plane through CAA tests for its own information.

Modifications to the jet exhaust cooling system include a shortening of the exhaust pipe, which now terminates about two feet ahead of the wing trailing edge. The earlier installation carried the pipes completely to the trailing edge. Stainless steel troughs protect the trailing edge area that might otherwise be affected by the hot exhaust. Convair claims that this system, in addition to providing engine cooling at rest and in long climbs, produces a thrust of 160 lb. per engine at 2400 hp.

Convair has developed magnesium control surfaces, ordered by Pan American for its fleet, which save about 50 lb. per airplane. A static load destruction test conducted recently made on an experimental magnesium rudder showed the member to possess a strength slightly exceeding that of the comparable dural rudder.

CW, Union Sign New Wage Pact

A strike at the Columbus, Ohio, plant of the Curtiss-Wright Corp. was averted when an agreement was reached between management and the UAW-CIO after a 12-hr. session.

A spokesman for the company said the new wage agreement calls for wage increases of 10c. an hour and pay for six holidays for 1,800 employes of the airplane plant. Voluntary checkoff of dues was also included in the agreement.

The company said the raises will add $450,000 a year to the current payroll. A month previously the plant police received 10c. an hour through an agreement and the office and salaried employees got voluntary raises. This, together with the latest wage agreement, adds $900,000 a year to the payroll. The contract is for two yr. with a wage reopener after one year. The wages are retroactive to June 21 of this year.

There is a no-strike clause and a provision that in the event of a wildcat strike the union cannot be sued under the Taft-Hartley measure.

A week previous to the agreement the union authorized the bargaining committee to call a strike if negotiations bogged down. The union terminated its contract as of Aug. 4, but negotiations resumed and an agreement was finally reached.

The 1,800 workers affected are production, maintenance and cafeteria workers. There are 50 in the latter category. They received an additional 5c. an hour.

Goodyear Wins Suit

The Goodyear Aircraft Corp. of Akron has won a $306,000 judgment involving unemployment compensation contributions.

Judge Charles A. Leach of Common Pleas Court ordered the Ohio Bureau of Unemployment Compensation either to refund that amount to Goodyear or make restitution in future jobless contributions.

The BUC ruled that Goodyear should contribute 2.7 percent of its payroll for workers employed in two war plants in 1942 and 1943. Goodyear held it was entitled to a lower rate of 1.5 percent as provided under the merit rating system since it was an old and established firm and not a new factory.

Briefing Production News

► **North American Aviation,** Inc. has completed 25 of an ordered 250 P-82 Twin Mustangs. Three Navy FJ-1 fighters have been built and are undergoing tests. Two B-45 jet bombers are being assembled at the main plant on Los Angeles Airport, while a production line for this plane is being set up in an unused Douglas building at Long Beach airport.

► **Chance Vought Div.** of United Aircraft Corp. has completed its last F4U-4 and the first production F4U-5 was due to roll off the line earlier this month.

► **McDonnell Aircraft Corp.** has granted wage increases totaling more than $800,000 annually to 3,300 employees, members of the International Association of Machinists. Most employees got 12c. per-hour raises, with skilled tool and die makers receiving 17c.

► **Bell Aircraft Corp.** has delivered two Model 47B3 helicopters to British European Airways, and has shipped all but two of the eleven rotorcraft ordered by Trabajos Aereos Y Representaciones of Argentina.

► **Lockheed Aircraft Corp.**'s recent $2,500,000 order for 32 P-80B jet fighters for the Air National Guard, brings to 1,099 the number of As and Bs on order. Company is tapering off on employment due to approaching completion of Constellations on order. Current payroll of about 14,000 may drop to 13,000 or less by end of year.

► **Southwest Airmotive Co.,** Dallas, has acquired two additional large hangars at Love Field to more than double the size of its previous maintenance and storage facilities.

► **Boeing Aircraft Co.** has signed a contract providing for complete servicing, maintenance and modification of Alaska Airlines' Seattle-Anchorage fleet of five DC-4s and seven DC-3s. Work will be done by the year-old Boeing Seattle Service Center.

► **Consolidated Vultee Aircraft Corp.** has in the jigs an executive version of the Convair Liner, being constructed for an unnamed Mexico City customer. Company is canvassing the executive market.

► **Universal Aviation Co.** has been formed in Tulsa, with shops at the municipal airport, for aircraft modification. It has converted a Douglas A-26B, and has contracts for a B-17, 10 A-20s, seven B-25s and four C-54s. Company is headed by Donald H. Roberts, S. L. Huntington and Robert Dieter.

► **Northwest Industries Ltd.,** Edmonton, Alberta, has new contracts for airplane overhaul, repair and maintenance with the Canadian government and private operators which will boost employment to between 400 and 500.

► **O'Neil-Irwin Manufacturing Co.,** Lake City, Minn., has issued a 40 page booklet illustrating and explaining its line of DI-ACRO die-less precision duplicating machines. It is available on request from the manufacturer.

► **Gilfillan Bros.,** Los Angeles manufacturer of Ground Controlled Approach landing equipment, on Sept. 1 will open a GCA training school for the U. S. Air Force at March Field, Calif. First students will be 240 from USAAF and 12 from the Royal Canadian Air Force.

GE Equipping Six Transports

Contracts totaling $2,780,000 for aircraft equipment in six commercial transport planes have been received by General Electric Co.

Equipment contracts now on order include: $500,000 for the Douglas DC-6, $1,500,000 for the Boeing Stratocruiser, $310,000 for the Boeing Stratofreighter, $300,000 for the Convair liner, $100,000 for the Lockheed Constellation and $70,000 for the Lockhead XR60, military version of the Constitution.

This brings to a total of nearly 35,000,000 GE's equipment contracts, including $30,000,000 for Convair B-36a and $2,000,000 for Northrop YB-35 remote control sighting and turret armament, as well as turbosupercharger and alternating-current electrical equipment.

NEW AIRCRAFT

Fokker Completing New Trainer

Two or three-place Instructor for primary work nears flight test stage in fast-reviving Dutch industry. Company reports orders for 100.

Specifications and data include:

	Normal	Non-aerobatic
Span	26 ft. 6 in.	
Length	36 ft. 11 in.	
Height	7 ft.	
Wing area	194 sq. ft.	
Gross wt.	2,370 lb.	2,535 lb.
Useful load (2 with parachutes, or 3 without chutes)	395 lb.	530 lb.
Fuel (31 Imp. gal.)	238 lb.	238 lb.
Oil	27 lb.	27 lb.
Baggage	.....	20 lb.
Empty wt. (inc. electric starter and navigation lights)	1,710 lb.	1,720 lb.
Wing loading	12.2 lb./sq. ft.	13.1 lb./sq. ft.
Power loading	12.57 lb./hp.	12.7 lb./hp.
Max speed, sea level	134 mph.	133 mph.
Cruising speed	106 mph.	104 mph.
Flight duration, cruising speed	4.1 hr.	4.1 hr.
Range	310 mi.	425 mi.
Climb, to 3,300 ft. (1,000 M)	5.1 min.	6.2 min.
to 6,600 ft.	12.1 min.	15.3 min.
to 9,900 ft	22.6 min.	30 min.
Service ceiling	13,000 ft.	11,000 ft.
Absolute ceiling	15,000 ft.	13,500 ft.
Takeoff run (with 6-mph. wind)	540 ft.	650 ft.

Nearing completion at United Dutch Aircraft Factories Fokker in Amsterdam is the new Fokker Instructor, a two-three place primary trainer.

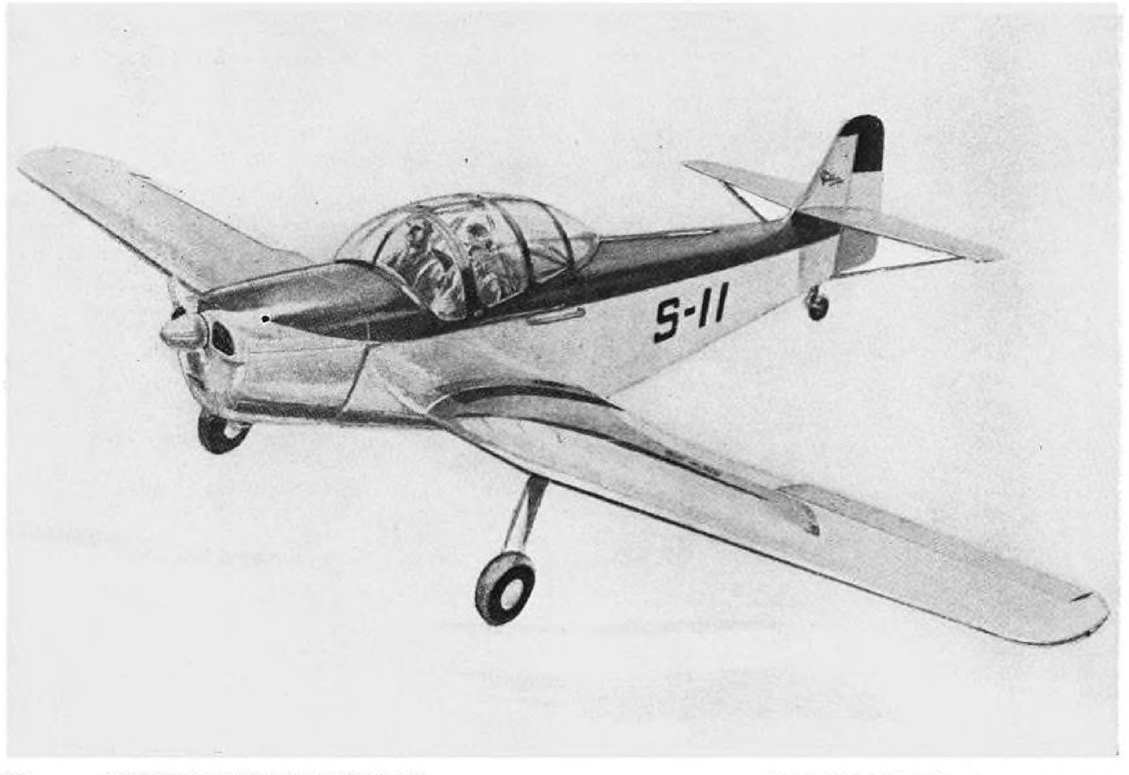
Normal seating is for two persons side-by-side, but immediately aft of the overturn structure a third seat of simple construction can be added for observation purposes. The bubble-type canopy slides aft for entrance and exit.

The all-metal cantilever wing is of single piece construction, carrying fabric-covered ailerons and manually operated metal flaps. Main landing gear, according to late reports, is of levered suspension construction, thus varying somewhat from the artist's conception shown here. Hydraulically operated brakes and steerable tail wheel are provided.

Fuselage is of welded steel tubular construction, fabric covered. Engine cowling is built up of easily removable panels to facilitate inspection and maintenance. The power plant, a 190-hp. Lycoming O-435-A, is mounted on a welded steel tube mount. An electric starter is provided as standard equipment.

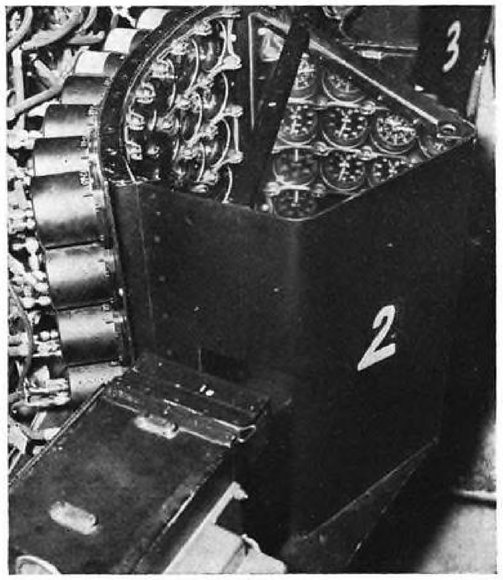
Vertical fin and rudder are both of light metal construction, with the stabilizer having a single external brace to the fuselage. Rudder and elevators have light metal spars and ribs, fabric covered. Elevator trim tab is adjustable in flight; that on the rudder is adjustable only on the ground.

The company reports that Frits Diepen Vliegtuigen N. V. has ordered 100 of the type, and negotiations are under way with the Dutch government for further orders.

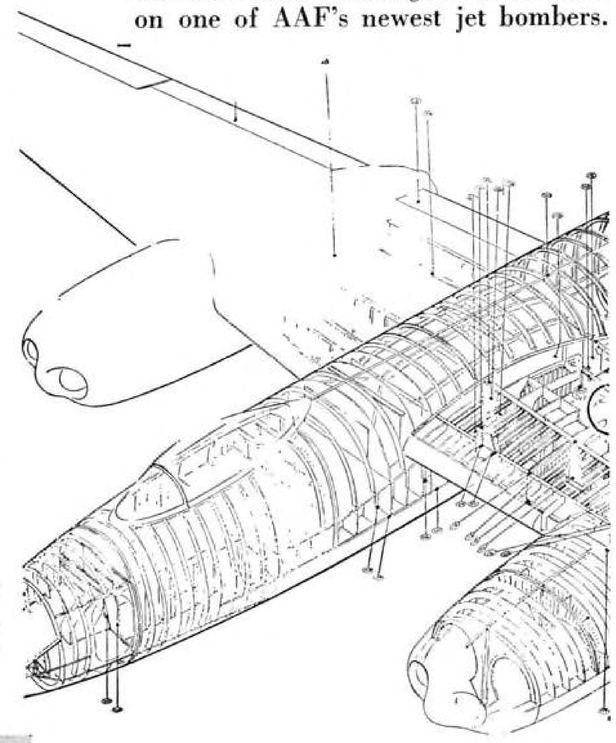


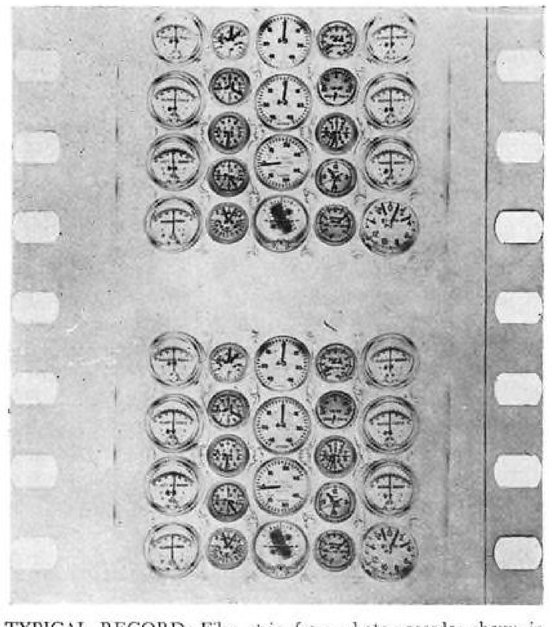
Recording Test Data on North American B-45

First story on methods of recording 28,-800 instrument readings in one minute on one of AAF's newest jet bombers.

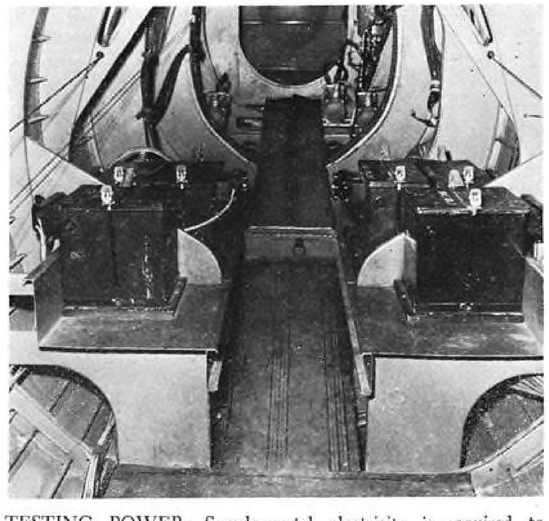


COMPACT RECORD: One of five photo-recorders, this unit is fitted in small space by use of mirror to reflect 35 large instruments. Camera (lower left) has electro-magnetic actuator and is mounted on adjustable rails for exact alignment. Five photo-recorder units cover total of 120 instrument dials.

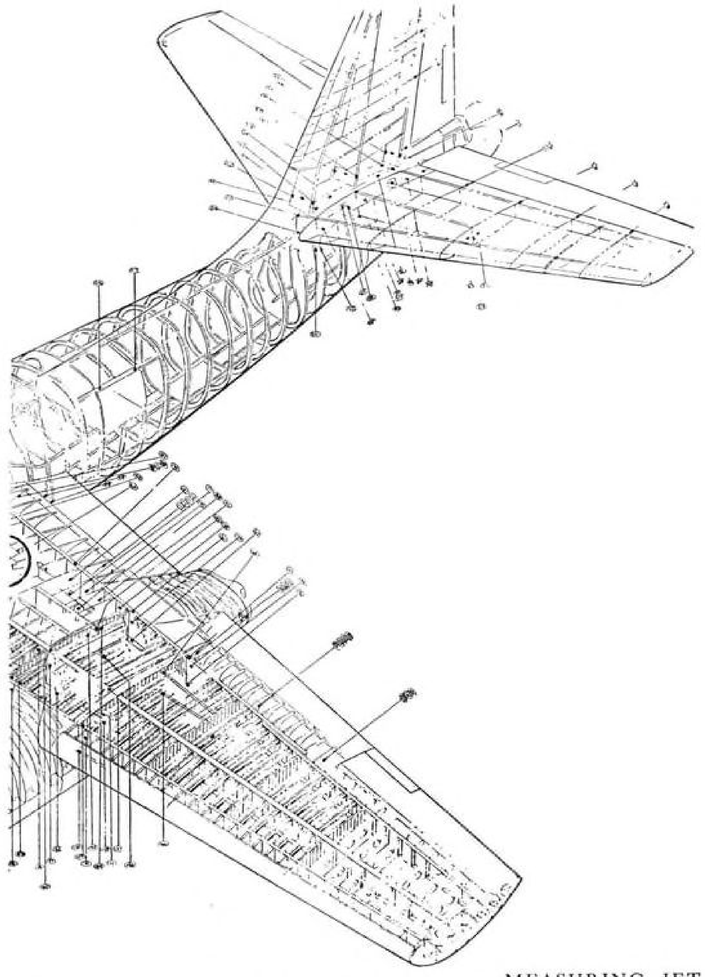


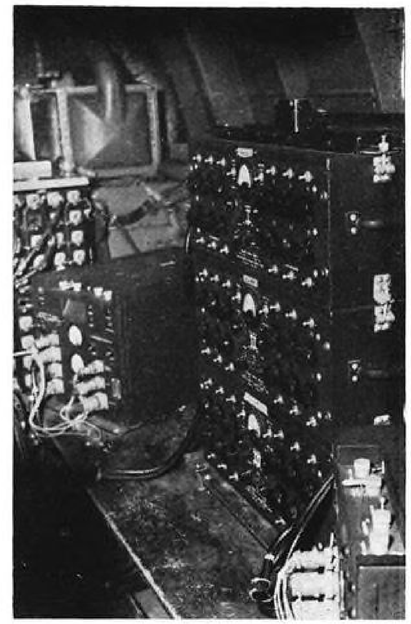


TYPICAL RECORD: Film strip from photo recorder shows in first and fifth vertical rows micro-ammeters measuring control forces. At bottom of fifth row is accelerometer measuring vertical force up to 12 G. Middle row dials give gyro instrument readings of yaw, roll, pitch, airplane attitude. Small dials give control surface angular displacements picked up by selsyn indicators.

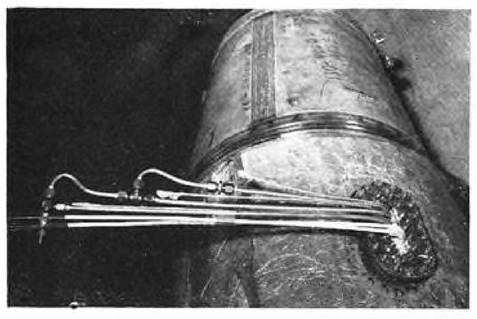


TESTING POWER: Supplemental electricity is required to operate recording oscillographs and provide necessary voltage for strain gages. For this purpose flight test B-45 mounts in tail section two 24-v. and four 12-v. batteries. Note cleanness of structural design in this first-published photo of interior structure of North American bomber.





STRAIN GAGE RECORDING: Mounted between three Consolidated Engineering Corp. recording oscillographs are these three bridge-balance units, mounted on top of each other. Each bridge-balance has twelve separate channels and 36 cables from these units connect to selected points on strain gage terminal board seen in background.



MEASURING JET EXHAUST: Pressure tubes leading to stainless steel rake mounted in tail-pipe of B-45 engine are connected to sensitive-reading manifold pressure gages made by Kollsman. Gages are unusual and cover range of from 10 to 200 in. mercury, absolute. Gage dial has two pointers, larger making 19 revolutions covering 100 dial graduations per revolution.

SELSYN MOUNTING: Selsyn transmitters are linked by braided steel cables to B-45 control systems. To provide extreme accuracy of readings, each transmitter actually contains two selsyns, one geared to rotate at four times speed of other. On indicator dial in photo recorder one pointer makes four revolutions to one revolution of other pointer.

MEASURING INTAKE: Symmetrically-located pitot tube rakes are shown mounted within B-45 engine air inlet duct. For recording air flow at this point North American chose to connect tubes to F-1 sensitive air speed indicators rather than direct-reading pressure gages. Easier reading and greater accuracy was obtained.

New Plant Practices Cut Costs

Salvaging of expensive hydropress pads and simplifying router operation give substantial savings in Ryan production.

Through a simple method, Ryan Aeronautical Co. now reconditions the worn rubber forming surface of a hydropress ram, greatly cutting operating costs and lessening procurement problem.

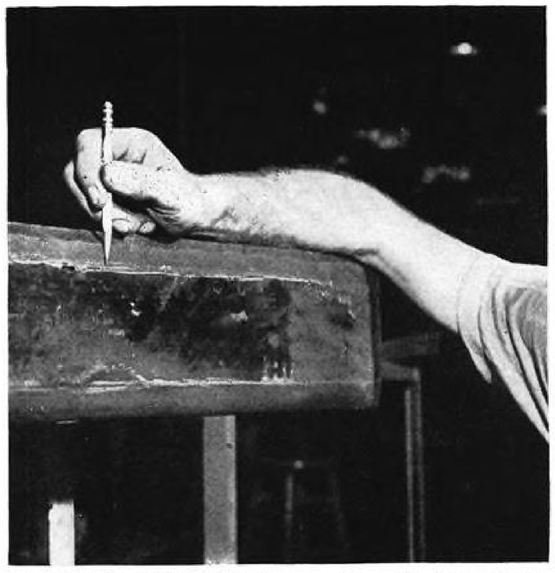
In normal operation, the rubber pad—six inches thick and weighing several hundred pounds—ultimately becomes badly chewed by the metal parts it forms. Usual procedure was to reverse the pad in the press, and when reverse side was worn, the pad was discarded.

Inspection showed that the pad center portion—about four inches thick, and comprising approximately two-thirds of the pad's mass—was practically unaffected by wear. To further utilize the unit, the chewed surface was ground down for about one inch (see left photo) and layer of new rubber vulcanized on each side of the pad, affording, essentially, a new unit. Reconditioning was suggested by company's R. W. Booth.

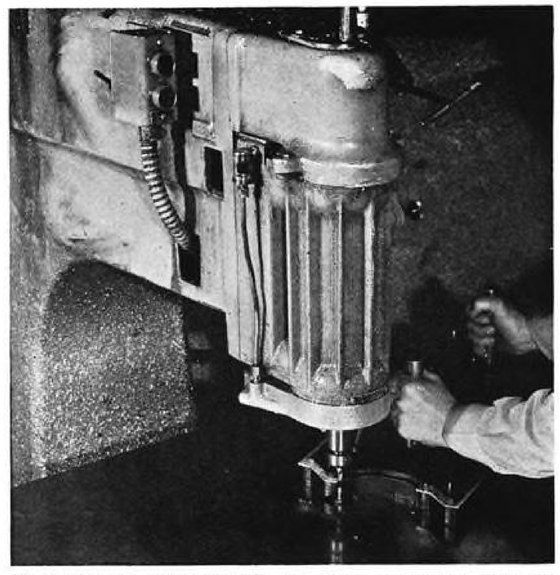
► **In another production study,** suggested by Willard Harpster, changeover to removable pilot tips on routers at Ryan reduced manufacturing costs and minimized damage to equipment.

Cutting sheet metal on the router is accomplished by feeding material to the bit —a revolving cutter. Pilot, consisting of cylindrical steel bar located in the machine table, and used as a guide for the cutting block, is an extension of a barrel locked in table (right photo). Formerly, when pilot was damaged, it was necessary to remove the entire barrel—a difficult job, frequently resulting in further damage to tool and pilot when latter was knocked out of holder.

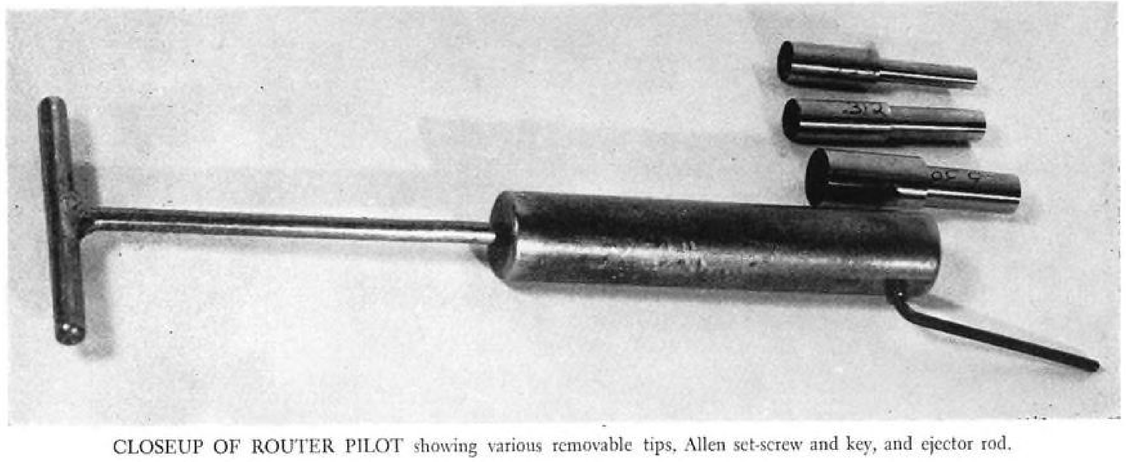
Pilot is now made with tip held in barrel by Allen set-screw (bottom). One side of the shank is slightly flattened to accommodate burr caused by the screw, which would otherwise bind the shank. Ejector is tapped from below for quick removal of unit.



INDICATED BY PENCIL is seam where 1-in. layer of new rubber is vulcanized to old hydropress pad to boost its life.



IN ROUTER OPERATION seen here, removable pilot tip contacts router block and guides work.



CLOSEUP OF ROUTER PILOT showing various removable tips, Allen set-screw and key, and ejector rod.

Fig. 1. Modified Boeing B-29 used as flying test laboratory with General Electric TG-180 (J-35) engine lowered to test position.

Flight Testing Gas Turbines

Procedures and recommendations for final step held necessary for complete engine evaluation.

By W. O. MECKLEY, *Aircraft Gas Turbine Div., General Electric Co.*

Introduction of the gas turbine for aircraft propulsion has brought new fields of testing procedures and techniques, and rapid development of new jet engine models has brought extensive testing programs to adequately evaluate and prove new designs.

To adequately test a turbojet requires that the engine be operated from sea level to 50,000 ft. pressure altitude, at air temperatures ranging from −70 F to +90 F, and at flight speeds as high as 700 mph. These conditions may be imposed upon an engine either by flight testing or simulating flight conditions in a wind tunnel. It has been found that to adequately cover early development needs of testing a new design in an entirely safe and economical manner, a succession of at least three different vehicles—the flying test laboratory, altitude wind tunnel, and aircraft installation—should be used.

These three vehicles are those generally used today for evaluating complete engine operation and performance. It is equally important to operate each component of the complete unit separately to obtain its basic characteristics.

► **Flying Test Laboratory**—Existing airplanes have been modified for the purpose of installing and operating a gas turbine where this engine is not necessary to maintain flight of the airplane. One such airplane (Fig. 1) is a B-29 modified to install a General Electric TG-180 (J-35) turbojet in the bomb bay. In this installation, the engine is housed inside the airplane when not in use, and is lowered below the airplane when operating.

Utilization of flying test laboratories to test gas turbines has proved to be a safe and expedient way to conduct necessary engine development testing under altitude conditions. The maximum contribution of such a test vehicle is to test new gas turbine models before any substantial amount of flying can be achieved in actual aircraft installations of the powerplant, and to explore a greater range of operating conditions not safe or possible in a single-engine airplane. Where important development engine components are available before the new engine is complete, it is often advisable to conduct flight tests of the components by utilizing some parts of older units to make up a complete engine. The main limitations of a facility such as this are its relatively low air speed and operational altitudes.

Items usually investigated in a flying test laboratory program are:

1. Investigate limitations of operation for various altitudes up to the minimum air temperature and pressure to be expected in the final aircraft installations of the particular engine, including investigation of such items as engine restrats, burner blowout, engine acceleration, and windmilling characteristics.

2. Establish limits of stability of various developmental engine control systems under flight conditions, including checking out new accessories and control system units.

3. Establish thermodynamic data for gas turbine compressor and turbine, with compressor inlet air temperature varying from sea level values to cold air at high altitude.

4. Establish safe operation of various methods of thrust augmentation such as water injection schemes; investigate induction system icing, and conduct initial flight tests on other miscellaneous items.

In addition to these items the flying test laboratory provides an excellent means of acquainting design personnel with the problems attendant to flying and with actual operation of their designs in flight.

► **Altitude Wind Tunnels**—A new turbojet can be installed either in a specially constructed wing and nacelle or in a modified aircraft installation, and the installation mounted in a wind tunnel where altitude pressure, temperature, and flight speed are all simulated. The best example in the world today of the ultimate to which simulated flight operation can be carried is the NACA Aircraft Propulsion Research Laboratory's Altitude Wind Tunnel in Cleveland.

Use of the altitude wind tunnel has been extremely valuable in extending the range of turbojet testing before installation in the final aircraft installation. Such a facility appears to be most valuable in complete performance evaluation and operation of specific engine designs after the development "bugs" have been eliminated in the flying test laboratory. Accurate readings of temperature, pressure, and air and fuel flows can be obtained easier than in the final installation.

The general engine items to be evaluated follow those listed for the flying test laboratory except that the performance, starting, acceleration, windmilling and fuel characteristics of a specific engine can be evaluated at higher altitudes and high simulated flight speeds. The tunnel is better suited than either the flying laboratory or aircraft installation to conduct fundamental work on such important items as induction system and engine inlet icing, thrust augmentation, and specialized instrumentation.

► **Aircraft Installation**—When the turbojet is finally installed in the airplane for which it is intended, its characteristics should be well evaluated and its operational limits well defined, so that initial flight tests of the new airplane can be carried on with a minimum of engine uncertainties. A major part of the initial tests will cover items such as investigation of takeoff and landing characteristics, airplane control and performance, and little time is available for specific engine tests.

Flight test airplanes are instrumental as completely as possible using automatic photo recorders and temperature recorders to obtain desired engine and airplane data and usually are equipped with oscillographs to measure rapidly fluctuating stresses and pressures. Space restrictions and absence of more than a minimum of human bservers usually limit the number of elements to be investigated on one flight far below that possible in either the flying laboratory or altitude wind tunnel.

Specific items to be investigated overlap somewhat those already evaluated in the previous two facilities. Items such as jet thrust, compressor pulsation, burner blowout, engine windmilling speed, restarts, and

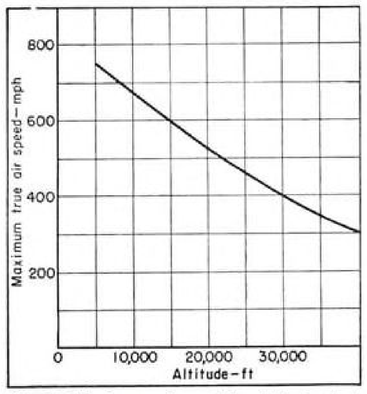


Fig. 2. Maximum airspeed for altitude starts with engine windmilling.

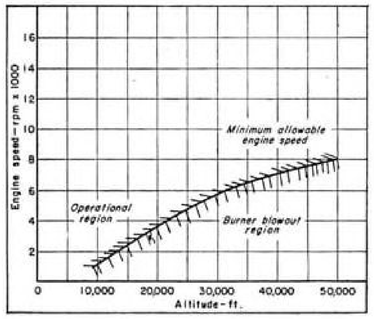


Fig. 3. Variation of allowable minimum engine speed with altitude.

accelerations may be influenced somewhat by the particular installation's intake duct and tailpipe design, and usually enough testing is done to determine what these differences, if any, are. Characteristic items requiring more attention in flight test are: temperature patterns in and around the engine compartment, flow conditions and pressure recovery in the intake ducts under different airplane altitudes, and performance of lubrication and fuel systems with respect to temperatures and pressures in the lines. This latter is important to insure satisfactory service during high altitude operation.

► **Gas Turbine Characteristics**—The following details are important items investigated in both operational and performance evaluation.

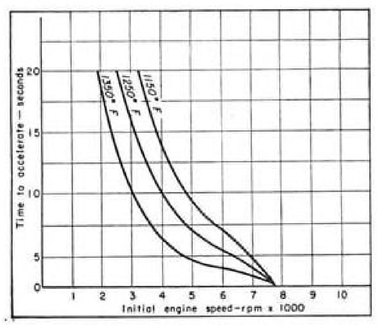


Fig. 4. Typical acceleration data with constant area jet nozzle, constant altitude. (Figures on curve are exhaust gas temperatures.)

1. Starting and minimum speed operation; obtaining successful restarts in flight at high altitude is a critical turbojet problem. In general it may be said that increases in either altitude or flight speed reduces the probability that successful starts can be made. Fig. 2 illustrates this effect as obtained during wind tunnel tests of a turbojet now in production. It is important to obtain information concerning flight starting in either the flying laboratory or wind tunnel so that any limitation may be brought to light before engine flights in an airplane dependent on its operation are made.

Minimum idling speed of the engine is determined at that point at which one or more combustion burners cease operation. This minimum speed line (often called burner blowout line) is approached when the turbojet is throttled to reduce speeds. Safe idling speeds tend to increase rapidly with altitude and are affected unfavorably by high airplane speeds. A minimum speed schedule such as is shown on Fig. 3 is usually determined in either a wind tunnel or flying test cell prior to actual flight test.

2. Acceleration tests are conducted to determine the maximum rate of engine acceleration without exceeding engine tailpipe gas temperature limits and to determine maximum altitudes and minimum engine speeds for practical acceleration rates. The time required to accelerate the engine becomes greater with increasing altitude because, though the mass of engine to be accelerated remains constant with altitude, the force available for accelerating the turbine and compressor becomes less as the gas densities decrease. Fig. 4 and 5 show typical acceleration data obtained during evaluation.

3. Operation of a turbojet over a wide range of altitudes and ram pressures requires that the control system provide stable operation and automatic compensation for these changing conditions, so that manual control will not require a continuous adjustment to meet variables during a flight. Items necessary for evaluation are: stability of the system at all speeds and altitudes, determination of engine speed variation at a given position of the pilot's throttle with variations in plane speed and altitude, evaluation of operation of the maximum speed limiting governor, which should hold a specified limit regardless of plane speed or altitude, determination of satisfactory operation of control system at extreme temperature (at least −67 F).

4. Performance tests are necessary to confirm the basic overall design of a new turbojet, laid out usually by properly matching component efficiencies of compressor, combustion chamber, and turbine. Altitude and ram effects on a new design cannot be accurately evaluated and engine performance estimates either confirmed or modified as dictated by the test results until the engine is either flown or placed in a wind tunnel.

5. One of the most important phases of performance testing is the determination of

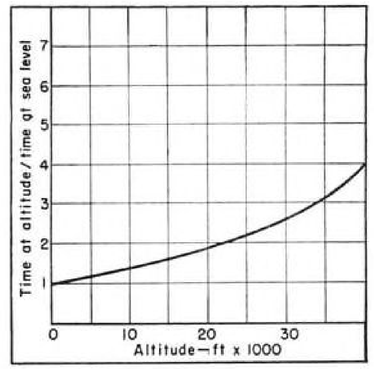


Fig. 5. Effect of altitude on acceleration time.

jet thrust at high altitudes and the effect of ram or jet thrust. Data obtained to date (Fig. 6) indicate that at low engine speeds, fuel flow to the engine is reduced as ram increases, while at or near rated engine speed, ram has relatively little effect. Because of the increase in jet thrust, with ram increases, the corrected specific fuel consumption is lower at all engine speeds under ram conditions of flight.

In connection with jet thrust, it is of real interest to the airplane designer to know also the net thrust of the installation which is determined by subtracting the momentum MV of the air flow passing through the engine (also known as ram drag) from the measured jet thrust. In general the effect of ram is to reduce the net thrust of the airplane and increase the net specific fuel consumption. This should not be interpreted as indicating the overall jet cycle to be less efficient at high speeds as when thrust horsepower is considered these trends reverse themselves.

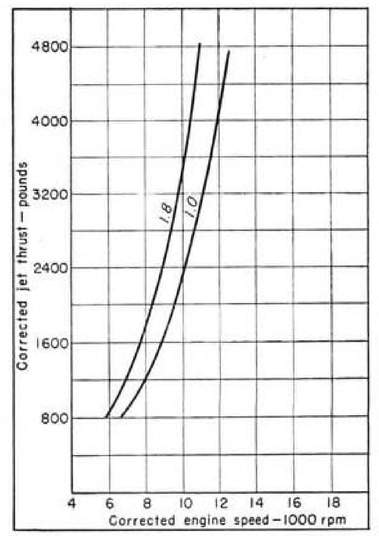


Fig. 6. Variation of jet thrust with ram pressure ratio at constant altitude. (Figures on curve are ram pressure ratios.)

Acceptance And Service Testing For Vibrator Power Supplies

Important steps in checking vibrators to insure compliance with exacting purchase and maintenance requirements for aircraft radio installations.

By W. E. PRICE, and E. M. HASSELL, Sperry Gyroscope Co.

Increasing importance of radio equipment in all types of aircraft is putting constantly greater stress on perfect functioning of all components. This is particularly true of vibrators, many of which today are discarded instead of being adjusted.

Many aircraft receivers and other types of electronic equipment depend on vibrator power supplies for converting low voltage aircraft supply to higher voltage suitable for operation of radio tubes in standard basic circuits. Some types of apparatus use vibrators for converting low voltage d.c. into a.c. power for particular applications. For practical designing of a vibrator power supply into a receiver chassis, a given power requirement will frequently require less space than an equivalent motor-generator supply. Electrical efficiency is materially higher but in the initial design is somewhat offset by the difficulty of obtaining interference-free operation in high sensitivity receivers.

Operational conditions of a vibrator power supply must be better controlled as to overload, input, impedance, transformer losses, buffing, and filtering components than is normally required with a motor generator. Because of transformer iron characteristics and choice of buffing components to meet all service, normal regulation of a conventional vibrator pack is poorer than a generator. This necessitates that the vibrator pack be operated under a relatively constant load. Proper power source must be maintained so that the vibrator looks back into an extremely low impedence circuit. If this requirement is not met, as when accidentally operating equipment on the aircraft's generator, the vibrator contacts will spark violently, and waveform will be degenerated into what may be only interpreted as hash. This condition may be partly corrected by installation of very high capacity electrolytic capacitors across the supply terminals; but under normal conditions, the power factor of such capacitors is sufficiently high so that a full correction of source impedance to the vibrator cannot be obtained. Vibrator transformer iron losses are basically a matter of design changes achieved by operating the iron at low flux density.

Vibrator application and type may be roughly divided into three groups—(1) simple primary vibrator with a tube rectifier for the high voltage, (2) synchronous or self-rectifying type, and (3) a.c. supply or precision power vibrator, shown in Fig. 1.

► **Precision Vibrator Requirements**—To assure uniform and trouble-free operation, rather exacting purchase specifications must be established for each particular type of vibrator required. A brief list of purchase requirements for a 100-cycle precision vibrator has been established as follows:

Type—Interrupter vibrator, 12v. drive coil.

Input voltage—10.6 to 16v. Starting voltage should not exceed 8v.

Input current—The power contacts should safely handle 6 amp.

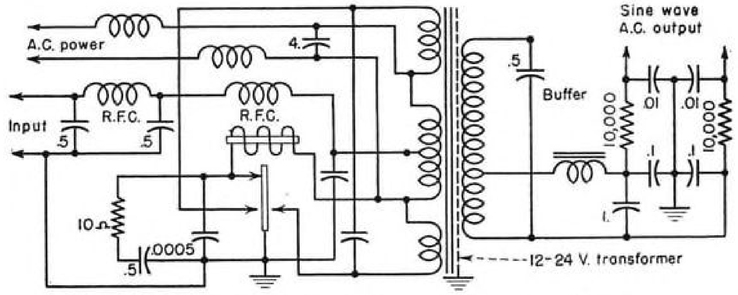


FIG. 1. SCHEMATIC DIAGRAM of a.c. precision power vibrator system.

Frequency—The reed should vibrate at 100 cps. with these tolerances:

1. At room temperature and 13.25v. input, +.8, —1.2 cycles; and at 10.6 and 16v. +1., —1.5 cycles.
2. At —40 deg. C., not more than 3.0 cycles higher than frequency at room temperature, but not exceeding 102.5 cps. at 13.25v. input; nor exceeding 103 cps. at any input voltage from 10.6 to 16.

Vibration—When subjected to vibration at any frequency from 10 to 55 cps., with an amplitude corresponding to an acceleration of 9G's, there should be no damage, or change in electrical specifications.

Life—After 500 hr. of operation at 13.25v. input at room temperature, it should meet same specifications as required of a new unit.

Sealing—The unit should be sealed to exclude dust and insure freedom from damage

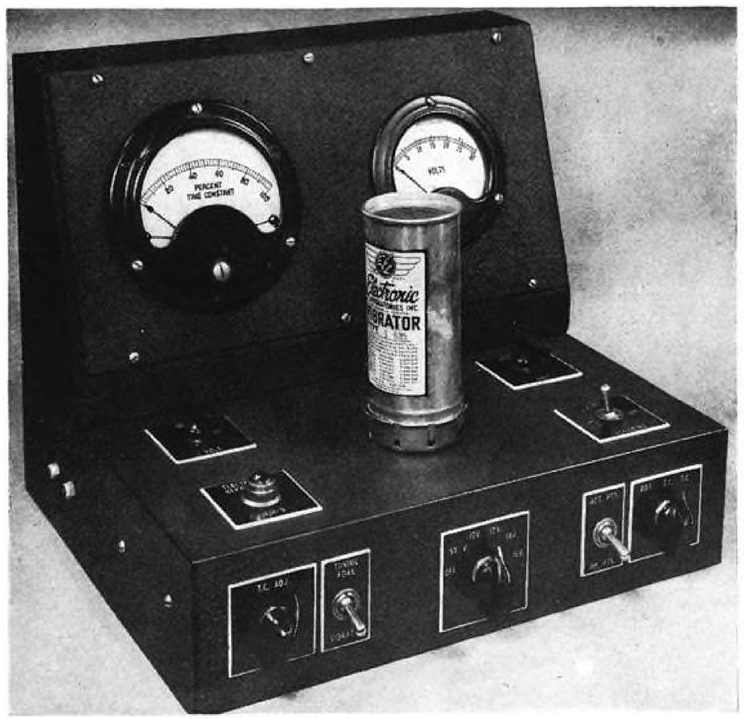


FIG. 2. TEST SET for checking a.c. precision vibrator.

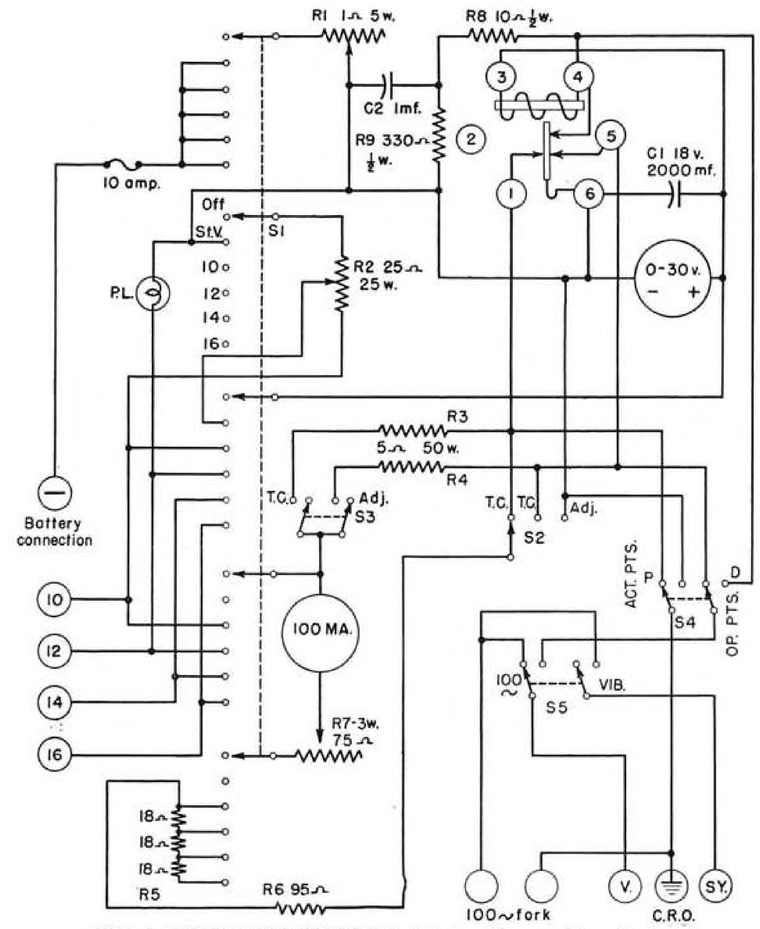


FIG. 3. SCHEMATIC DIAGRAM of test set for precision vibrator.

in normal handling. All base pins should be filled with solder. Packing between the vibrator and its container should be of rubber, or equivalent, and sufficiently thick so that the frequency when the vibrator base is clamped does not differ by more than ¼ cps. from the frequency when the base is not clamped.

Plating—The container should be made of tinplate, or plated, to insure freedom from rust or corrosion in protected service.

Contact chatter time—This is defined as the duration of the off-interval of a break which reaches zero voltage axis during the interval when power contacts are closed. Chatter time on one side should not exceed 15% of the total closed contact time. Meas- 13.25, and 16v.

Time Constant—Ratio of closed contact time of each contact to the time of one cycle of vibration should be from 36 to 44% at 13.25v. input, and from 36 to 46% at 10.6 and 16v.

► **Vibrator Test Methods**—Specifications are formed in such a way as to assure meeting both the requirements of the particular equipment and such certification tests as may be applied. Original acceptance and maintenance tests of vibrators may be normally conducted with the same apparatus and in accordance with general specifications. A test set suitable for checking a vibrator of the type previously described in the purchase specification is shown in Fig. 2. Other components required for this test are a frequency standard (in this case a General Radio precision fork) automobile-type batteries, transformer, and a 5-in. oscilloscope. The schematic circuit is shown in Fig. 3.

Testing vibrators for plate supply applications does not require the precision of a unit used for most a.c. power applications. In construction of such a plate supply power pack, the load should be adjusted to maximum that may be encountered in the use of the vibrator and quality of the unit established by its output voltage and wave pattern. Proper wave pattern for a synchronous-type vibrator is shown in Fig. 4. Departure from this wave pattern may indicate contact break during a normally closed cycle or contact bounce as shown by the dotted lines. Either contact break or bounce will create excessive sparking with resultant short vibrator life and high electrical interference. Distortion of contact springs may cause primary and secondary contacts to close in improper sequence resulting in output loss and high contact sparking.

Purchase and application requirements of the precision vibrator are most exacting; hence its test methods will be described, with reference to the test set shown in Fig. 2, together with the auxiliary components.

Starting voltage—Rotate R2 (Fig. 3) to minimum voltage and place SI in St. V. position. Advance R2 until the reed starts —must start at less than 8v.

Frequency—Switch SI to 14 V. and adjust R1 for 13.25v. input with S3 closed to TC, and S4 to P. Switch S5 to 100 cycles and set oscilloscope controls for external synchronization with the lock-in control at 0. Carefully adjust the oscilloscope sweep control until the pattern is at rest. Switch S5 to VIB. and advance the synchronization control to about 30 on the dial. With a stopwatch, obtain the time required for 10 cycle-patterns to move off the 'scope face. By reference to Fig. 5, the difference in cps. of the vibrator from the fork may be obtained. With a standard 'scope, drift to the right will be caused by frequencies below 100 cycles and drift to left will be indication of frequencies below 100 cycles.

Adjust S1 and R1 in combination to obtain an input of 10.6 and 16v. and repeat frequency test. Frequently recheck sweep frequency of oscilloscope against fork to prevent drift.

Time Constant—S1 and R1 are adjusted for 13.25v. input. Close S3 to TC, S4 to P, an S5 to VIB. Adjust R7 for full scale with S2 and ADJ. Switch S2 to vibrator point 1 and then to 5 (TC and TC) and read time constant directly on the milliammeter. Repeat at 10.6 and 16v.

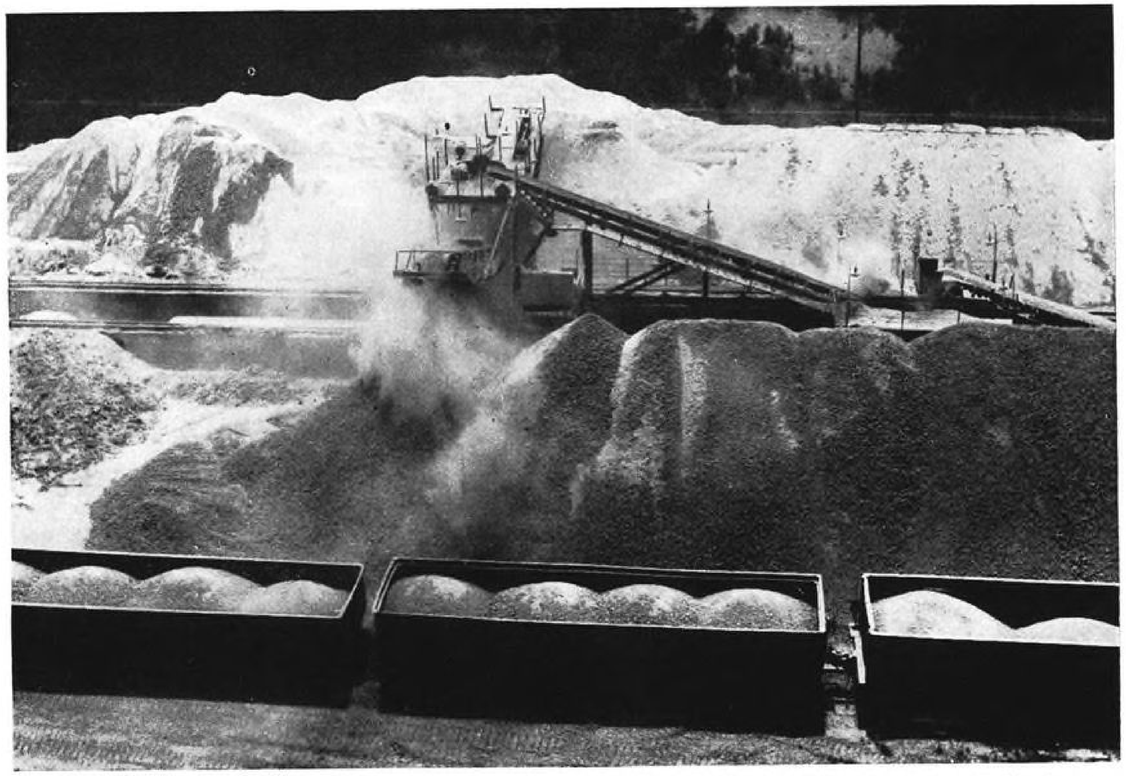
Chatter—With the switching arrangement used for time constant check, inspect the waveform developed across the load resistors with S4 on ACT. PTS. Pattern should be square and have flat lines at the top and bottom as shown in Fig. 6. Fuzziness or breaks indicate that power contacts are bouncing or not closing properly. By use of a squared screen on 'scope, determine that total break time does not exceed 15% of total half cycle time.

Switch S4 to OP. PTS. and observe pattern developed by the reed drive contacts. Pattern should be symmetrical and free of breaks or fuzziness.

In original acceptance tests of these vibrators, they are also given a brief operating test—oven-heated to 165 deg. F. and thoroughly tested hot. They are then cooled to room temperature and retested to the same specifications.

► **Service Checks**—Following is a summary of maintenance checks which may be performed, effect of a given malfunction on equipment operation, and adjustments that may be made toward correction. (These adjustments may be made by removing the dust cover of the vibrator—usually requiring a special circular soldering bit.)

(Turn to page 36)



1. Bauxite from South American deposits is unloaded and stockpiled at the Baton Rouge plant of The Permanente Metals Corporation, where it is converted to *alumina*. The plant, located on the Mississippi River, comprises 34 buildings on a 318-acre river site, is capable of turning out one billion pounds of alumina per year. It requires four pounds of bauxite ore to make two pounds of alumina.

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FROM ALUMINA TO FINISHED ROLLING, PERMANENTE METALS CONTROLS EVERY STEP IN THE PRODUCTION OF KAISER ALUMINUM, ASSURING QUALITY PIG, INGOT, PLATE, SHEET, STRIP, AND ROOFING.

It's something of an achievement to turn out, in a single year, almost as much aluminum as the entire industry produced in the most productive year before the war.

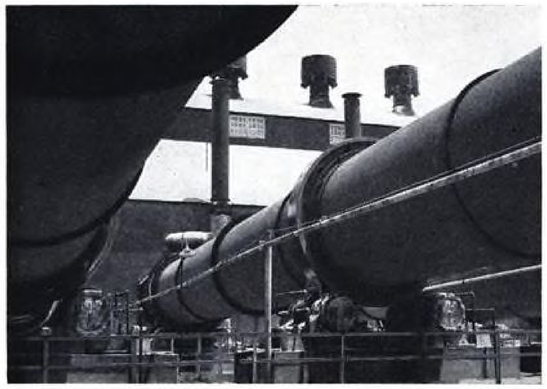
It's even more of an achievement to gain a reputation for quality and service at the same time. One reason The Permanente Metals Corporation has gained this reputation is its integrated operation—from alumina to the finished product.

The story here takes you from the delivery of bauxite at Baton Rouge to the rolling of finished aluminum at Permanente Metals' Spokane mill, with capacity of 288 million pounds yearly.

But no pictures and text can convey to you the eagerness of this young-minded organization to serve the buyers of aluminum . . . to tackle the toughest problems . . . to take its place as a vital factor in this age of light metals.

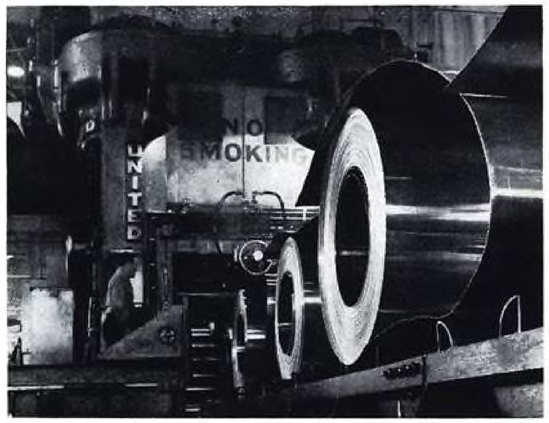
Kaiser Aluminum is a product second to none—not merely as a *substitute* for other metals and materials, but as their *successor* in the scores of applications where aluminum can add something new: lightness, strength, workability, resistance to corrosion, beauty.

And this aluminum is here *today*—ready to meet your requirements!



2. It isn't alumina yet—but this view in the Baton Rouge plant shows the final step in processing. These giant rotary kilns operate at 1800 degrees F, and cook the alumina hydrate into snow-white alumina powder. This alumina is then loaded into box cars and goes by rail to Permanente Metals' reduction plants at Spokane and Tacoma, Washington, where it is converted into basic aluminum.

3. Spokane, Washington, is the home of the reduction plant of The Permanente Metals Corporation, where alumina is made into basic aluminum. Another reduction plant, at Tacoma, increases the supply needed to keep the Spokane rolling mill operating at capacity. Reduction process requires tremendous power. Metal is cast into pure aluminum pigs, then sent to rolling mills for remelting and alloying.



4. The rolling mill at Spokane is capable of producing more than 288 million pounds of aluminum yearly. Two-ton ingots of alloyed aluminum are hot-rolled into long strips. Cut into sheets, the metal is cold-rolled to proper specifications (above). Careful handling and constant testing assure outstanding quality. This plant comprises 53 acres. Plate, sheet and strip are loaded directly into cars for shipping.

5. Here's why Kaiser Aluminum is in demand: Permanente Metals' representatives really give service. Delivery promises are kept. Quality exceeds specifications. Top technical brains are always at your service, may cut your costs through sound advice. Though Permanente Metals itself is but one year old, its administrators, engineers and operators have had years of experience in the aluminum industry.

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Start voltage—High battery loads, such as engine cranking and radio transmitter operation, will frequently lower battery supply below the point where radio equipment can be expected to function properly. To meet this service conditoin, aircraft vibrators must vibrate at a very low voltage, else the reed may be pulled to one side so that a power contact closes the battery circuit through the very low resistance winding of the power transformer, resulting in a blown fuse or breaker. Starting voltage can be controlled by adjusting drive contact spring to place the reed end closer to the drive coil. Contacts may be polished with relay tool and squared by adjusting of contact supports.

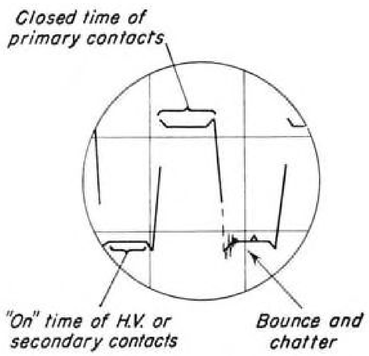


FIG. 4. PROPER WAVE PATTERN for synchronous type vibrator.

Frequency—The precision vibrator described is used in an automatic radio direction finder which is phase operated, requiring a high frequency accuracy to obtain optimum apparatus performance. Straight a.c. power requirements may well tolerate a frequency drift of ±5% while plate supply vibrators should be held to ±10% of design frequency. Variation beyond this limit will decrease buffing efficiency with increased contact wear. Reed frequency may be adjusted by adding or removing a bit of solder from free end of the reed.

Time constant—Percent of total cycle time that the power contacts are closed is basically a design characteristic which must be held to reasonable limits of design center to insure ample power output, low contact current, and proper frequency vs. input voltage characteristics. If time constant is too high, decrease spacing between the power contacts by bending their support springs while keeping contacts parallel. After each adjustment, recheck frequency at standard voltage and ±20% voltage. In the precision vibrator discussed, the power contacts are in parallel, hence, care must be exercised to insure that both pairs contact at once; otherwise, a twist will be placed in the reed tension, rendering the vibrator very unstable.

Chatter—Contact chatter or bounce may take several forms. Frequently, contacts will bounce at the time of closing and cause fuzz in the pattern at the beginning of each half cycle. In other instances, wiping action of the contact when dirty or pitted may cause a break in the middle of the closed time pattern. This contact noise should be kept to a minimum since it may well be a source of contact sparking, with resultant contact burning and interference in the equipment. A large break in the center of closed contact time will upset buffing action with serious contact sparking. Points may be cleaned and squared with very thin, fine flat file. Ascertain that contacts close flat, and check that they remain parallel through normal swing of the reed by pushing the reed at free end through normal travel arc.

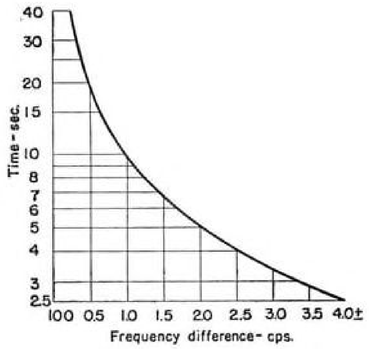


FIG. 5. TIME-FREQUENCY chart for comparing vibrator and fork cps. difference.

Large power vibrators are expensive and are usually well constructed so that minor repairs can profitably be made to obtain good service life. In routine maintenance overhaul, it is well to test to a standard of performance on a test jig, and again inspect vibrator and its associated power unit circuits with an oscilloscope before releasing equipment to the line. In resistance-capacitance buffer circuits, the capacitor may short and damage its associated series resistor without blowing the equipment circuit protection; but the vibrator is then working under a serious contact overload. Some position type resistors will short while others will open under severe overload. Oil-filled capacitors have been known to develop high leakage under operating voltages, but will check properly on service type capacity testers. It is advisable to maintain a close inspection on primary circuit connections and plugs to insure that heating will not occur at some point to create a high resistance supply source.

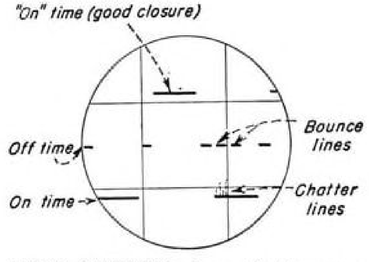
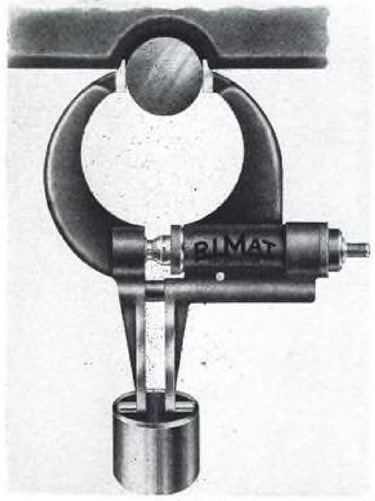


FIG 6. PATTERN of a.c. vibrator, across resistive load.

NEW AVIATION PRODUCTS

Engine-Work Micrometer

Rimat Duplex micrometer is reported as particularly suitable for aviation engine work. Made by **Richards Machine Tool Co.**, 124 S. Isabel St., Glendale 5, Cal., instrument



can measure crankshaft bearing sizes and test crankshaft for roundness without removal of shaft from engine block. With same setting, bearing insert can be checked for size and fit, thus eliminating possibility of error, either through faulty measurement or mismarked parts. English or metric measurements are optional.

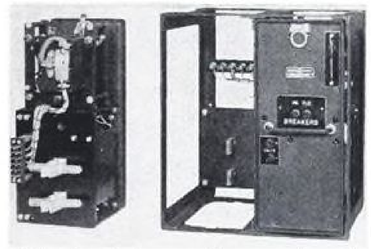
Rivet Shield Stops Marring

Dishing, dimpling, ringing, and denting during flush riveting is reported eliminated with use of No-Mar rivet shield offered by **Aircraft Tools, Inc.**, 2306 E. 38th St., Los Angeles 11, Cal. Shield is also stated to avoid cracking tendency encountered in more brittle types of material, such as SRT, and

it is said to be notably effective on extra thin sections and convex surfaces. Construction is of high grade tool steel, with face hard chrome plated to a mirror finish. Length of shield is 3 in., and driving set inside has .401 Parker taper shank. Device fits on barrel of any standard make pneumatic rivet hammer.

Grouped-Panel Power Center

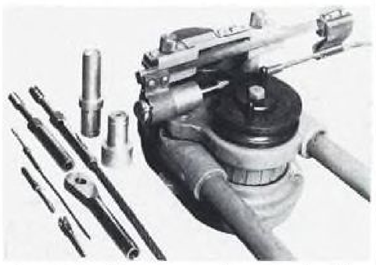
In new generator power center for aircraft, all control and protective equipment is grouped together in small removable panels. Made by **Aviation Div., General Electric Co.**, Schenectady, N. Y., center contains voltage regulator, reverse current relay, directional circuit breaker, power disconnects, control disconnects, and control circuit protection equipment. Individual panel weight is maximum of 15 lb., and each panel is 6¾ in. wide, 14 in. high, and 10¾ in. deep. Any combination of panels can be



obtained, and they can be arranged as desired. Outgoing power bus can be supplied, as well as bus sectionalization with correct circuit breaker protection.

Aviation Cable Swager

Portability and simplicity of operation are features of steel cable swaging machine manufactured by **James R. Kearney Corp.**, 4224-42 Clayton Ave., St. Louis 10. Provided is powerful rolling and compressing



force that roll-swages eyes, jaws, turnbuckles, etc. Clutch transforms reciprocating handle action into rotating motion of rolls. For use in both aviation manufacturing and maintenance, machine will handle steel cable from $\frac{1}{16}$ in. to $\frac{1}{2}$ in. dia.

Information Tips

Properties and Uses of Nickel Alloys

"Nickel and High Nickel Alloys" is compressed handbook and guide being distributed by **The International Nickel Co.**, 67 Wall St., New York City 5. Author is Dr. Norman E. Woldman, consulting metallurgical engineer and former chief metallurgist for Bendix Aviation Co. Material on Monel, Inconel, Illium, and the Hastelloys is included, and modern fabrication and finishing practices are considered.

Portable Electric Cleaner-Blower

New electric cleaner-blower stated to feature both portability and increased cleaning action is publicized in circular from **Ideal Industries**, Sycamore, Ill. Heavy duty model is powered by 1½ hp. motor, blows air at velocity of 25,500 ft. per min., and weighs 14½ lb., while medium duty type has ⅝ hp. motor, displaces air at 19,000 ft. per min., and weighs 9½ lb. Units have four-purpose capacity—vacuuming, blowing, spraying, and drying.

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Center of all Westinghouse research activities is the laboratory at East Pittsburgh where a staff of 200 explores new and better methods of solving the problems of aviation.

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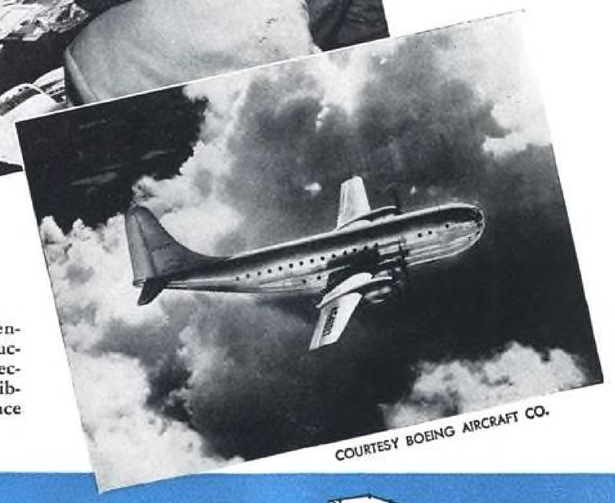

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PRODUCTS: Radio and microwave equipment.
RESEARCH: Development of air-borne and ground radio and radar equipment.

NEWARK

PRODUCTS: Aircraft electrical instruments.
RESEARCH: To provide ultimate in accuracy needed for aircraft instruments.

CLEVELAND

PRODUCTS: Lighting equipment to meet every airport requirement.
RESEARCH: Development and testing facilities.

SHARON

PRODUCTS: Aircraft transformers for a-c electrical systems.
RESEARCH: For new materials and their application in transformer developments.

BLOOMFIELD

PRODUCTS: Lamps for every aircraft, airway and airport lighting job.
RESEARCH: Continuing search for more and better light output at lower cost.

LIMA

PRODUCTS: Air-borne electrical equipment.
RESEARCH: High-altitude, temperature and humidity testing facilities.

EAST PITTSBURGH
Aviation Industry Headquarters

PRODUCTS: Wind tunnel drives, engine test units, variable frequency power supply equipment, maintenance equipment.
RESEARCH AND DEVELOPMENT: Main laboratories where a staff of 200 creates new developments of all kinds. This staff is supplemented by facilities to resolve research work into new products.

BUFFALO

PRODUCTS: Rectox aircraft engine starters and battery chargers. Copper-oxide and selenium rectifiers for communications equipment.
RESEARCH: Development of ground power supply equipment.

SOUTH PHILADELPHIA

PRODUCTS: Axial-flow, turbo-jet engines.
RESEARCH: Complete component testing facilities for aviation gas turbine power plants.

BOSTON

PRODUCTS: Sturtevant air heaters and coolers, fans of all types.
RESEARCH: Unmatched for studies of air-handling equipment.

TRAFFORD

PRODUCTS: Micarta pulleys and structural parts.
RESEARCH: For adaptation of material to new aircraft applications.

New Luscombe Four-Placer Designed for Room, Utility

Farm and business users are primary market goals for 165-hp. all-metal plane previewed at flying farmers national meeting.

By ALEXANDER McSURELY

A shiny new all-metal answer to the flying farmer's prayer—for a sturdy easy-to-operate multi-purpose farm plane—was announced last week by Luscombe Airplane Corp. at the National Flying Farmer Association meeting at Stillwater, Okla.

The high-wing, 165 hp. four-place Luscombe model 11 is moving rapidly toward production, we observed during a recent visit at the Dallas plant. A survey of the plant, made with Eugene Norris, vice-president, engineering, on a recent Saturday afternoon when the production force was not at work gave excellent opportunity to see jigs and fixtures being prepared for the four-place line and components already beginning to take shape.

Demonstrations of the new plane are scheduled in many parts of the country this fall, Leopold H. P. Klotz, president, has announced. Depending on certifications, material flow and other problems, the plane probably will come on the market about the first of the year or shortly before.

Price on the four-placer is not definitely fixed, but it will be competitive, the company has reported. Since the lowest priced four-placer now on the market is the Stinson Voyager 165—selling for $5,847 FAF—it is probable that the Luscombe may also start out to sell for around this figure, although the whole market for fixed gear four-placers may be dropped to around the $5,000 mark by additional expected entries from Cessna and Ercoupe.

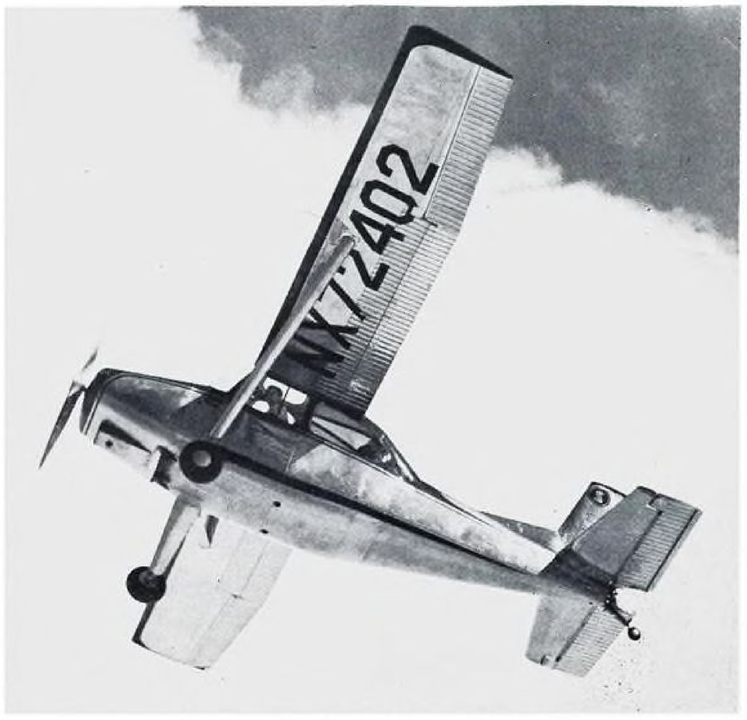
► **Engines a Factor**—A recent price increase put into effect by Continental Motors is a serious new factor in all four-place plane competition and may make Aircooled Motors a more prominent figure in the personal plane engine field. It is known that some of the companies, including Luscombe, have studies on models of their four-placers using 165-hp. Franklin engines.

But the original Model 11 is powered with a Continental 165 and presumably the production planes will use this power plant exclusively, at least until an alternate certification is obtained. Since the Stinson uses a Franklin, the Voyager would have an advantage in lower cost here. However the Luscombe has been designed from the new landing gear up for simplified all-metal mass production and might well be less expensive to make than the welded steel-tube, fabric-covered Voyager.

Luscombe reports a cruising speed of approximately 130 mph., range of more than 500 mi., and states that the plane will carry four passangers and 100 lb. of baggage in addition to full gas load (40 gal.) or will carry 600 lb. of cargo plus pilot and a full load of fuel. Additional performance data reported by observers includes a top speed of 155 mph., landing speed of 58 mph., and 800 ft. per min. climb. Wing span is 38 ft. and fuselage length 25 ft. All seats are removable to permit easy loading of large cargos through the wide doors to the 55-cu. ft. of cargo space in the cabin.

► **Has Good Visibility**—From the visibility standpoint the new Luscombe is well ahead of any highwing airplane we have seen. Large side windows give the usually-neglected back seat passengers a chance to look out, and a large back window and two windows in the top of the cabin makes overhead visibility less of a problem than in most high wingers. A big one-piece windshield gives good forward vision, and the engine is mounted at an angle that lets the pilot see over the nose so there is little or no need for S-turning in taxiing.

Except for the high wing and the conventional fixed gear the fuselage of the new Luscombe looks a bit like that of the Navion in general contours, a resemblance which is accented by the squared-off tail surfaces and the "hump" in the back where the roomy cabin tapers back to the tail. The Model 11 has more cabin room—both in width and length—than most of its contemporaries and it is quite easy to get in and out of the plane due to its wide doors. Door windows open with additional venti-



New Luscombe Model 11 has auto-like cabin.

lation through ducts and a vent over the back seat.

The newly developed Luscombe flexible landing gear, which also is being adapted to the two-place models in a lighter version, has already been subjected to extremely rugged drop tests and is expected to make both two and four-placers more adaptable to rough terrain and cow-pasture airstrips.

Wheel controls in the new airplane replace the stick controls which Luscombe has used heretofore. A throwover wheel or a single wheel control may be used in the production version.

► **Designed for Low Cost**—The Dallas manufacturer has been working consistently to lower production costs and thus drop ultimate price to consumers. Presumably this policy will continue with the Model 11 on the theory that the lower the price of the four-placer the bigger will be the volume of sales.

Going back to the Stinson Voyager—which is the best seller currently in the personal plane market—analysis shows that this is due not only to its relatively low cost but to the fact that it is one of the easiest and safest four-placers for the ordinary lightplane pilot to fly, and can utilize small fields which most other planes of its capacity cannot.

Luscombe is seeking to provide a plane with more payload, room and speed than the Stinson, to give a plane as easy and safe to fly and also give the important advantage of all-metal construction. If the Luscombe can do all this and sell for around the same price or even lower it will quickly become a serious contender in the four-place market.

There have been a few criticisms already—and there probably will be more—of the fact that the new four-placer's designers sacrificed a few of the sleek straight lines so dear to the heart of the draftsman in favor of more roominess and visibility. In our opinion it is a good sacrifice when measured against the importance of customer appeal in ultimate sales volume.

Granting that the bulging cabin adds some drag and cuts a few miles from the plane's cruising speed it is held that if the occupants are more comfortable because of the additional room they will be better satisfied with the plane.

Perhaps the Luscombe is the closest approach yet to a utility four-placer to be sold at a low cost. If so, it can win public acceptance no matter if it is as ugly as the old Ford Model T. (which it isn't by any means).

Flying Farmer Requirements

Luscombe Airplane Corp. hopes its new four-place plane will fit the specifications laid down by the National Flying Farmers Association (AVIATION NEWS, June 3, 1946) for farm planes. Forrest Watson, NFFA president, says the flying farmer wants:

► A plane built to withstand rugged use.
► Removable seats to provide extra cargo space for bulky objects.
► Starters.
► Larger wheels and balloon tires for easier landings and takeoffs on soft and rough ground.
► Doors that stay locked, windows with less rattle.
► Seat cushions with more cushion.
► Engine accessibility.
► Quickly removable windshields.
► More power for greater angle-of-climb on takeoff.

New Wisconsin Bill

The Wisconsin state legislature has passed a bill expanding the powers of the Milwaukee County Board for the zoning and development of airports. The far-reaching powers give the county the right to zone airport landing approaches and to close town roads in cases where county lands adjoin the road on both sides. The bill permits the county to rezone county land without the consent of town boards but preserves public access to private property affected by the closing of roads.

Visibility, roominess are features of new four-place Luscombe.

Solar Develops New Gas Turbine

A low horsepower gas turbine engine for auxiliary aircraft use or for commercial applications is under development at Solar Aircraft Co., San Diego, with completion scheduled about next January, the company's annual report discloses.

Solar believes the engine can be used to generate electricity in large planes, or as a prime source of power in motorboats or light planes. Company has also proposed design and construction of a larger jet engine for light Navy craft.

► **Manifold Production**—Manufacture of exhaust manifolds for reciprocating-powered planes still constitutes the bulk of Solar's aircraft production, but its jet engine components business is growing. Management is taking an active interest in turbine development, the report states.

Solar has several extensive military research projects in the jet field underway, in addition to development of its small engine. One is on thrust augmentation, another is on ceramic coating of metals as a method of raising permissible operating temperatures. A research contract on testing new heat-resistant alloys in exhaust manifolds might have implications in jet work.

► **San Diego Research**—With most of the research work carried on in the San Diego plant, the largest part of the activity at the Des Moines factory is the manufacture of combustion chambers, transition sections, exhaust cones and other parts for jet engines. The San Diego plant, hub of exhaust manifold production, also turns out some jet engine parts.

At the end of the war, Solar deliberately sought to diversify its business by adding some commercial products. It studied many, began preliminary work on some before abandoning them, and continued others. Now it is still strong in the manufacture of steel caskets by a subsidiary, in turning out film processing and dairy equipment. Further diversification may be found unnecessary.

Because of the abandonment of certain projects and because the necessary organizational changes following the war were not fully completed during the period, Solar ended its fiscal year April 30 with a loss on operations of $2,265,898 on sales of $11,410,969. After carry-back and excess profits tax credits, net loss stood at $509,065.

New Beech Dealer

Carl Wootten, former Beech general sales manager, has formed Wootten Aviation Industries, Inc. in Orlando, Florida to serve as distributors for Beech and several other aircraft. Plans have been drawn for branch offices in Jacksonville, Miami, St. Petersburg and Bartow. Wootten plans an aggressive campaign to expand Florida's small airport program.

Use New Seaplane In Float Base Survey

Development of a special Luscombe Model 8E "X"-tagged seaplane has been revealed by Theodore M. Wayave, chief of the CAA's Seaplane Facilities Section, who told New York Region members of the Aviation Writers Assn. that he had been flying this "first lightplane designed solely for water operation" on a survey trip through the south and east.

Mid-section of the plane is specially constructed and stressed to take the Edo float fittings, the Continental engine has been metallized and features waterproofing, and the craft's wing is of new design. Also fitted is a variable pitch propeller. And to simplify crane-handing of plane, there are three metal "eyes" atop the fuselage.

Mr. Wayave is using his Luscombe to contact local interests throughout the country regarding suitable seaplane base sites. CAA goal, he said, was 250 major seaplane bases "so located that at least one such facility would be available to cross-country seaplane pilots approximately every 125 mi." Particular aim is to establish adequate service and anchorage facilities, lack of which he called "the biggest stumbling block to the growth of seaplane flying."

Combined expenditure for the 250 bases is envisioned at about $2,500,000, or an average of $10,000 per base. And since many water facilities now in operation were set up at only a fraction of that figure, promise is held of well-rounded accommodations featuring major ramp, dock, service, fueling, and parking facilities.

Included are plans to establish bases on leased federal or state reservoir land, tied in with parks, picnic and camping grounds, and resort hotel facilities to be erected in those areas by private interests with full government encouragement. Wayave indicated that both government and state agencies were prepared to lease such acreage at extremely low rates.

In localities not situated on suitable bodies seaplane base data formerly incorporated in visualized that these might be economically made simply by bulldozing a 3-ft. deep channel, then installing pumps and control level floats to keep the water level constant. Tulsa, Okla., has such a lagoon under discussion. It would be a 400-ft. wide by 4,500 ft. long water strip in the lowlands but 10 min. drive from the heart of the city. Removed dirt could be employed in making adjacent landplane strips.

In conclusion, Wayave reported that the seaplane base bata formerly incorporated in the *Airman's Guide* has now been published separately in a new booklet, *Seaplane Base Directory*. First issue is being distributed.

SUPER CRUISERS IN SPAIN

Display of two Piper Super Cruisers and a J-3 Trainer, at a recent fair at Madrid, Spain, is one of several foreign exhibits of American light planes which have been reported recently as manufacturers are placing increasing emphasis on export sales. Piper recently has set up show rooms in Shanghai, China, and Lisbon, Spain. Corgaso, Piper distributor for Spain, Spanish Morocco and Tangiers, has headquarters in Madrid.

LOST AND FOUND DEPT.:

Insignia of new volunteer air safety organization, Idaho Search and Rescue, marks group of airmen, flying service operators, newspaper and radio men joined to conduct hunts for missing planes and provide aid to pilots in distress. Believed first of its kind, organization will be financed by pilots through registration fees collected by state. State aeronautics department will reimburse money expended for fuel and oil in air search operations. Organization's plans call for complete blanketing by aircraft of any area in or near Idaho where plane is reported missing. Aiding in its rescue work when necessary will be forest service, with its "smoke jumpers"; CAA and 190th Fighter Squadron of Idaho National Guard.

New Bell Dealer

A new concern, headed by President Leslie L. Irvin of Irving Air Chute Co. Inc., Buffalo, has been formed in England as a dealership in the British Isles for Bell Aircraft Corp. helicopters. It is Irvin-Bell Helicopter Sales Ltd. of Letchworth, Eng. Headquarters of Irvin-Bell will be at Scotitsh Aviation Ltd. in Ayrshire, Scotland, a company which has a substantial financial interest in the new organization. Maintenance, sales and service facilities and a training school for pilots and mechanics will be established at Ayrshire.

Ohio Operator Reorganizes As Richland Aviation Inc.

Richland Aviation, Inc. of Mansfield, Ohio, is the new name of Harrington Air Service. The new aircraft sales and charter service company resulted from a regorganization of the former company following involuntary bankruptcy proceedings in Cleveland Federal court.

The new 12-member board of directors of Richland include: Robert B. and Roger A. Black, officers and sons of the founder of Ohio Brass Co.; C. H. Kenkel, official of Mansfield Tire and Rubber Co.; Ray Eiche, manager of Richland's Cleveland sales branch, and A. E. Fletcher, credit manager of Standard Oil Co. of Ohio.

The reorganization was effected through liquidation of about $340,000 in creditor's claims by issuing one share of common stock for each $100 in claims.

Larson Heads Sales For TEMCO's Swift

Building up its marketing organization for handling the Swift, Texas Engineering & Manufacturing Co., Dallas, has appointed Leonard Larson sales manager of the personal airplanes division.

Although most recently with Adel Precision Products Corp., Larson is a former employee of North American Aviation, Inc., as are most other key TEMCO personnel. He has been a pilot since 1928 and has an aeronautical engineering degree from Louisiana State University.

In another sales personnel action, Safe Flight Instrument Corp., White Plains, N. Y., named Arthur S. Brown sales manager. Formerly sales manager of Scott Aviation Corp., Brown will now direct sales of Safe Flight Indicators.

KC, Dallas Compile Local Air Studies

A mounting community recognition of the size and value of its aviation activities is evidenced in studies just completed by the Dallas, and Kansas City Chambers of Commerce. The Dallas study reveals that aviation in the community employes 4,850 persons with an annual payroll of more than $15,000,000. The Kansas City payroll of $25,000,000 to 8,000 employees is made up largely of TWA Headquarters, which comprises about 70 percent of the total amount.

Dallas estimates that its aviation enterprises provide a gross business of more than $50,000,000 to the residents of the city, of which about $7,500,000 is contributed by Luscombe Airplane Corp. Other large aviation income producers are 12 privately-operated airports employing 650, two aircraft conversion firms employing 1,250, 12 dealers and distributors and 15 flying schools with a total enrollment of 800.

Kansas City's aviation revenue, in addition to that provided by TWA, includes over $3,500,000 from the Army and Navy, nearly $2,000,000 from local CAA offices, slightly more than $1,000,000 from aircraft suppliers, more than $665,000 from private operators and $163,732 from air cargo companies. During 1946 a total of 17 Kansas City fixed base operators grossed $2,829,213, three grossing more than $500,000 each.

Sales Trip in Navion Brings Enthusiastic Report

A four-place North American Navion used in a 24-day test of its utility for sales visits and sales promotion traveled 6,447 air miles in 55 hr. 37 min. at a total cost of $341.93 including fuel, oil, storage, maintenance, landing fees and insurance, but excluding depreciation. Cost per mile was 5.3 cents and cost per hr. of operation was $6.147.

The plane was loaned by North American to the Butler Manufacturing Co., Kansas City, Mo. for the experimental use. H. C. MacBrair, Jr., pilot, estimates that to cover the same territory by automobile would require driving 6,989 miles and consuming 174 hr. 44 min. at a 40 mph. average. It would be necessary for the salesman to drive 8 hr. 43 min. five days a week during the four week period to cover the ground, leaving virtually no time for sales contacts.

Many of the Butler sales calls were made on airports visited in relation to the hangars and airport buildings manufactured by Butler. MacBrair points out that the treatment the salesman receives from airport managers and operators when traveling in a personal aircraft is far superior to that received when he travels by auto and that the advertising value to the company of using a plane for sales trips is an important consideration.

Urge Market Study By Dealers, Distributors

Greater use of available statistical information on markets in aviation in analyzing the portion of such markets available to individual distributors and dealers was urged at the recent Aviation Distributors and Manufacturers Association mid-summer meeting at Mackinac Island.

Thomas G. Tynan, Philadelphia, ADMA Merchandising Chairman, cited a hypothetical case in which a distributor in an area where 10,000 airplanes are in use, could analyze his potential sales of an equipment item by applying the manufacturer's replacement rate on the item to the number of planes and then determine further the percentage of the entire potential market which he expected to obtain for the sales effort which he was prepared to put forth.

The merchandising chairman also discussed advantages of local trade clinics held by distributors to promote sales of specific products and to bring about more advantageous mutual relations between distributor and dealer. Cooperation of manufacturers in supplying display models, promotional material and company representatives as speakers is an important factor in the success of these meetings which are also advantageous to the manufacturer, Tynan pointed out. They enable the manufacturer to reach at a single meeting a large group of dealers of his product, giving them simultaneously new information about the product and new sales approaches.

Typical of the new aviation technical information clinics was one held recently by Berner-Pease, Miami, Fla. distributor, with 160 persons attending the two-night meeting. Talks by C. N. Dunn, Glidden Co. sales manager, Harold Dellett, Aircraft Tools Inc. sales manager, and Wayne Carlson, Miami district representative of Goodyear Tire & Rubber Co., and instructional motion pictures and demonstrations of various tools, equipment and parts were on the program. In addition to operators and dealers, a number of representatives of major airlines attended the Miami clinic.

Only 443 Airports Score High

Reports of a recent survey by Aircraft Owners & Pilots Association indicate that only 443 out of more than 5,000 airports in the country were approved as meeting standards set by the association for safety, service and courtesy.

The survey, which is continuing, is being made by individual AOPA members who report their findings to Washington on postcard forms. Main objective of the study is to single out the good airports for recommendation to the 32,000 AOPA members in preference to sub-standard fields in the same localities. Certificates will be issued soon to the 443 high score airports with AOPA's endorsement as being "a credit to aviation."

BRIEFING FOR DEALERS AND DISTRIBUTORS

AIR SHOW RESTRICTIONS—A new Civil Air Regulation part 60 is reported in the mill—and soon to be circulated for industry comment—which will restore to CAA at least part of its rights to regulate air shows. Inquiry discloses that CAA lost most of its rights to supervise air shows with the revision of part 60 which was adopted in August, 1945. Previously the Administrator had been authorized to supervise shows and grant waivers of rules for close-to-the-ground acrobatics when the show met specified conditions as to equipment, flyers' competency, etc. Now about all that CAA can do is to enforce regulations about stunting over crowds, etc. But the flyers can do virtually anythnig they please as long as it doesn't endanger others.

NEW LIGHTPLANE VHF UNIT—National Aeronautical Corp., Wings Field, Ambler, Pa., is preparing to market a lightweight VHF unit which can be incorporated in standard lightplane radio transmitters. It is one of the first of a series of electronic and radio products which NARCO, heretofore an engineering and sales organization, will market. Key figures in NARCO are James Riddle, president, and Rudy Garfield and A. R. Applegarth, vice presidents. The company is best known for its development work on the Hallicrafters personal plane radios and will continue to serve as national aviation representatives for Hallicrafters Co. In addition to its development, manufacturing and service division operations at Wings Field.

NATIONAL GUARD LIGHTPLANES—Vacancies for 850 lightplane pilots in National Guard artillery and liaison units have been announced. Pilots will be commissioned and authorized for 100 hr. flying time a year as training. Former AAF pilots who can pass class I or class II physical examinations are eligible if they attend a 60-day orientation course on ground force and liaison and observtaion work at Ft. Sills, Okla. First class starts Aug. 15, second class Oct. 17, and other classes are planned to follow as needed. Non-flyers who meet other requirements may be chosen for pilot training in an 8½ mo. course at Ft. Sill and San Marcos, Tex. In addition to 100 Piper L-4s and Stinson L-5s which are now being removed from surplus for reconditioning for use in the program, 47 North American L-17s (Navions) and 376 Aeronca L-16s (converted Champion tandem trainers) will be assigned in the program.

CROSSWIND GEAR DEMONSTRATIONS—Demonstration by CAA of the Piper J-3 Cub trainer equipped with Goodyear castering wheels for crosswind landings was an effective factor in the successful local Milwaukee campaign for continued development of the Maitland downtown airstrip. The plane is now traveling around the country in demonstrations of its ability to ignore crosswinds, stopping among other places, at the National Flying Farmers Association meet at Stillwater, Okla., last week. Meanwhile the Firestone tricycle crosswind gear developed on an Ercoupe is scheduled for an early Washington demonstration to CAA. Harry Copland, veteran pilot who first soloed in 1911 and has been named personal flying assistant to the Third Region CAA Administrator at Atlanta, plans to demonstrate the Goodyear plane shortly in Atlanta.

COOPERATION NEEDED—Success of the proposed Los Angeles-Washington private flyers' airway will probably be governed largely by the cooperation of aviation people along the 40-mi.-wide skyway. If the aviation interests in each area see to it that their towns are equipped with standard markers,—make an effort to dress up their airports and polish up their service to the touring flyers who use the route it could well be one of the biggest aids to promotion of private flying which have yet been found. The local airports and operators will benefit from the new business which should steadily increase if the proper service and facilities are provided and as more flyers learn of the advantages of following this route. Originally proposed by the Los Angeles Chamber of Commerce, the skyway now has been approved by both CAA and the Personal Aircraft Council and both organizations expect to cooperate in the survey flight along the route planned soon.

DEALERS GET LAST NAVIONS—North American Aviation, Inc., has completed sale of its inventory of four-place Navions to its dealer organization and the last new Navions still at the factory at Inglewood will be delivered this month. The Navions in dealers' hands will be the last to be obtained until Ryan Aeronautical Corp., San Diego, which purchased the plane, begins production probably sometime in October. North American will continue to operate its Coastair sales and service division for Navions in southern California and Arizona for the benefit of Navion owners in the area until Ryan sets up sales and service facilities for the territory. Of the 339 Navions which remained at Inglewood when North American stopped production, 256 went to dealers and the remaining 83 were purchased by the Army Ground Forces and National Guard with military designation L-17 (See national guard lightplanes above).

—ALEXANDER McSURELY

Mishaps Involving Larger Planes Boost Passenger Fatality Rate

Four accidents occur during first half of both 1946 and 1947 on domestic airlines; fair safety record still possible this year.

Passenger fatality rate on the nation's certificated domestic airlines probably will be higher during 1947 than in any year since complete safety statistics became available in 1939, but there is serious doubt whether the crashes of the past seven months warranted the publicity, criticism and investigations that have resulted.

By most other nations' standards, the U. S. carriers' record of 5.3 passenger deaths per 100,000,000 passenger miles during the first half of 1947 and 4.4 during the first seven months would be excellent. To some degree, American operators apparently are the victims of their own safety achievements during the past 10 years.

► **Previous Rate**—In 1946, the domestic airlines had 1.24 passenger fatalities per 100,000,000 passenger miles, best mark since 1939's record of 1.2. Rate during the six years from 1940 through 1945 ranged from 1.32 to 3.66. Should the carriers go through the remainder of 1947 without a fatality, the rate this year (assuming a 20 percent increase in traffic over 1946) could be reduced to 2.1.

Great Britain, one of the few nations which also publishes complete air safety statistics, has shown consistently a higher fatality rate per 100,000,000 passenger miles than has the U. S. Including overseas operations, British carriers reported a fatality rate of 11.4 during the first nine months of 1946 and an average of 10.4 during the five years from 1941-1945. (Mark for U. S. international carriers in 1946 was 3.52.)

► **Comparison With 1946**—Significantly, exactly the same number of fatal accidents—four—occurred on the domestic scheduled airlines during the first half of both 1946 and 1947. Fifty-six passengers and 12 crew members were killed during the first six months of 1946, when all four accidents involved DC-3s. One hundred and fifty-two passengers and 12 crew members were killed during the first half of this year, when three of the four crashes involved DC-4s.

In U. S. international operations, two fatal accidents took place during the first half of 1947—the Pan American Airways crash at Meydana, Syria, June 19, when seven crewmen and seven passengers were killed; and the TWA mishap March 11, when a crewman was sucked through a Constellation astrodome over the Atlantic.

► **Uncertificated Lines**—Accidents involving uncertificated carriers using transport-type equipment accounted for nine fatalities during the first half of 1947. Four were killed when a Nationwide Air Transport Service passenger DC-3 crashed at Carmel, N. J., Jan. 5; two died in a Slick Airways C-46 cargoplane accident at Denver, Feb. 14; one was killed in an International Air Freight cargoplane accident at Harrington, Del., Feb. 5; and two in a U. S. Airlines C-47 cargoplane crash at Charleston, S. C., March 14.

While airplane accidents captured the headlines, a comparison with the railroads' safety record this year is noteworthy. During the first five months of 1947, 1,706 persons were killed and 20,325 injured in railroad train mishaps.

Meanwhile, the President's special board of inquiry on air safety this month issued new recommendations to prevent aircraft collisions with terrain. The action is a direct outgrowth of the airlines' most recent accident—the Capital Airlines (PCA) crash near Leesburg, Va., June 13.

► **Emergency Step**—James M. Landis, CAB chairman and chairman of the special board, said emergency steps are necessary to prevent pilots from "feeling their way down" from low visibility instrument conditions to reported or hoped for visual conditions.

The Board urged that minimum enroute and initial approach instrument altitudes be standardized over each route flown by airline planes engaged in passenger operations. Some degree of standardization has already been achieved in western U. S., but the special board feels that nationwide standardization is vital to safety generally.

► **Recommendations Listed**—It was recommended that pilots not be permitted, except in emergencies, to fly below prescribed standard minimums in instrument weather conditions. Further, no clearances for instrument flight under these minimums would be issued by Air Traffic Control.

The President's board also urged that minimum enroute altitude for aircraft engaged in passenger operations for hire be raised from the present 500 ft. to 1,000 ft. above the terrain except for such special cases under day visual flight rule conditions as may be specifically authorized by CAA.

It was suggested that where pilots of passenger-carrying aircraft, flying at or above the prescribed minimum instrument altitudes, encounter visibility conditions suitable for visual flight they may descend below such altitudes and continue their flight at altitudes down to 1,000 ft. above the terrain after securing approval from Air Traffic Control for such descent. Thus, if pilots have three miles visibility and 500 ft. vertical separation from the clouds, they may then proceed in accordance with visual flight rules at altitudes down to 1,000 ft. above the terrain after notifying Air Traffic Control of this fact and that they are canceling their instrument flight plan.

TEST FLYING STRATOCRUISER
New photo of first Boeing Stratocruiser on test flight over Puget Sound, near Seattle factory. In initial stage of testing plane made seven flights in as many days.

Nonscheduled Lines Renew Protests

New group formed to protect irregular carriers' interests against CAB regulation.

What may be one of the last attempts at organized protest against the increasingly severe CAB restrictions on nonscheduled airlines took form during the past two weeks as several of the irregular operators formed the Independent Air Carrier Conference of America and sought the backing of Congress and veterans' organizations.

Latest revisions of Section 292.1 of CAB's Economic Regulations (the nonscheduled exemption) have brought the irregular operators, especially those using transport-type equipment, to a critical point, IACCA has declared. In a letter to the Veterans of Foreign Wars, the group stated that the new regulations (made effective June 10) will prevent many operators from remaining in business and may mean not only the loss of their planes but their homes as well because of indebtedness.

► **Founders Named**—IACCA was founded by three small independents, S. S. W., Concord, Cal.; Seattle Air Charter, and Aviation Corp. of Seattle. Through its general counsel, John J. Klak, Albee Building, Washington, D. C., it has sent out letters to over 1,350 uncertificated operators pointing out effects of CAB's new regulations.

The letters state that it is the observation of CAB's Economic Bureau that Section 292.1 was promulgated "because the Civil Aeronautics Act, from its inception, made the scheduled airlines virtually a monopoly, and any interference by the irregular operator would have to be noncompetitive." IACCA believes contract operations will be virtually impossible because of the latest revision of the nonscheduled exemption and declares that any uncertificated line with more than a very few contracts is likely to be classified as a common carrier.

► **Tariff Problem**—A new provision requiring the filing of tariffs by the larger independents also has become a difficult problem. IACCA said CAB's Tariffs and Service Division will require immediate submission of tariffs for the myriad of airports between which an irregular air carrier using transport-type equipment is likely to operate. "A general per mile or per pound rate is indicated as not meeting the requirements for submitting a tariff," the warning letters to the independents declared.

IACCA has suggested that CAB call a meeting of independent air carriers and interested veterans' organizations for a further discussion of the problems involved. The group also wants CAB to suspend restrictive parts of 292.1 at least until Jan. 1, 1948.

► **Applications Received**—Meanwhile, CAB by Aug. 1 had received 724 applications from irregular air carriers for letters of registration, and 650 letters had been issued. Unless an irregular (nonscheduled) air carrier has filed for a letter by Aug. 10, it may not continue to operate after that date.

About 665 of the applications have come from carriers using no planes of more than 10,000 lb. gross takeoff weight, but around 60 were from operators utilizing transport-type equipment (Lockheed Electras or larger). The letters of registration do not imply that CAB has approved the service offered by the holder, and the letters can be revoked immediately for violations of the nonscheduled exemption.

Operators using transport-type equipment who have received letters of registration include:

American Air Transport and Flight School, Miami Springs, Fla., 2 DC-3s, Nationwide Air Transport Service, Miami Springs, 5 DC-3s; Transair, Inc., New York, 3 DC-3s, 1 DC-4; Seaboard & Western Airlines, New York, 2 DC-4s; Maine Air Transport Co., Rockland, Me., 3 DC-3s; Consumers Airlines, Champaign, Ill., 3 DC-3s; Trans Caribbean Air Cargo Lines, New York, 3 DC-3s, 4 DC-4s; Southern Air Transport, Miami, 1 DC-3.

Magnolia Airlines, New Orleans, 1 Lockheed Lodestar; A. Dieterle, Chula Vista, Cal., 1 Douglas B-18; Miami Airline, Miami, 6 DC-3s; **International Air Freight**, West Palm Beach, Fla., 2 DC-3s; Strato-Freight, Inc., Albany, N. Y., 2 DC-3s; Eastern Aviation, Inc., Beverly, Mass., 1 Lockheed Lodestar; Nats Air Transportation Service, Oakland, Cal., 2 DC-3s; Atlantic Gulf & Midland Corp., Little Ferry, N. J., 1 DC-3.

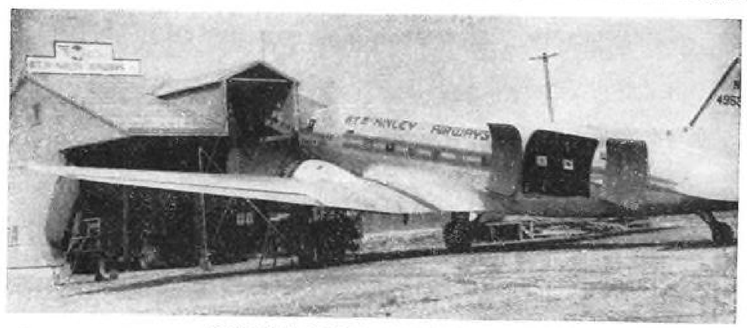
Gulf & Western Airlines, Houston, Tex., 1 DC-3; Matson Navigation Co., San Francisco, 2 DC-4s; Oxnard Sky Freight, Oxnard, Cal., 2 DC-3s; Aero-Van Express Corp. (Viking), Burbank, Cal., 8 DC-3s; Trans-Pacific Airlines, Honolulu, 4 DC-3s Mercury Airlines, Columbus, O., 5 DC-3s; Barnes Aircraft, Lumberton, N. C., 1 Lockheed Lodestar; Brinckerhoff Flying Service, College Park, Md., 1 DC-3; Skytrain Airways, New Orleans, 2 DC-3s; Trans-Luxury Airlines, New York, 3 DC-3s; Resort Airlines, Southern Pines, N. C., 4 DC-3s; Waterman Airlines, Mobile, Ala., 4 DC-3s; 2 DC-4s; Ocean Air Tradeways, Ronkonkoma, L. I., N. Y., 1 DC-4.

Quaker City Airways—Philadelphia, 1 DC-3; Chesapeake Airways, Salisbury, Md., 2 DC-3s; American International Airways, New York, 5 Boeing 314As; Pacific National Airline, San Francisco, 1 DC-3; M. D. Bryant, San Angelo, Tex., 1 DC-3; Kesterson, Inc., Knoxville, Tenn., 1 DC 3; Reg Robbins, Houston, Tex., 1 DC-3; Arnold Air Service, Anchorage, Alaska, 2 DC-3s; Moon Flying Service, South Bend, Ind., 1 Lockheed Electra; American Air Export & Import Co., Miami Springs, 4 DC-3s; Columbia Air Cargo, Portland, Ore., 2 DC-3s.

Sabihon Aviation, Wahiawa, Oahu, Hawaii, 1 DC-3; Mercury Airlines, Fort Worth, Tex., 4 DC-3s; Bruning Aviation, Springfield, Mass., 3 DC-3s; Twentieth Century Air Lines, Charlotte, N. C., 3 DC-3s; General Air Cargo, Portland, Ore., 2 DC-3s; Western Skyways Service, Troutdale, Ore., 1 Lockheed Lodestar;; Central Flying Service, St. Louis, 1 Lodestar; Trans-Mississippi Airways, Omaha, 2 DC-3s; Continental Charters, Miami, Fal., 2 DC-3s.

Carriers which had applied for but not yet received letters of registration under 292.1 included:

Caribe Airways, Puerto Rico, 4 DC-3s, 1 DC-4; Eagle Air Freight, Burbank, Cal., 3 DC-3s; Missouri Airways, St. Louis, 1 DC-3; Capitol Airways, Nashville, Tenn., 1 Lockheed Lodestar; Trans-Alaskan Airlines, Anchorage, 1 DC-3; Golden North Airways, Fairbanks, Alaska, 2 DC-3s; Southern Airways Co., Atlanta, Ga.; 1 Lodestar, 1 DC-3; Standard Air Cargo, Seattle, 1 DC-3; Rainier Air Freight Lines, Seattle, 3 DC-3s; Appalachian Flying Service, Johnson City, Tenn., 1 Lodestar; Airline Transport Carriers, Burbank, Cal., 3 DC-3s; Gulf Airways, New Orleans, 1 DC-3; U. S. Flying Services Division of U. S. Airlines, St. Petersburg, Fla., 1 Lodestar, 2 DC-3s.



REFUGE FOR COLD NOSES:

After experiencing record 40-degree-below-zero temperature last winter, Mt. McKinley Airways, uncertificated operator at Merrill Field, Anchorage, Alaska, has completed a nose hangar in anticipation of another deep freeze next January and February. One of the C-47s operated by MKA between Alaska and Washington state is shown outside the new structure. Traffic at municipally-owned Merrill field has nearly doubled over last year, with 12,530 flights (11,816 local, 205 itinerant and 509 air carrier) recorded during April, compared with 6,624 in April, 1947.

State Airlines Takes CAB Case to Court

State Airlines, Charlotte, N. C., has taken CAB's decision in the Southeastern Area Case (AVIATION NEWS, April 14) to the U. S. Court of Appeals for the District of Columbia. The carrier claims the Board denied its application and at the same time awarded some of the routes State Airlines was seeking to Piedmont Aviation, Inc., which had never requested these links.

State asserted that CABS's decision denied it the due notice and fair hearing required by law since never in the course of the Southeastern case was the company aware that Piedmont was a contender for a number of the links it received. Petitions for reconsideration of the Southeastern case are still pending before CAB.

Freight Tariffs Approved by Cab

The consolidated freight rate tariff filed last month by 19 certificated airlines has gone into effect despite the strong opposition of the Air Freight Forwarder Association (AVIATION WEEK, Aug. 4).

Previously prevailing rates, generally based on 26.5 cents a ton mile, have now fallen 25 percent to 20 cents a ton mile, with a spread ranging from 33 cents a ton mile for small packages moving short distances to 14 cents for planeloads of 16,000 lb. Two other tariffs filed by the certificated airlines also have become effective—one embracing rules and regulations for handling freight on a nationwide basis, and the other listing pickup and delivery service at more than 2,150 points in 45 states.

▶ **Blow to Forwarders**—CAB's failure to suspend the certificated airlines' rate tariff as requested by the forwarders is a hard blow to the indirect carriers. Charges contained in the new tariff are set up in such a way as to prevent the forwarders from profitably using the services of the certificated lines by consolidating small shipments into larger lots to take advantage of rate differentials.

The certificated airlines' new freight rate and pickup and delivery tariffs, together with the development of Air Cargo, Inc., as an efficient ground service organization, are long-range threats to Railway Express Agency's air express operations. New low cargo rates of both the certificated and uncertificated airlines (especially the latter) are also a definite challenge to REA's railway express business, since rail express charges have been rising steadily and are now very close to some airfreight charges.

▶ **REA Move**—With the future of its air express service over the regular airlines in doubt, REA this month asked CAB authority to ship all types of property via uncertificated cargo operators which now are obtaining temporary common carrier privileges under section 292.5 of CAB's Economic Regulations. REA has been operating as an indirect carrier in sending air express over the certificated lines under a special exemption issued by CAB in 1941.

Meanwhile, U. S. Airlines, St. Petersburg, Fla., has become the second uncertificated cargo carrier to receive a letter of registration from CAB authorizing common carrier operations until its route applications have been decided. U. S. will be permitted to serve 31 domestic points. Globe Freight Airline, Hartford, Conn., received the first letter of registration under 292.5 last month. Twentieth Century Air Lines, Charlotte, N. C., last week became the 17th carrier to file for a letter of registration under 292.5.

NWA Mail Pay Set

Northwest Airlines' temporary mail pay for services over its North Pacific route has been set by CAB. For operations from Seattle to Anchorage, Alaska, (inaugurated last September) and from Minneapolis to Anchorage (inaugurated Jan. 1) NWA will receive 59 cents a plane mile on and after Jan. 1, 1947.

For operations performed on the remainder of its Pacific link, westward of Anchorage to Tokyo, Shanghai, Manila and other points, the carrier will be paid $1.75 a plane mile on and after July 15, 1947, when service began. By comparison, Pan American Airways is receiving $1.20 a plane mile over its Central Pacific route to the Orient via Hawaii. (AVIATION NEWS, May 12).

CAB ACTION

The Civil Aeronautics Board:

• Denied petitions of Eastern Air Lines and National Airlines for reconsideration of Board's decision of May 5 which denied the two carriers' applications for routes to the Canal Zone. (Docket 525 et al.)

• Denied petitions of Eastern and Colonial Airlines for reconsideration of May 5 decision approving Pan American Airways-Panagra agreement providing for operation of Panagra Planes and crews over PAA's routes between the Canal Zone and U. S. ((Docket 2423.)

• Permitted Eastern Air Lines to inaugurate nonstop service between Newark, N. J., and New Orleans.

• Permitted Royal Dutch Air Lines (KLM) to serve New York City through Newark Airport.

• Relieved Empire Air Lines of the condition in its AM 78 feeder certificate which requires carrier to serve each point on each trip to the extent that Empire will be permitted to operate one roundtrip daily between Spokane, Wash., and Boise, Idaho, serving only Coeur D'Alene and Lewiston-Clarkston, Idaho, and Pullman, Wash.-Moscow, Idaho, as intermediate points. (Dockets 2788 and 2996.)

Canadian Report

Canada's three scheduled air carriers—Trans-Canada Air Lines, Maritime Central Airways and Canadian Pacific Airlines—experienced much the same pattern of operating results as U. S. companies during the first quarter of 1947.

Official civil aviation statistics show that the Dominion's scheduled lines, like U. S. carriers, flew more revenue plane miles during the first quarter of 1947 than in the same 1946 period, although load factors were down as available seat capacity soared and deficits were higher as expenses rose faster than revenues. Revenue passenger mileage for the three Canadian lines climbed from 35,143,274 in first quarter 1946 to 38,285,044 in first quarter 1947, but aggregate net operating deficit increased from $99,237 during the first quarter last year to $1,442,207 this year, and combined load factors skidded from around 77

PCA Loan Extended

Capital Airlines (PCA) has announced extension of its four million dollar bank loan to Nov. 1, 1947. The loan was made on Aug. 1, 1946, and became due May 1, 1947. At that time it was extended to Aug. 1 and now has been extended another three months.

CONESTOGAS MAKE COMEBACK

Flying Tiger Line, which owns only Budd stainless steel Conestoga transports still in this country, is reviving their use as cargo planes. Until recently, Tigers would have sold ships for a comparatively low price because of their high operating cost. But now carrier is keeping one Conestoga reasonably busy on a dollar-a-mile charter basis. A ramp entrance makes the ship ideal for flying race horses and, as shown above, automobiles. Line contracted to fly one and only Tucker "Torpedo" automobile from Chicago to Los Angeles, back to East Coast, and again to Los Angeles during a month of formal public presentations of new car. Fourteen Conestogas (all of this type plant extant) were purchased by Tigers from war surplus in 1945.

Laramie Accident Blamed on Pilot

The accident in which a NATS Air Transportation Service DC-3 crashed near Laramie, Wyo., airport last Oct. 17 probably was caused by the pilot's decision to maneuver his plane at a dangerously low altitude under extremely adverse weather conditions while attempting to land, a CAB report on the mishap states.

A contributing factor was the pilot's negligence in planning a flight into an area in which adverse weather conditions were forecast without making adequate provision for a suitable alternate airport, the board asserted. All 13 persons aboard the craft, bound from Oakland, Cal., to Newark, N. J., on a nonscheduled flight, were killed in the crash.

Having learned that both his destination (Cheyenne) and alternate (Denver) had lowered to below minimum safe weather conditions, and having been advised that Laramie weather was being reported below safe minimums, the pilot should have requested assistance from Laramie radio in selecting another alternate, CAB declared. Instead, the pilot elected to attempt an approach at Laramie.

"Judgment of the pilot can be questioned further because of his repeated attempts at aligning his plane with a runway at Laramie after having observed that weather conditions there were extremely adverse (visibility ½ mile, ceiling 400 ft. with snow). Inasmuch as the pilot had almost two hours' fuel aboard, it would still have been possible for him to proceed to a suitable alternate for a safe landing," according to CAB.

In attempting to keep the field in sight while circling the area at a very low altitude the pilot evidently momentarily lost control of the DC-3 by permitting it to bank excessively, and before recovery could be completed a wing tip struck the ground.

CAB Denies Bid For Free Rides

Two attempts by a Congressional committee to get blanket approval from CAB for free overseas air transportation have met with failure.

Turned down were requests of Rep. Charles Wolverton (R., N. J.), chairman of the House Interstate and Foreign Commerce Committee. He sought free transportation to points in Europe, Asia and South America for members of various subcommittees wishing to make studies abroad. Congress failed to appropriate money for the trips before adjournment.

► **Provisions Cited**—CAB stated that the Civil Aeronautics Act prohibits granting the free rides requested. The Act and the Board's Economic Regulations make provisions for free transportation of Post Office officials, airline employes and their families, and a few others, but not Congressmen.

The Economic Regulations state that any carrier desiring special permission to furnish free overseas or foreign transportation for persons not specifically mentioned in the Civil Aeronautics Act may apply to the Board for such authorization. But persons seeking free rides can not apply directly to CAB.

► **Protection Necessary**—This setup is considered necessary to protect the airlines from such abuses of free transportation as have occurred in the railroad industry. Airlines violating the ban on unauthorized free rides can be fined up to $5,000.

CAB recently instituted an investigation of tariffs filed by 17 U. S. and foreign airlines providing for free or reduced-rate transportation for group travel, tour conductors, travel agents and employes, officials and directors of other carriers. The Board felt that this provision might be unjustly discriminatory or unduly preferential. Another investigation initiated by CAB will determine whether Pan American Airways, Panagra and other carriers can give free roundtrip overseas and foreign air transportation to exchange university students between Latin America and the U. S.

UAL Survey

Approximately one-fourth of the passengers riding United Air Lines planes during the period of a recent survey were "first flighters," of whom nearly one-third were women.

Further breakdown of UAL's questionnaires showed that 75 percent of the passengers were flying on business or a combination of official duties and pleasure, while 23 percent were on purely pleasure flights. The remaining 2 percent constituted emergency cases.

Of the passengers filling out questionnaires, 70 percent were men. Over half of the women taking part in the poll said they were on business trips. Age brackets of the travelers: 79 percent over 30 years old; 48 percent over 40, and 24 percent above 50. Fifty-eight percent reported their income was in excess of $5,000.

Immigration by Air

Transocean Air Lines has begun work on its contract with the Province of Ontario to fly 7,000 British immigrants to Canada to help relieve a critical manpower shortage in the Dominion (AVIATION NEWS, June 30). First TAL C-54 operating under the arrangement landed near Toronto, Ont., last week with 38 passengers aboard.

CAB Denies Petitions

CAB has issued a supplemental opinion in the North Central Area case denying petitions for reconsideration of its decision.

Peruvian Carrier Admitted to U. S.

Peruvian International Airways has won a foreign air carrier permit from CAB over the protests of U. S. carriers who argued that PIA is in reality not a Peruvian line but a company promoted and controlled by American and Canadian citizens.

With Member Clarence Young dissenting, CAB authorized PIA to operate between Lima, Peru, and Montreal via Balboa, Canal Zone; Panama City, Panama; Havana, Cuba; Washington, D. C., and New York. Peruvian International is already operating its DC-4s between Lima and Havana. It hopes to inaugurate service to the U. S. and Canada with two round trips weekly by fall, later increasing schedules to one flight daily.

▶ **Top Officials**—President and general manager of Peruvian international is Harold L. George, formerly lieutenant general in charge of the U. S. Army's Air Transport Command. H. S. Hansell, Jr., formerly commanding general of ATC's Atlantic Division, is vice president in charge of operations. Active in PIA's organization, and now a director of the line, is C. M. Keys, formerly president and chairman of TWA, president of Curtiss-Wright Corp., and president of North American Aviation, Inc.

According to the Peruvian government, PIA is owned 40½ percent by Canadians, 32 percent by Peruvians and 27½ percent by Americans. The carrier's board of directors consists of four Canadians, three Americans, three Peruvians and a native Italian living in Peru.

▶ **Provision Added**—Under the terms of a bilateral air transport agreement between the U. S. and Peru signed last December, the U. S. was given the right to deny a foreign air carrier permit to a company designated by the Peruvian government if substantial ownership and effective control of the airline was not vested in Peruvian citizens. However, at Peru's request, the American State Department also agreed that the U. S. would admit, under the air transport pact, an airline owned at least 30 percent by Peruvians and the remainder by citizens of the U. S. and Canada if within ten years 51 percent of the ownership passes to Peruvian citizens.

In his dissent, CAB Member Young expressed doubt that even 30 percent of PIA's stock is actually held by Peruvians. He said further it is possible that Canadians might obtain effective control of PIA.

Colonial Airlines, which led the opposition to PIA's request for a foreign air carrier permit, did so on several grounds. In addition to questioning PIA's ownership and fitness, Colonial contended that traffic requirements did not justify the intermediate stops requested. Colonial expressed fear that PIA might compete unfairly with U. S. carriers by offering shuttle service between Washington and/or New York and Montreal and between Washington and/or New York and Havana or the Canal Zone.

SHORTLINES

▶ **American**—Has trained more than 900 pilots at its Ardmore, Okla., base during the past year. With a staff of 175 employes, Ardmore is handling about 135 students a month, including, besides pilots, flight dispatchers, mechanics, stewardesses and agents. Pilot training currently is concentrated on transition from DC-4s to DC-6s.

▶ **British European Airways**—Reports scheduled flights nearly trebled between February and May. Greatest expansion was on the English Division, where trips increased from 457 to 1,775 weekly, up 290 percent. Flights on BEA's Continental Division, which connects England with European Capitals, rose from 143 to 188 weekly, up 33 percent, in the same period. . . . Carrier soon will receive three Sikorsky and two Bell Helicopters.

▶ **Colonial**—Is scheduling 16 flights weekly between New York and Bermuda and four weekly between Washington and Bermuda. . . . Service to Malone, N. Y., was slated to begin this week.

▶ **Eastern**—Set new commercial speed records between New York and New Orleans recently when one of its 60-passenger Constellations made the southbound run in 3 hr. 52 min. and the return trip in 3 hr. 34 min. Carrier has opened regular 4 hr. nonstop service between the two points.

▶ **National**—Inaugurates its "reservamatic" system this week. NAL states it will permit instantaneous confirmation of space requests on any flight between any points on its system regardless of which of its 29 stations receives the call.

▶ **Northwest**—Is flying three roundtrips weekly over its northern route to the Orient.

▶ **Pan American**—Has signed an interline freight agreement with Eastern Air Lines. . . . Regular flights from New York to Damascus, Syria, have been inaugurated.

▶ **Southwest**—Was slated to begin daily roundtrips between San Francisco and Clear Lake, Cal., last week. . . . Carrier has reinstituted service to Coalinga, Cal.

▶ **Philippine Air Lines**—Has opened a Southern California district traffic and sales office in Los Angeles.

▶ **United**—Reports it is now serving more than one-fourth of the U. S. population. Approximately 39,500,000 persons live within a 25-mile radius of the 70 cities which are stops on UAL's system. . . . Carrier trimmed 15 minutes from eastbound and 30 minutes from westbound schedules on its Hawaiian run this month. . . . New ticket office has been opened at 1 Wall St., New York.

EAL Sues Government Over Two Collisions

Eastern Air Lines has filed two civil actions against the Federal Government asking $132,500 damages for collisions which occurred between EAL and Army aircraft.

Largest suit, for $125,000, is the result of a collision July 12, 1945, between an Army A-26 and an Eastern DC-3 near Florence, S. C. The other action, for $7,500, involved a mishap Jan. 23, 1945, at the Nashville, Tenn., airport. In both cases, EAL asserts that the Army planes were "carelessly and negligently" operated.

Responsibility for the Florence, S. C., collision, in which one DC-3 passenger and two occupants of the A-26 were killed, was placed equally on the EAL and Army pilots by a CAB accident report. The DC-3 captain was eight miles off the airway, and the military pilot was practicing turns in an undesignated area. Nobody was hurt in the Nashville accident, which occurred when an Army plane ran into the EAL craft on the ground.

KLM Permit Extended

Foreign air carrier permit of KLM, Royal Dutch Airlines, has been amended by CAB to permit the carrier to continue its Amsterdam-New York services another year.

Airlines Promoting Vacations by Plane

Special excursions to attract the vacationist are being offered in unprecedented numbers this summer by the scheduled airlines, with the "play now, pay later" formula increasingly popular. Latest developments include Mid-Continent Airlines' "Budgetour" and Southwest Airways' reduced rates for circle trips over its Northern California feeder routes.

MCA's "Budgetour" is described as a deluxe air vacation from the Twin Cities to California on the easy payment plan. Tourists fly Mid-Continent to Kansas City, connecting there for the run to Los Angeles via TWA. The trip, which carries a 120-day return limit, includes sightseeing tours of movie studios and a drink and supper at a Hollywood night club.

▶ **Credit Feature**—Well-heeled vacationists can pay $223.58 cash in advance for the California "Budgetour." Others have their choice of paying over 15, 12 or 6-month periods, with the total tariff slightly higher on the installment plan.

The easy-payment feature of the California "Budgetour" extends to all air vacations originating over MCA's routes out of Minneapolis-St. Paul, regardless of destination or connecting airline. While at present Mid-Continent's vacation-on-credit plan is available only to residents of the Twin City area, the carrier may set up the same financing machinery at other points on its system.

▶ **Circle Tour**—Southwest Airways has established a special $25 excursion fare for its Northern California circle trip to encourage vacation travel "over the most scenic airline routes in the nation." The circle tour plan permits passengers to start their trip from any city on Southwest's northern routes and fly in either direction—north via Medford, Ore., or south via San Francisco—returning the other way.

Both Southwest's northern coastal segment and its inland link terminate at Medford and San Francisco, thus forming the loop. Stopovers will be allowed at all intermediate points, and the excursion rate represents a saving of up to 26 percent over regular point-to-point fares.

▶ **Camping Trip**—Meanwhile, Braniff Airways is offering a complete three-day all-expense camping tour out of Denver into the mountains for $39.

Other vacation-by-air promotions this summer have included American Overseas Airlines' fishing and hunting excursions to Newfoundland, Chicago & Southern's 16-day tours to Havana, and Capital Airlines' air-water cruises from Washington to the Great Lakes.

Shuttle Halted

The nation's first scheduled helicopter taxi service—operated by Skyway Corp. between a rooftop in downtown Boston and Logan International Airport—has been suspended. Started late in April with three-passenger Sikorsky S-51s, the service was cut from 70 to 14 trips daily early in June because of protests against noise created by the rooftop takeoffs and landings. Inability to achieve a profitable load factor and management difficulties were contributing factors in the decision to discontinue the three-mile shuttle flights.

AIR FERRY BACKERS

Competition for United Air Lines on the short run from the California coast to Avalon, Santa Catalina Island resort city, is being provided by Amphibian Air Transport, Inc. Organizers of the line, which uses surplus 10-passenger Grumman amphibians, are Ken F. Brown, right, president, and C. E. Hunsinger, vice president. Charging the same fare as United, AAT lands in Avalon harbor on its route from Long Beach Airport and Lockheed Air Terminal, Burbank. UAL flies DC-3s from Los Angeles to Catalina's mountain top airport, nine miles and a $1 limousine ride from Avalon.

City Loses Air Service Due to Inadequate Field

A fate which is in prospect for a number of communities having airports too small to accommodate the airlines' postwar equipment has befallen New Bern, N. C.

CAB has given National Airlines permission to suspend service at the city of 12,000 population until such time as an airport suitable for DC-4 equipment is available. In requesting the suspension, NAL told the Board it was discontinuing all Lockheed Lodestar operations north of Jacksonville, Fla., adding that eventually it would be using DC-4s exclusively on its entire system. To continue duplicating Lodestar schedules for the benefit of New Bern—only point among 26 served by NAL which cannot accommodate DC-4s—would cost $13,000 monthly, the carrier asserted.

Jackson Elected Director of AOA

Election of James A. Jackson to American Overseas Airlines' board of directors and appointment of A. Di Pasquale as American Airlines' director of labor relations have been announced by the two carriers.

Jackson is a former president of the Continental Bank and Trust Co. and was vice president of the National City Bank of New York. Di Pasquale, who succeeds the late Lee J. Robinson, was a labor representative and contract negotiator for the Great Atlantic & Pacific Tea Co. before joining American.

Other personnel developments:

• **Braniff**—R. H. Burck, southern region traffic manager, has assumed additional duties as coordinator of state affairs for the carrier.

• **CAB**—Sydney B. Smith has been named chief of the foreign air transport division of the Board's Economic Bureau.

• **California Eastern**—Robert E. Caskey, formerly cargo sales manager for United Air lines at Chicago and Los Angeles, has been appointed assistant to the airfreight carrier's vice president in charge of sales.

• **Continental**—George D. Rash has been promoted to traffic manager.

• **Florida Airways**—Frank H. Patterson has been named superintendent of stations and R. E. Brumbaugh has become traveling sales representative.

• **Independent Airfreight Association** — Elected following officers at a recent meeting of trustees: Earl F. Slick, Slick Airways, president; Robert W. Prescott, Flying Tiger Line, H. R. Playford, U. S. Airlines, C. F. Willis, Jr., Willis Air Service, and J. J. O'Brien, California Eastern Airways, vice president; Col. L. H. Brittin, executive director and treasurer; and H. Struve Hensel, general counsel.

• **National**—Ruth M. Blackburn has become assistant chief stewardess.

• **United**—W. B. Frank has been named chief of cargo sales in Southern California succeeding R. E. Caskey.

Swiss Seek Route

Another European country, Switzerland, is preparing to enter its national airline in the already hot contest for Trans-atlantic traffic. Swissair (Swiss Air Transport Co., Ltd.) has asked CAB for a foreign air carrier permit to fly to New York over a northern route via points in Eire and Newfoundland and over a second link by way of the Azores.

CAB SCHEDULE

Aug. 11. Hearing on All-American Aviation's mail rate case . (Docket 1906.)
Sept. 2. Hearing in Latin American Certificate Amendment cases of Panagra and Braniff. (Dockets 2527 and 2622.)
Sept. 2. Hearing on Pan American Airways' application for route consolidations and extensions in Latin America. (Docket 2811.)
Sept. 8. Hearing on Mid-Continent's proposed service between Minot, N. D., and Regina, Saskatchewan. (Docket 628.)
Sept. 8. Hearing in Chicago Helicopter's Service case. Extended from Aug. 18 (Docket 2811.)
Sept. 8. Hearing in case involving additional service in California-Nevada area. Postponed from Aug. 25. (Docket 2109 et al.)
Sept. 10. Hearing on CAB's investigation of TWA-Hughes Tool Co. relationships. (Docket 2796.)
Sept. 29. Hearing on Mid-Continent's application for alternate Kansas City-New Orleans Route. (Docket 1956.)

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P-1430, Aviation Week
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

(Continued from page 60)

AIRLINE TRANSPORT Pilot over 6000 hours. All ratings on twin and 4 engine equipment. 12 years experience. Captain on domestic and international airlines. Qualified for any type of pilots position. Best of references. No accidents. Married, reliable, age 37. Desires position as company pilot. PW-1461, Aviation Week, 330 West 42nd St., New York 18, N. Y.

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(Continued on opposite page)

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(Continued from opposite page)

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Good used Continental-powered or P&W powered twin-engine Beechcraft. State general condition, special equipment, seating arrangement, total time on airplane, total hours on engines, number hours since major overhaul, conditions of sale and price. Give all information first letter. W-1451, Aviation Week, 330 W. 42nd St., New York 18, N. Y.

OFFICIAL PROPOSAL

Bids: August 19, 1947 (100)

Leasing and Operating of Airport

Sealed bids for the leasing and operating of a public airport known as Linden Airport, formerly known as the Eastern Aircraft Airport at Linden, N. J., located at U. S. Route 1, State Highway Route 25, and Stiles Street in the City of Linden, Union County, New Jersey, will be received by the Governing Body of the City of Linden at the City Hall, Wood Avenue and Blancke Street, Linden, New Jersey, until 9 P. M. Eastern Daylight Saving Time on Tuesday, the 19th day of August, 1947, and then publicly opened and read. Bidders may obtain "Information for Bidders and Specifications" and additional information from City Clerk, City Hall, Linden, N. J.

Each bidder must deposit with his Bid a certified check made payable to the order of the City of Linden in the amount of $5,000.00, subject to the conditions provided in the "Information for Bidders and Specifications."

No bidder may withdraw his bid within forty-five (45) days after the actual date of the opening thereof. The right is reserved to reject any or all bids, to waive any informalities in the bids, and to accept the bid deemed most favorable to the interests of the City of Linden.

By order of the Common Council of the City of Linden. Thomas J. Wieser
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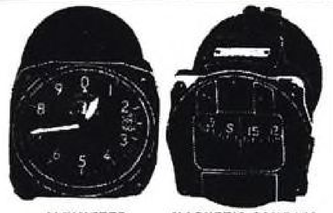
W-1471, Aviation Week
330 West 42nd St., New York 18, N. Y.



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AVIATION WEEK—AUGUST 11, 1947

SEARCHLIGHT SECTION

(Classified Advertising)

EDITORIAL

Shop Talk by an Editor

With apologies to those who prefer regular editorials, we shall restrict this page to shop talk today on several current matters which are probably more important to the editor than the reader, but we must have our say to clear the air.

Official Denials—Every live publication worth its salt publishes important information first with a high degree of accuracy. No publication, of course, is perfect. So the goal of the staff is to achieve as near 100 percent accuracy as possible. A magazine like AVIATION WEEK is concerned with reporting of facts and of industry opinions and trends. You would imagine that a magazine with an excellent accuracy ratio would be free of criticism, relatively. That is not the case. It may be castigated for hitting the mark too often.

AVIATION NEWS on March 3 reported discussions going on between high officials of TWA and Pan American "looking toward consolidation of the TWA and PAA systems." A newsletter greeted this story with the comment that although Howard Hughes and Juan Trippe had had a meeting the "speculative story in an aviation weekly . . . . is not given credence in informed circles." But Mr. Hughes the other day gave the story considerable credence by verifying the information.

The AVIATION NEWS story, which was widely used by the daily newspapers, was denied very emphatically by a TWA vice president in Kansas City, and the company's house organ, as we recall, carried a rather scathing denunciation of AVIATION NEWS, our predecessor journal.

The official told company employes that such reports were "erroneous and irresponsible" and "without authentic foundation." We have decided since that Mr. John Collings may not have known who Mr. Hughes talked with. In which case Mr. Collings may have been sincere. But it does seem to show that companies which issue strong official denials of news stories later proved correct are hoodwinking the public and making it more difficult for anyone to believe honest denials thereafter.

Industry Opinion—Every industry magazine such as AVIATION WEEK, in addition to covering the detailed news, attempts to assay trends and opinions in the industries it serves. It does this to the best of its staff's ability. In our July 28 issue we reported in The Aviation Week page the consensus of U. S. air transport officials interviewed on the relative merits of certain aspects of the various foreign-owned airlines. Two airlines protested, as is their right, and we are pleased to offer their side of the matter in this issue.

Censorship and What Is Confidential—What is confidential matter? It depends on the person you ask, and when you ask him. There is not an issue of AVIATION WEEK or any other publication which probably does not print many things which someone considers confidential. Otherwise there would be no press. The press is under no censorship law in peacetime. So it is no particular surprise to us that AVIATION WEEK has been accused directly and indirectly of publishing confidential information. Who doesn't?

The director of public relations of a large company wrote the business department of AVIATION WEEK the other day protesting an Industry Observer item on a new military airplane. He wrote "to say that we object to the publication of that paragraph is putting it mildly. The status of the aircraft in question, as your editor and his staff certainly must know, is highly confidential. Nevertheless, so far as we can ascertain, no effort was made before publication to check on the story or the confidential nature of the subject. . . . Frankly I think such flagrant contempt for the rules is inexcusable . . ." etc.

In the first place, the editors would have appreciated it if the letter had been sent to the people who write this magazine, instead of to the advertising department. No check was made with the company in advance because under such circumstances the company is not permitted to comment. The reference to rules is baffling because as a U. S. government contractor this company has its own rules, which are also those of the Army and Navy and none other.

In peace time military and naval people place their own classifications of secret, confidential, restricted, and others, on their own business. These labels govern what Army and Navy and other Government departments and their personnel may and may not talk about publicly. As far as those Government departments are concerned, those labels are binding. Government contractors are under essentially the same restrictions.

Any realist in these peacetime United States knows that the confidential label is so threadbare in the Government that it is slapped on virtually everything that has not yet been made the subject of a press release, including lists of officer promotions. It is rather obvious that a promotion list cannot endanger the security of the United States. What can? There the experts all disagree.

No one has struck at the heart of the censorship problem more convincingly than Gill Robb Wilson, valiant World War I flyer, former preacher, author, and sage observer of life. "How strong is America in the air?" he asked the other day in his New York Herald Tribune column. "Everyone knows except the American people. The Russians know in detail. So do the British, and the French and the Swedes. So does every able intelligence system of every nation on earth. Everybody knows except the people who could do something about it, if they knew."

And why do they not know? That story, Gill Wilson says, originates away back yonder with the Old World idea that "what goes on in the military establishment is none of the civilians' damn business." Against that idea, he says, our founding fathers set their faces when they required that the Secretaries of War and Navy be civilians.

"Nevertheless," Wilson adds "there has been a constant struggle within the military forces against men who did not understand that power—all power—in a democracy stems from the people . . . Historically War and Navy with deliberate purpose have not informed the people on everything that could be told safely. This in spite of the fact that such knowledge was unquestionably in the hands of the intelligence systems of other nations."

Gill Wilson decides now is a good psychological time for the military establishment in all branches to review the entire problem of public relations and military intelligence. AVIATION WEEK agrees wholeheartedly.

In the meantime, despite those wire tap clicks on two of our four Washington phone lines, AVIATION WEEK hopes to continue to inform the people, and aviation people specifically, on the significant developments which can mean so much to the country, and perhaps to the rest of the world.

ROBERT H. WOOD

"The boss's airplane saved us a shutdown today"

The stockpile of lead at the Bowers Battery and Spark Plug Company, Reading, Pa., was just about gone—and a lot of jobs would go with it. Scrap lead was to be had only if someone could get to a war surplus sale and inspect, bid and buy—in a matter of hours.

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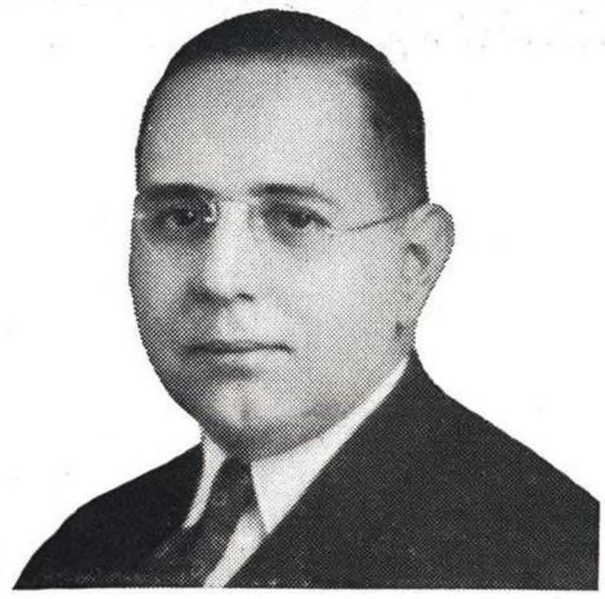

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