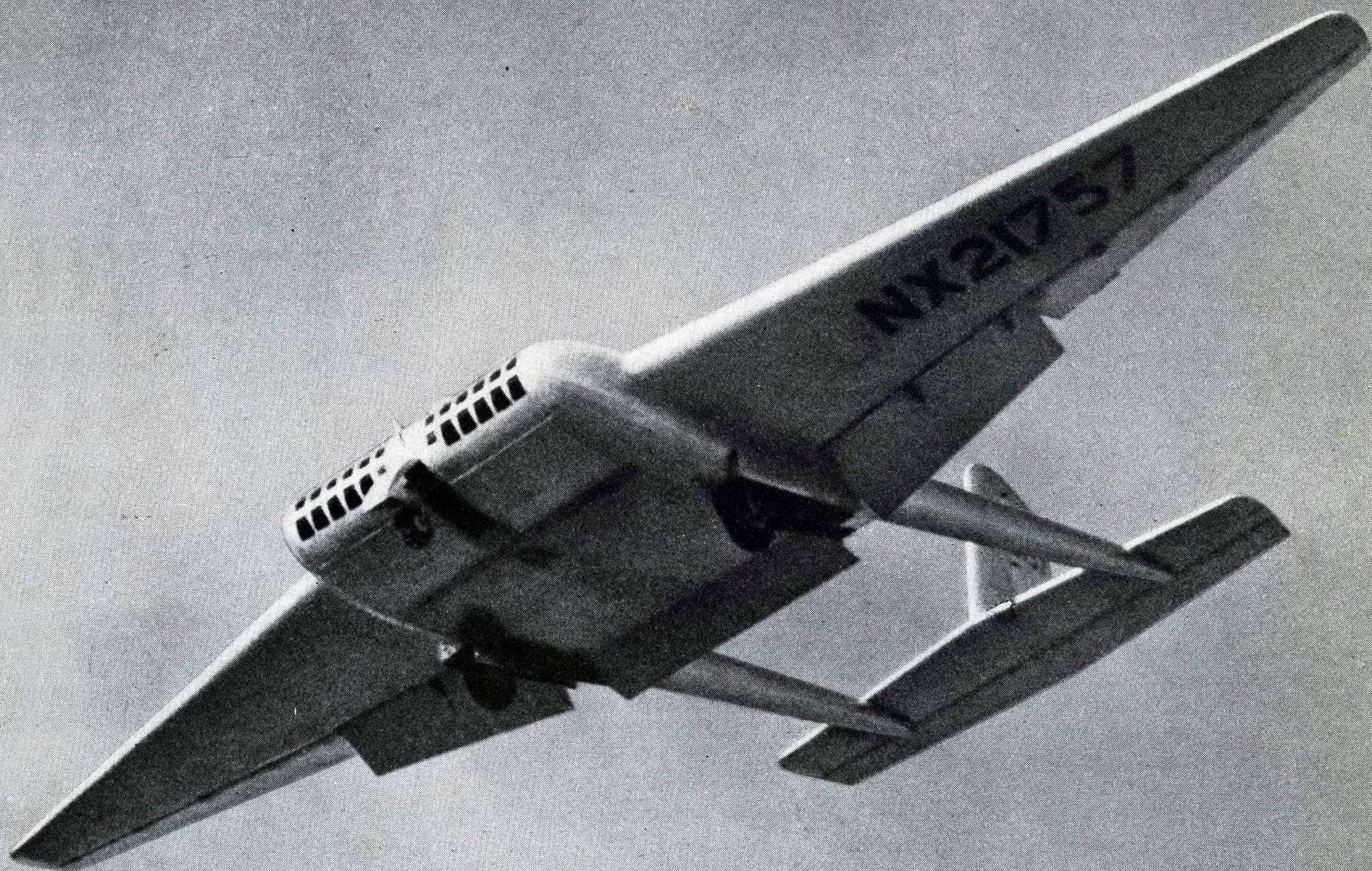


Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

NOVEMBER 13, 1944



New Experimental Army Glider: *This unusual flight view shows the CG-16, a glider of experimental design having a large payload but limited cargo space. It resulted as part of the study which has been made to determine the limit in size for tactical usefulness of gliders and until now has been on the restricted list.*

Technical Rules Accord Looms as First Fruit of Parley

Political and economic fencing centers around Anglo-Canadian plan for international authority and U. S. bilateral agreement proposal....Page 7

Magnitude of Scrap Problem Reveals Need for Plan

Seven areas already set up by Army for distribution of scrap and excess aluminum alone and four more are to be activated.....Page 16

Federal Works Agency Takes Hand in Port Planning

White House, Budget Bureau and Army and Navy also expected to play important roles in development of fields throughout country....Page 27

Standard & Poor's Sees "Big 4" Dominating Airlines

Smaller units, such as PCA, National, Northwest and Northeast also are "destined for an expanded role," investment advisory group says.....Page 51

Navy Expected to Extend Use of Incentive Contracts

Only four for aircraft have been completed but saving of \$208,000,000 and \$37,000,000 extra profits by companies make wider use likely.....Page 47

Liberalize Schedule, Non-Schedule Flying Insurance

Full coverage allowed for first time without payment of extra premium under new provision put into effect by Conn. General.....Page 10

Micarta antenna masts to
"HIT THE BREEZE"
 at 600 mph!

That thin, long mast rides outside in the fury of a 600 mph gale. It is made of Micarta—the light, tough aviation plastic. Requirements for antenna mast performance are exacting. The mast must withstand extremes of air pressure and temperature. It must be rigid, hold the antenna taut without yield or wobbling. Because Micarta combines maximum strength with light weight, it is now used in the antenna masts of Navy Grumman planes.

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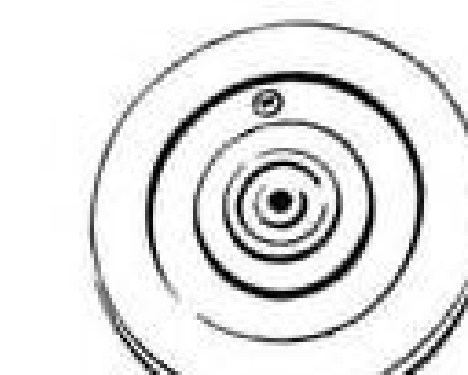
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OFFICES EVERYWHERE

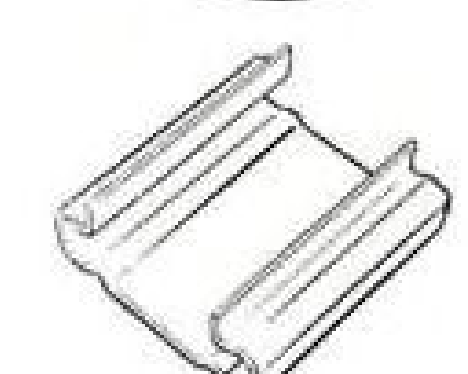


PLANTS IN 25 CITIES

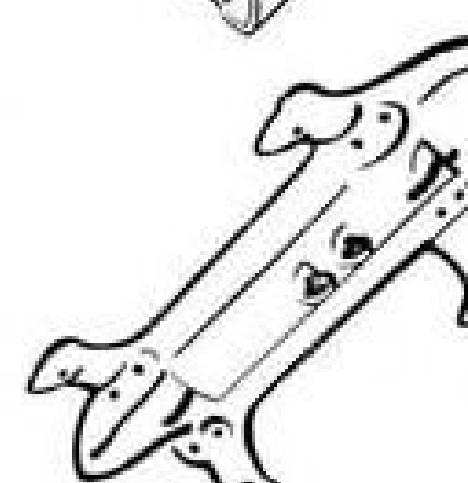
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PULLEYS of Micarta extend life of both pulley and cable. Millions are now in use in Allied Aircraft.



AMMUNITION FEED CHUTES made of the new Micarta "444" guide bullets accurately into firing position. It is thin, light, strong, easily formed with inexpensive dies.



BOMB RACKS have been successfully molded with Micarta . . . furnish an excellent example of Micarta's strength and the skill of Westinghouse engineers in intricate molding assignments.

Washington Observer

TOKYO JITTERS — Even reconnaissance flights have their effect on Japan. Not only is time lost in factories at a time when high capacity output is held vital because of recent losses, but defenses logically must be shifted after every intruder flight, and inevitably the panic potential will go up.

NAMING A TROPHY—The erstwhile Collier Trophy will emerge at its next presentation in full nomenclature as the Robert F. Collier trophy, authoritative sources report. Originally designated by the donor, Robert F. Collier, as the Aero Club trophy, the massive award has been presented annually to the individual or organization making the foremost contribution to aviation in the preceding year. Since NAA took over many of the Aero Club functions years ago, the trophy has been called merely the Collier trophy. Using the donor's full name has been advocated by "elder statesmen" of aviation who have felt that Mr. Collier's contribution to advancement of aeronautics as an individual is not being sufficiently recognized.

NO COST CONTRACT SETTLEMENT — It appears now that the no-cost contract settlement question has been settled by a ruling of the Bureau of Internal Revenue, which has agreed that if a war contractor holding a fixed-price contract wishes to waive claim for compensation when his contract is terminated he may deduct his loss from his income or excess profits tax. The National Association of Manufacturers which went into this problem expressed the consensus when it said that just

what this will mean to industry was a matter of considerable speculation, but that it couldn't hurt and that it might help to some extent.

CONTRACT TERMINATION — Criticism voiced in some aircraft manufacturing circles that the industry's viewpoint on termination procedure—that is, favoring negotiation rather than formula—has had some repercussions on official Washington circles with emphasis by the AAF Technical Service Command that more than 3,000 "carefully selected officers" are being trained to handle the complicated details of contract termination quickly and fairly. The Air Technical Service Command now has first priority on officers for this job.

INSURANCE RATES—Elimination of extra-premium life insurance rates for airline passengers and lowering of aviation occupational premiums by Connecticut General Life Insurance Co., detailed in this issue of *Aviation News*, is only the first in a series of insurance revisions to be expected. Aviation has earned recognition, and it will be pleasing to the industry that a company with long aviation experience has made the first sound steps in premium reductions.

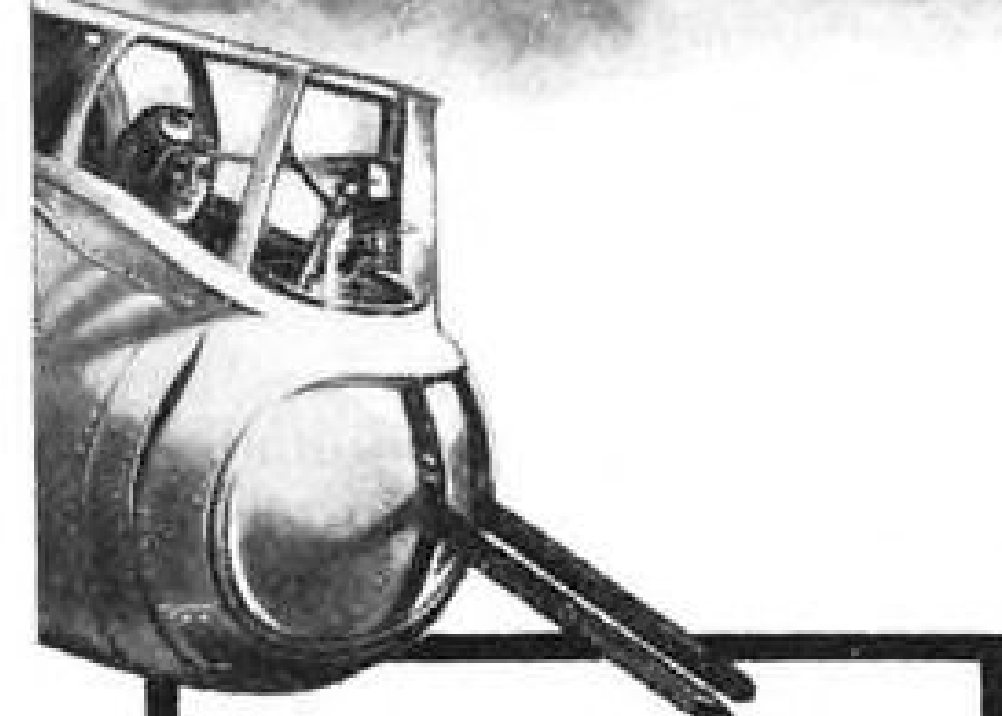
EXIT CLAYTON—Filing a voluminous report by Surplus Property Administrator W. L. Clayton last week presaged early appointment of the new Surplus Property Board. Clayton has been staying on until after election when President Roosevelt could name a board with-

Martin PBM Mariner in jet assisted take-off at Pacific base.



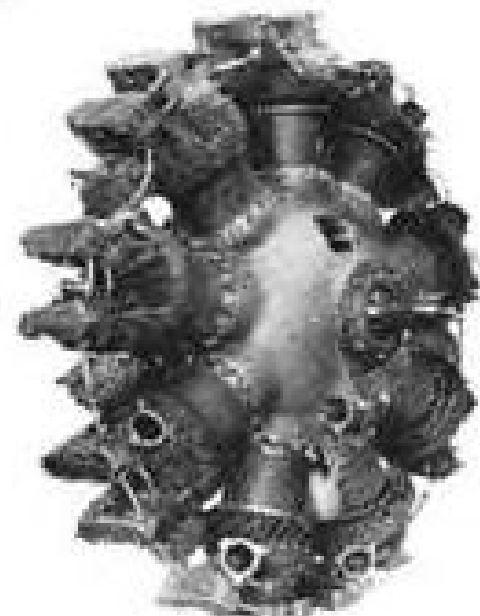


THE SCORPION
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CONTENTS PAGE

Washington Observer.....3
Headline News Section.....7
Private Flying.....27
Air War.....38
Personnel.....40
Financial.....44
Production.....47
Transport.....51
Editorial.....62

THE PHOTOS

L. P. Clarke, Cover; U. S. Navy, 3, 50; Curtiss-Wright Corp., 14; The Glenn L. Martin Co., 18; British Information Service, 23; Parks Air College, 30; Boeing Aircraft Co., 47; Official Canadian Photo, 48; *The Aeroplane*, 51; International News Photos, 52; Pan American Airways, 55; Staff Photo, 57; *Flight*, 58; George Dorrill, 59; Hank Tenny, 60.

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Advertisers Index

Aircraft & Diesel Equipment Corp..... 55
Beech Aircraft Corp..... 46
Chandler-Evans Corp..... 22
Cleveland Pneumatic Tool Co..... 43
Clifford Manufacturing Co..... 26
Consolidated Vultee Aircraft Corp..... 56
Darnell Corporation, Ltd..... 56
Eagle Parachute Corp..... 45
Edo Aircraft Corp..... 39, 49
Fedders Mfg. Co., Inc..... 57
Firestone Tire & Rubber Co..... 24, 25
General Electric Co..... 4th cover
Goodrich Company, The B. F..... 15
Grinnell Company, Inc..... 53
Guiberson Diesel Engine Co..... 4
Gulf Oil Corp..... 37
Harris Products Co..... 59
Kellert Aircraft Corp..... 6
Lockheed Aircraft Corp..... 31, 32, 33, 34
McGraw-Hill Book Co..... 54
Mellflex Products Co..... 52
National Airlines..... 17
Owens-Corning Fiberglas Corp..... 41
Sensenich Brothers..... 58
Sperry Gyroscope Co., The..... 19
Timber Structures, Inc..... 29
Wadsworth Warch Case Co., Inc., The..... 21
Westinghouse Elec. & Mfg. Co..... 2nd & 3rd covers

out campaign repercussions of any kind. The report detailed history of Clayton's agency, which functioned under Executive Order 9425. The administrator had a sound organization with only 46 direct employees. The new board's organization is virtually certain to expand considerably, in no small part due to the creaking machinery set up in the SPB law. A great many able men will leave with Clayton, others may stay to see what happens.

NEW APPOINTMENTS—There is a feeling in Washington that President Roosevelt, with his great sense of history and the niche he will fill in that history, may confound his enemies and some of his friends by casting aside many political and regional considerations to put top-notch men in office to handle liquidation of the war, both human and material. He won't be running for President for the next four years and that is something to remember in all his actions from today on. But he will have trouble getting the good men.

Industry Observer

Rising interest in Latin American trade possibilities is evident by plane makers. Douglas' export authority, Irving Taylor, has returned from a two-months tour; Henry Knight, Washington representative, is on a three-months inspection throughout South America for several companies, and Alfredo de los Rios is somewhere south of the border for Fairchild.

Inter-American Escadrille's recent questionnaire to South American aviation clubs asking data on demand for personal aircraft brought urgent requests for almost 100 planes, especially Pipers and Aeroncas.

The Navy has ruled out naming its version of the B-24 the Sea Liberator, as suggested by the manufacturer, and names considered now include the Viking and the Crusader.

Primary trainer production for the nation has dwindled to one plant, Boeing's at Wichita, which produced 45 *Kaydets* in a recent month. Liaison (*Grasshopper*) manufacture is still under way by two companies, Stinson Division of Convair, with its L-5 *Sentinel*, and Piper's L-4, for total monthly output of about 300.

A standard airport lease is in preparation by officials of the air transport industry.

Goodyear officials report they are losing enthusiasm in the post-war private plane picture.

The airlines' airport operation and management study will be undertaken by Harvard School of Business, which will send out a staff of field investigators.

A U. S. Conference of Mayors through Paul Better's is promoting establishment of a short course for airport managers at one or more universities.

Phillip Andrews Publishing Co. is contemplating a new airline timetable publication of pocket size which would be distributed free from travel literature racks in hotels and stations.

JET SECRECY—Official circles in Washington are beginning to feel the fuming of American manufacturers building jet-propulsion fighters who have a strong feeling that the British are responsible for the perpetuation of the Army's prolonged secrecy on this job. They believe, according to current Washington reports, that they are accurate in assuming that Britain wants no jet publicity that will show the scope of American progress and possibly overshadow Britain's own jet achievements.

OTHERS IN ADDITION TO BELL—Aside from the Bell project, and detracting nothing from their work, there has been no disclosure publicly of other American manufacturers producing jet planes of even higher performance than the Airacomet, even though production is well under way and deliveries even are being made from public airports and in the words of one critic "in full view of spies if any, who can't conceivably have been hired for their faulty vision and unintelligence."

Aircraft industry flight engineers and CAA officials are arranging an important conference soon on flight testing technique and proposed regulation changes. Problem of fatigue loads in flight is increasingly important. A separate meeting may be held for rotary wing producers.

An influential Russian purchasing group, apparently interested in big commercial airliners, recently visited Douglas, Lockheed and Consolidated Vultee.

Little doubt now remains that Pan American's famous "Type 10" super-transport referred to in recent CAB international hearings is the Lockheed *Constitution*. Pan American officials also have had discussions with Consolidated Vultee Aircraft Corp., in connection with its giant two-deck land-plane which will be flying in 1945.

Prototype of Boeing's transport version of B-29, the *Stratocruiser*, is receiving finishing touches.

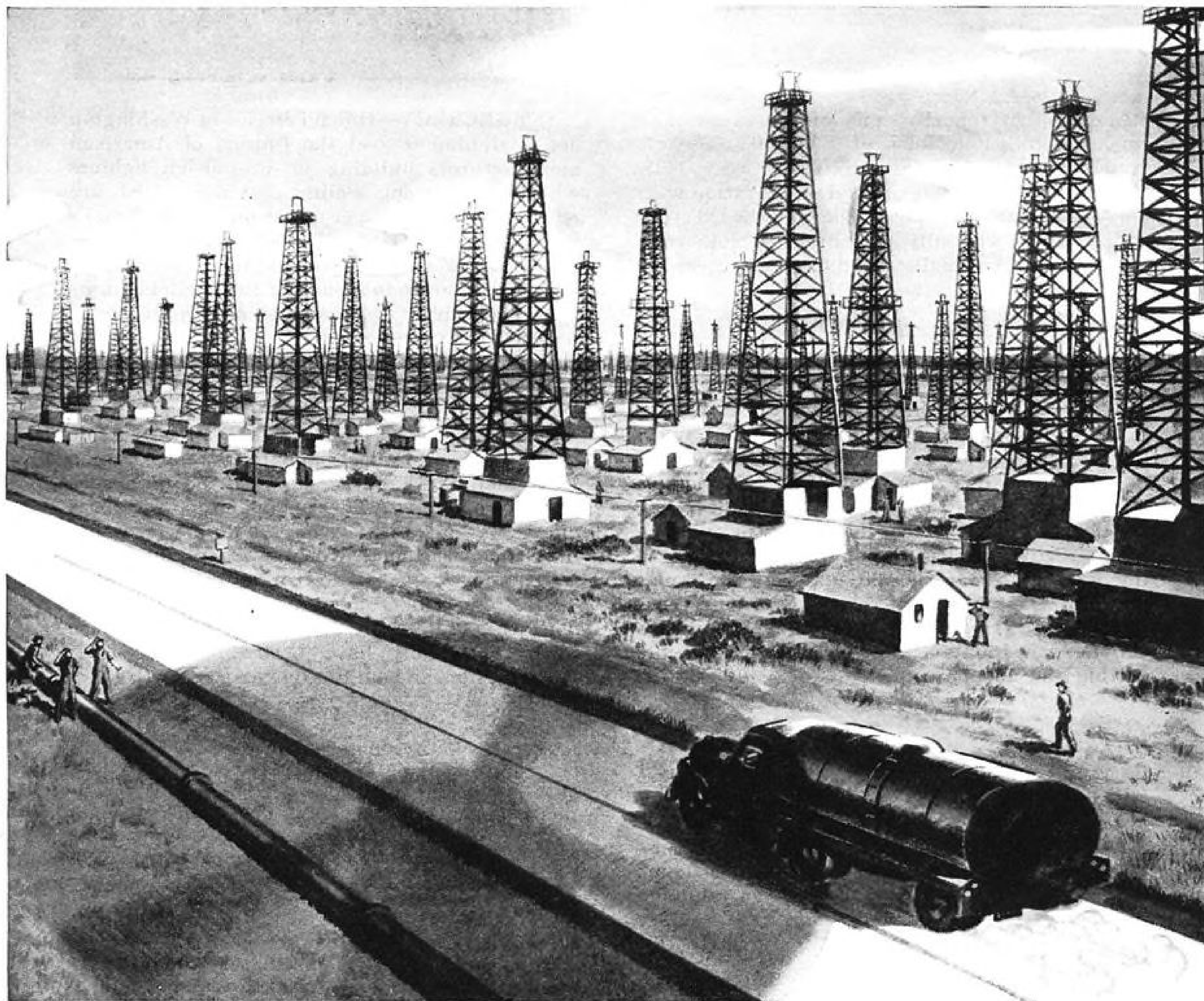
Worried by great strides being made in land-planes, boat advocates complain that the only U. S. flying boats certificated for scheduled overseas operation are out of production, the Sikorsky S-44, and Boeing's 314 *Clipper*.

Douglas officials appear to hold little hope that the Army will approve at this time its proposal reported in last week's News that a quantity of new C-47's be converted on the line for airline use, this despite the fact cost to the airlines would be considerably less per plane than converting old, surplus craft.

Airplane Technical Committee of ACCA has recommended to the Board of Governors that the Aero Chamber's name be changed to the Association of Aeronautical Manufacturers.

General Motors officials deny any interest in producing light-planes in the immediate post-war period but are continuing successful development of their two-cycle, four-cylinder liquid cooled engine described in AVIATION NEWS July 3. An experimental airframe for testing this installation may be built, however.

Lockheed is expected to release information on its new feeder airline plane shortly.



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Aviation News

McGraw-Hill Publishing Co., Inc.

VOLUME 2 • NUMBER 16

November 13, 1944



**Accord on Technical Rules Looms
As First Fruit of Chicago Parley**

Political and economic fencing centers around Anglo-Canadian plan for all-powerful international authority and U. S. proposal for bilateral agreements, confining scope of world control body to technical field.

By MERLIN MICKEL

Behind the bickering over world air policy that underlay the International Civil Aviation Conference in Chicago last week, there existed a strong likelihood that the meeting at least would reach a first multilateral agreement on technical regulation—a fundamental proposition whose adoption would mean attainment of an important initial step.

But rules for international flying have little purpose unless such flying is to be done, and the technical aspects of the conference was only one level. Another, as the meeting shook down into definite issues, was the political and economic factors, and here the question was between British and Canadian plans for an international authority with jurisdiction over routes and frequencies, and the United States proposal that such matters be arranged through ordinary bilateral agreements, confining to the technical field whatever power the international body might yield.

► **Diplomatic Fencing**—As the diplomatic give and take proceeded over the international authority question, the consensus was that the expected technical agreement, even if only the actual formation of a minimum body of rules, would be in itself a positive result of the conference if nothing more emerged. Here it was significant that the U. S. technical annexes were the ones considered, although others were submitted. Presentation of some of the proposals offered an educational problem, many of the conference delegates being non-technicians or unfamiliar through lack of experience with aviation's technological developments.

Technical annexes submitted by

American experts covered such subjects as airway facilities, rules of the air, air traffic control, airworthiness requirements, registration and identification of aircraft, aeronautical charts, log book requirements, customs procedure, meteorological considerations, and others.

► **Jockeying**—Despite the endless detail that faced technical committees in the discussion of these matters, a tougher task was at hand for other departments of the conference in the issue of the international air governing body. It appeared early in this phase of the work that if the divergent views of the U. S., the British, the Canadians, and later the Latin American bloc were to be reconciled, some one would have to yield. There were signs of jockeying, but only within two clearly delineated schools of thought.

One is the American view, whose supporters hold it would mean the building up of international aviation without restriction. Opponents contend it would lead, through unlimited free competition, to waste, subsidies and failure to serve the public interest.

The other view, on which the British claimed no major difference with the Canadians, was that division of air commerce must begin under the same conditions eventually to be imposed by an international authority and grow within that jurisdiction. Opponents of this plan labeled it as restrictive.

► **Latin American Attitude**—The Latin American group, insistent on complete air sovereignty for all nations and a "one country, one vote" stand on any international authority, drew back slightly from both these positions, but likely will

Air Sovereignty

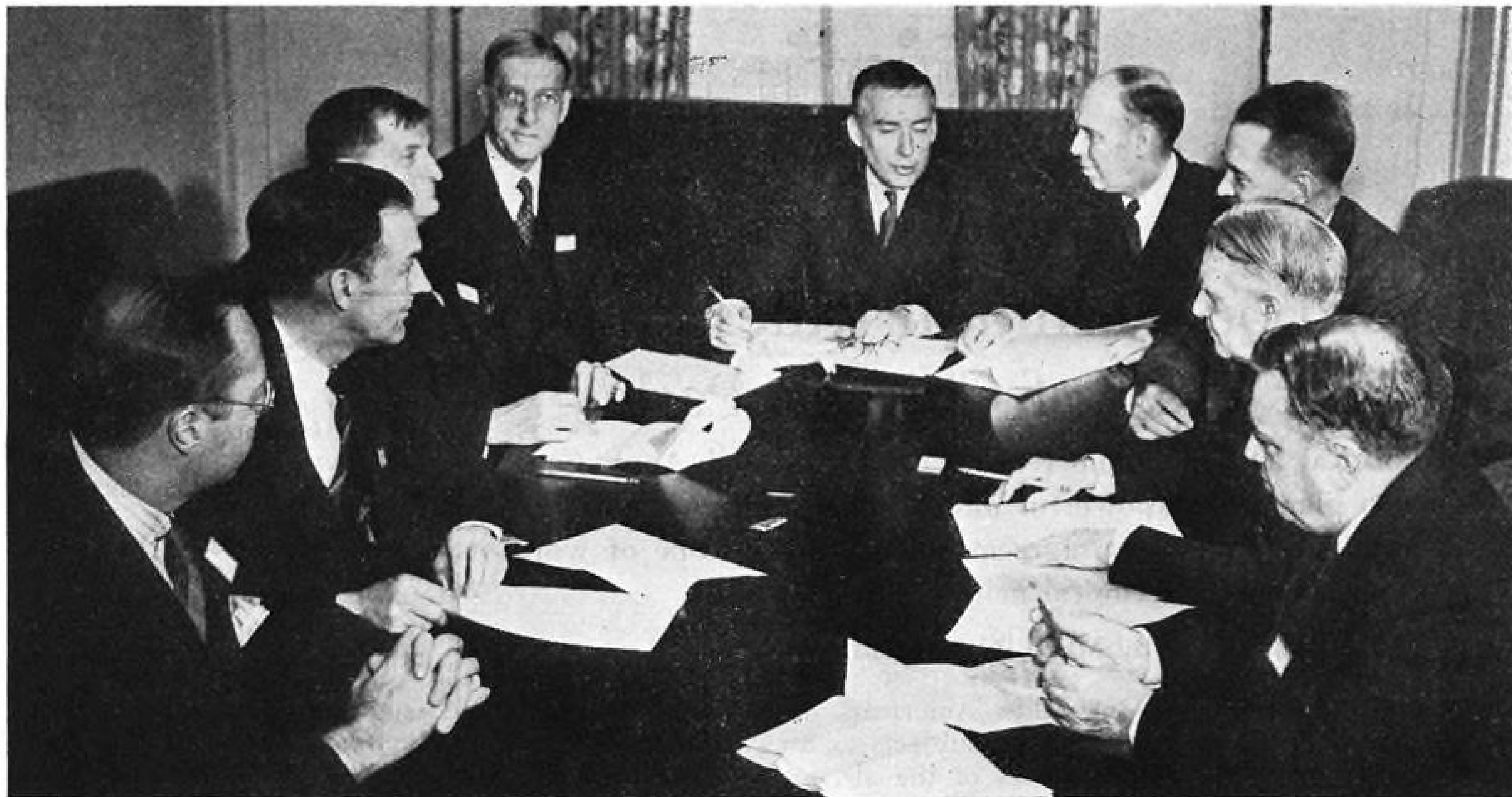
An interesting contrast lay on the viewpoint from which conferring nations at the Chicago conference considered air sovereignty. Large nations have "outgoing concern" about what other countries they can fly to, while many smaller nations are mainly interested in preservation of their right to determine what other countries' airlines shall land at their airports.

Route proposals have been made by several nations and others were to come. Among the earliest were the United States, which was first, The Netherlands, Lebanon, Switzerland and Spain, the last a general outline of regions where Spanish routes would go. Poland was expected to announce proposed routes before the week ended, predicating its North Atlantic bid on the five and a half to six million Poles in this country.

prove a major stumbling block to neither.

Committee rejection of the New Zealand-Australia plan for an international company to own aircraft and operate prescribed international trunk routes led the French to suggest that such a company might be formed to operate a single line as a test arrangement, carrying mail, cargo and passengers or, as an alternative, mail only. This proposal was out of order at the committee meeting, but a spokesman for the French delegation said it "possibly" would be presented later.

The U. S. position, as set forth early by assistant secretary of state Adolf A. Berle, Jr., chairman of the U. S. delegation and president of the conference, is that an international authority, whatever power could and should be extended to it in the purely technical field, in the economic and political realm "must be primarily consultative, fact-gathering and fact-finding," with power to bring together interested states when friction develops and suggest to



International Civil Aviation Conferees: Shown here are the United States, United Kingdom and Canadian delegations to the important Chicago conference: United States—W.A.M. Burden, Assistant Secretary of Commerce; L. Welch Pogue, chairman, Civil Aeronautics Board; Rep. Alfred Bulwinkle, Sen. Josiah Bailey, Adolf A. Berle, Jr., Assistant Secretary of State and head of the delegation; Sen. Owen Brewster, Edward P. Warner, CAB vice-chairman; Rep. Charles Wolverton and Mayor F. H. LaGuardia. Canadian delegates, left to right, C. D. Howe, Minister of Reconstruction and head of delegation; H. J. Symington, president, Trans-Canada Air Lines, delegates and J. A. Wilson, Director of Air Services, De-

partment of Transport. Missing in Canadian group is delegate R. A. C. Henry, chairman Air Transport Board. United Kingdom delegation, left to right, around the table, G. G. FitzMaurice, legal adviser, Foreign Office; W. C. G. Cribbitt, assistant under secretary, Air Ministry; Sir Arthur Street, Permanent Under Secretary, Air Ministry; Lord Swinton, Minister of Civil Aviation and chairman of delegation; Sir George London, of Government of New Foundland; J. H. Magowan, Minister, British Embassy, Washington; A. J. Walsh, Newfoundland. Missing from the picture of the United Kingdom conference delegation is W. P. Hildred, director of civil aviation, Air Ministry.

countries possible solutions to air problems.

The British stand for an international body with comprehensive control over frequencies, designation of routes and determination of each country's share in those routes was outlined in the White Paper made public before the conference. Originally this encompassed the setting of rates, but the British now are not so sure this could be accomplished at the outset.

► **Dominion Plan**—Canada proposes wide discretion to an international executive board and re-

gional boards, broader than that under the British plan, although the opinion here was that rules would be brought forth to tighten that discretion. The Canadians also proposed an "escalator clause" to permit a nation whose companies operated with a payload of more than 65 per cent to increase those services. An earlier proviso to cut service that falls below a 40 per cent payload was reported on the way to the discard as the second week of the conference wore on. Nor was "payload" exactly defined. Some observers expected Canada's proposals to emerge as

the British Empire plan, as the conference progressed.

While the dickering went on over the broad future international picture, the issue of interim council and provisional routes pending completion of a permanent multilateral agreement was another problem. Bilateral agreements to serve this purpose were under discussion among the delegations.

► **Favored by Americans**—The U. S. wants such agreements to become permanent under a standard form, so that international air transport may continue to be carried on within that framework.

The Canadians say they are not in Chicago to discuss bilateral agreements, that the decision should first be made on multilateral, into which bilateral arrangements might merge later. The British view is virtually the same.

Berle told a committee discussing this problem that "plainly we could stop ourselves by the ancient method of not being able to decide whether the egg preceded the hen, or vice versa. If we could not discuss geography until we had discussed international law and air conventions and were at the same time unable to make our minds up about air conventions until we do something about geography."

In general, the American long range view, which apparently many smaller countries share, is that ordinary commercial influences will be sufficient between nations of good will to permit a reasonable basis of development. One thing was virtually certain: The U. S. stood to lose nothing by maintaining its stand. If others joined in that, as many of the 52 nations at the conference appeared to be doing, and a multilateral convention was to be effected on this country's terms, the diplomatic victory would be complete. If not, there was little doubt that bilateral or even quadrilateral agreements would be reached between this nation and others that would pave the way for expansion of U. S. air commerce.

Flying Wing Glider Post-War Prospect

Experimental Hawley Bowlus product pictured on cover is not expected to be used in this war but development of craft is believed likely for peacetime commercial operations.

Hopes for a glider that will have practical post-war possibilities have risen with disclosure of pictures and some details of the striking and reportedly efficient twin-boom "flying wing design" glider pictured on the cover of this week's issue.

It is an experimental glider that will not be used in this war, but in which the Army is interested, among others, for post-war and future use. It was first described, within restrictions, in AVIATION NEWS last February. It approaches the revolutionary in glider design, and is the product of Hawley

Conference Highlights

• The International Civil Aviation Conference at Chicago which was all but overshadowed in its opening days by the wind-up of the election campaign has begun to assume its full and rightful stature with preliminary work out of the way. Aside from the main issues there are countless details requiring the attention of the delegates and their staffs which are now at work in earnest.

• The "prototype of the Chicago conference, seen by some as potentially the biggest thing in United States aviation history since the Wright Brothers flight, was the first international Aeronautical Congress held at Paris in 1889, which appointed a "permanent international aeronautical commission" to study certain legal questions, particularly the use of airships in war. Aviation, as such was not yet in existence and the first airships had succeeded in only a few timid flights.

• Consensus last week was that some time must elapse before a clear picture can be obtained of the likely scope of conference accomplishments. Sample of divided opinion on time required was Norway, which expects privately that issues may be solved speedily. The British think longer. Hotel rooms for delegations and offices were taken for 25 days from the first of November.

• Personnel of U. S. delegation assigned to technical matters was watching diplomatic developments with considerable detachment, privately pleased at the line between political and economic aspects and less nebulous proposals with which they are deal-

ing. The array of technical advisers with which the U. S. delegation journeyed to Chicago reportedly caused the British to send a hurried SOS to London for additional technical experts for its own delegation.

• A great air of bustle attended the opening of the second week of the conference. Some of the earliest meetings of committees were devoted mainly to such matters as the supply of filing cabinets or the speed with which documents were made available. The former was momentarily important because of the vast amount of reference material brought by delegations, the second because of the need for study before committee consideration.

• A number of representatives of aircraft manufacturers are headquartered at the conference hotel, among them Lockheed, United Aircraft, Douglas, Curtiss, Martin, Boeing, Republic and Consolidated Vultee. The Aeronautical Chamber of Commerce has a headquarters suite. Announcement by Martin of its *Mercury* preceded that by another manufacturer of a larger plane built as an Army cargo craft but due for eventual commercial use which is expected to be made public this week or next.

• The list of correspondents, photographers, radio men and others with conference press credentials stands close to 150. A detail of 105 military police patrols hotel corridors. An advisor to the Polish delegation is thrilled over his room on the 24th floor—highest living quarters he ever has occupied. —M. M.

Bowlus, who designed it for Airborne Transport, Inc., affiliate of General American Transportation Corp., manufacturer and lessor of railroad cars.

► **Interested duPont** — The late Richard duPont was interested in this largest of all gliders and lost his life in it when the ballast load shifted and the craft went into a spin. It has two compartments which can accommodate a jeep in each or guns or other cargo. Glider exponents predict great things for this craft.

Bowlus is rated as one of the nation's foremost designers of sailplanes and is credited with the Bowlus "Pod" single-place craft which won various awards at air

meets. His giant ship, involved in an accident, received a clean bill of aeronautical health.

► **Restricted**—The CG-16, pictured on the cover has been strictly on the secret list and there has been no mention of its size or characteristics until now.

A second glider, on which some details have now been disclosed, has been mentioned but little publicly. It is the CG-10A, a design developed to explore the feasibility of carrying very large equipment by glider. It has a large, rounded fuselage, designed to carry heavy and large equipment. It has the largest cargo space and the largest payload of any glider thus far announced.

Liberalize Insurance on Schedule And Limited Non-Schedule Flying

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Unlimited scheduled air transport flying and minimum-time non-scheduled flying have been brought under full life insurance coverage without payment of extra premium for the first time.

New liberalized policy provisions have been put into effect by the Connecticut General Life Insurance Co., under which full coverage is given passengers on this country's air transport lines anywhere in the world, and by which extra premium payments for pilots and other crew members are cut approximately one-fourth. Disability waiver and double indemnity are included for passengers.

Non-scheduled flying policies will be written at standard rates for minimum-time use and at low per-hour extra premium rates for extended travel.

► **Company-Owned Planes**—Company plane operations are classified in a particularly low rate, considered significant in view of the interest many large companies are showing in extended use of company-owned planes in the post-war period. All other flying classifications are given the benefit of new low rates.

Connecticut General Life for years has written more than three-fourths of airline group insurance and is generally credited in the industry with being one of the most progressive and helpful insurance companies in the promotion of air travel.

The move came as a surprise both to the air industry and to the insurance field. Lower rates have been expected, not only in the field of life insurance but in other aviation risks, but the Connecticut General move was made without prior notice even to agents of the company. In the past other companies have followed the leadership of Connecticut General, presaging a general lowering of rates and exclusions that have to some extent hampered the growth of aviation.

► **New Rates**—Particularly significant in the Connecticut General announcement are the new rates quoted for non-scheduled flying,

airline and other pilots, and private flyers.

Commercial pilots now can obtain life insurance to the extent of \$25,000 at an extra premium rate of \$7.50 a thousand for full occupational coverage. This compares with \$10 a thousand previously quoted by Connecticut General and extra premiums ranging to \$35 and \$40 a thousand by

AVIATION CALENDAR

- Nov. 13-14—National Association of State Aviation Officials, Annual Meeting, Oklahoma City.
- Nov. 13-14—Board of Governors, Quiet Birdmen, Skirvin Hotel, Oklahoma City.
- Nov. 14—Inter-regional meeting, Civil Aeronautics Administration, Biltmore Hotel, Oklahoma City.
- Nov. 14—Board of Directors, National Aeronautic Association, Skirvin Tower Hotel, Oklahoma City.
- Nov. 14-18—Women's National Aeronautic Association, Annual Meeting, Biltmore Hotel, Oklahoma City.
- Nov. 15-18—National Clinic of Domestic Aviation Planning, Oklahoma City.
- Nov. 16-17—Air Transport Engineering Meeting, Kansas City Section, Society of Automotive Engineers, Hotel Continental, Kansas City, Mo.
- Nov. 27-28—Executive Board Meeting, National Aircraft Standards Committee, Hotel Lexington, N. Y.
- Nov. 27-28—Air Traffic Conference, Carlton Hotel, Washington, D. C.
- Nov. 29—Air Transport Association, Annual Meeting, Carlton Hotel, Washington.
- Nov. 29-30—National Meeting, National Aircraft Standards Committee, Hotel Lexington, N. Y.
- Nov. 30-Dec. 1—American Marketing Association, Edgewater Beach Hotel, Chicago, Ill.
- Dec. 4-5—SAE National Air Cargo Meeting, Chicago.
- Dec. 5-7—Second Annual Meeting, Aviation Distributors and Manufacturers Association, Jefferson Hotel, St. Louis, Mo.
- Dec. 6-7—National Aviation Trades Association, Annual Convention, Jefferson Hotel, St. Louis, Mo.
- Dec. 11—Joint Meeting, Industrial Conservation, Aviation and War Production Divisions, American Society of Mechanical Engineers, 7:30 p.m., Engineering Societies' Building, 29 West 39th Street, New York.
- Dec. 12-13—First California Aviation Conference, Hollywood Roosevelt Hotel, Hollywood, Calif.
- Dec. 13—Canadian Aircraft Traffic Managers Meeting, Montreal.
- Dec. 17—Wright Brothers lecture, Institute of Aeronautical Sciences, Washington.
- Jan. 8-12—SAE Annual Meeting and engineering display, Book-Cadillac Hotel, Detroit.
- Jan. 30-Feb. 1—13th Annual Meeting, Institute of Aeronautical Sciences, New York.
- April 4-6—National Aeronautic Meeting, Society of Automotive Engineers, Hotel New Yorker, New York City.
- Apr. 10-11—Airplane Technical Committee, ACCA, New Orleans.
- Apr. 13-14—National Airworthiness Requirements Committee, ACCA, New Orleans.
- May 6-9—International Aviation Fraternity, first annual convention, Miami Beach, Fla.
- May 20-27—Pan-American Aircraft Exposition, Dallas.

other companies. This rate includes domestic lines and routes where one terminal is in the United States and the other is in the western hemisphere. Insurance of \$50,000 can be obtained by these pilots at the same rate, but with partial aviation exclusion rider. Commercial pilots and crew members on American carriers in transoceanic operations can obtain \$15,000 in insurance with an extra premium of \$15 a thousand, and \$50,000 on a partial aviation exclusion rider.

The same rates apply for pilots of company-owned planes when used in business flying only, with pilot's qualifications, plane, annual flying time and terrain comparable with the same factors in domestic airline operation.

► **Premiums**—Persons flying as passengers in non-scheduled operations do not pay an extra premium when flying on business trips in company-owned planes up to 100 hours a year, or in charter flying less than 50 hours a year. Limit is \$25,000 unless less than 50 hours of annual flying is involved, in which case \$50,000 is allowed. An annual extra per thousand of two cents an hour is quoted for passengers flying more than 100 hours a year in company-owned planes and four cents an hour for more than 50 hours in charter flying, limit \$25,000. Less than 25 hours annual flying time on private business or pleasure if the pilot holds an airline or commercial certificate also claims the standard rate and more than 25 hours an annual extra per thousand of four cents an hour, with a limit in this classification of \$10,000.

► **Rates**—Professional pilots doing charter flying, student pilot instructors, sightseeing, photography and surveying come under the following rates: 50 to 100 hours a year, limit \$25,000, annual extra \$10 a thousand; 101 to 200 hours a year, limit \$25,000, annual extra \$15 a thousand; and more than 200 hours, limit \$10,000, annual extra 8 cents per hour per thousand.

The personal equation and proportion of experience enter into the private pilot field, with the decisive factors being the experience of the pilot, expressed in terms of total flying hours, his record and reputation for "pilot error"; estimated annual flying time, and type of plane, reason for flying and terrain over which flights are made. The schedule applying to pilots with private pilot's certificate or



NEW GLIDER TYPES RESULTING FROM AAF EXPERIMENTATION:

Almost in the duplex type is the CG16, shown above, usefulness of gliders. Below is the CG10A, with experimental glider with heavy payload, but limited largest cargo space and largest payload of any glider. This new design was developed to explore the feasibility of carrying very large equipment by glider.



higher rating, who have had at least 100 hours solo time and who fly only licensed planes is: 25 to 74 hours a year, limit \$25,000, \$10 per thousand for less than 400 hours solo experience, \$7.50 above 400 hours; 75 to 124 hours, \$25,000 limit, \$12.50 and \$10; 125 to 199, limit \$25,000, \$15 and \$12.50; and 200 and over, limit \$25,000, \$17.50 and \$15.

► **Student Pilots**—Limit on student pilots is \$10,000, for which an annual extra premium of \$25 per thousand is quoted.

Experimental test pilots and crop dusters will, the company says, be considered only with a partial aviation exclusion rider. Military pilots will be considered for \$10,000 policies with partial aviation exclusion rider. Pilots and non-scheduled flight passengers paying an extra premium and those issued with a partial aviation exclusion rider will be considered for double indemnity excluding death caused by aviation. Whether issued with an occupational extra or with a partial aviation exclusion rider, pilots will be considered for all plans of insurance issued by Connecticut General except five and ten year term, income continuance and family income rider.

Industry sources, particularly in the transport field, were gratified

by the announcement of the new plan and in the comment of the president of Connecticut General Life that "it is just common sense that life insurance underwriting should keep pace with the truly extraordinary advances made in aviation . . . the splendid safety record achieved by our great airlines has more than justified our belief . . ."

Standardize Wiring

A standard electrical wiring system patterned after American procedures has been developed by the Society of British Aircraft Constructors, Ltd., counterpart of the Aeronautical Chamber of Commerce in this country, and is now being incorporated in a "large new British civil airliner." It will be used in other planes as soon as design changes can be made, and will be standard for all types in the future.

The system, in addition to standardizing plane wiring, will make use of connector blocks for ease of maintenance in the same way that American planes now mount sockets that permit changing of wing or other units without re-wiring of all electrical connections to the unit.

Cancellations Reveal Termination Trends

Existence of two experimental fighters also disclosed in announcement of contract changes.

Trend of aircraft contract termination is pointed up in cancellations reported for the last week in October, which also disclose existence of two experimental airplanes.

One cancellation involved McDonnell Aircraft's XP-67, an experimental twin engine fighter for which the production schedule was not available. Of two ordered, one has been completed and was involved in an accident, the other one is about 15 percent complete. The plant asked for termination to make way for other war contracts.

Another cancellation involved the Curtiss-Wright YP-60E, an experimental, fast, high altitude fighter. Two were contracted for and one has been completed.

► **Drop Fuel Tanks**—Significant in the changing war picture and development of planes was cancellation of external auxiliary jettison fuel tanks, involving six contracts.

These were: Tappan Stove Co., Marion, O., P-38, P-47, P-51 — Seventy-five gallon fuel tanks,

cancelled 19,383 costing \$853,821; American Stove Co., St. Louis, 110-gallon tanks for P-47 and P-51's, canceled 16,700 costing \$1,030,056; Briggs Manufacturing Co., Detroit, 110-gallon tanks for P-47 and P-51, canceled 25,500 costing \$1,901,025; American Stove Co., St. Louis, 75-gallon tanks for P-38, P-47 and P-51, 8,650 costing \$377,918, plant converting to manufacture of knock-down version of same tank; Midwest Manufacturing Co. Galesburg, Ill., 75-gallon tanks for P-38, P-47 and P-51's, canceled 11,194 costing \$479,662; Motors Metals Manufacturing Co., Detroit, 75-gallon tanks for P-38, P-47 and P-51's, canceled 15,250 at \$753,350.

Other cancellations reported:

▶ Allison Division, General Motors—Canceled 1,450 aircraft engines for P-38, P-40 and P-63, contract \$18,858,000.

▶ Packard Motor, canceled 1,200 Packard Merlin aircraft engines for P-51's *Lancaster* and *Mosquito*, contract \$15,600,000.

▶ Lockheed Aircraft, complete aft boom assembly, spares for P-38, undelivered balance of contract approximately \$210,074.

▶ Bell Aircraft, 46 P-59 two-engine jet propulsion planes, contract \$5,679,942.

▶ General Motors, Aeroproducts Division, propellers for P-75, previously canceled at Fisher Body, spare parts relating to 200 installation propeller assemblies, contract \$271,700.

▶ Wright Aeronautical, R-3350BA aircraft engine deflectors and scoops, contract \$202,489.

▶ Allis-Chalmers, P-38 turbo superchargers, canceled contract for 1,500 amounting to \$1,203,108.

Coast Conference

Proposed legislation governing municipal and privately-owned airports, commercial and private flying and zoning in preparation for increased aviation activity in California top the agenda for the forthcoming California Aviation Conference devoted to post-war planning set for Dec. 12-13 in the Hollywood Roosevelt Hotel.

The Los Angeles Chamber of Commerce Aviation committee initiated the meeting and is joined by the Berkeley, Long Beach, Oakland, Sacramento, San Diego and San Francisco Chambers of Commerce and California chapters of the National Aeronautical Association.

"Blow Jobs"

Credit Army Air Force squadrons based at Muroc Army Air Field and other Mojave Desert bases with having coined the name that doubtless will tag American jet propulsion fighter trainers wherever they appear.

Well out of the experimental phase of testing, the JP's are engaging daily in the tactical training of bombing and fighter groups in California skies.

To flight and ground crews alike the jet fighter trainers are "blow jobs."

WEST COAST REPORT

Non-Priority Seats Growing Problem

Situation worsening in traffic to Coast as U. S. steps up pace in Pacific war.

By SCHOLER BANGS

Western divisions of domestic airlines are promised a growing headache in their handling of non-priority passengers as the Pacific War reaches its peak. Civilian air travel is increasingly speculative, and hampered by irregular waves of priorities. Some routes now report up to 95 percent of seat space taken by priority holders. Unpredictable offloading of an entire load of military priority passengers at one station is not infrequent, leaving airline agents too little time to round up "spec" civilians for the continuing flight. This explains the reason civilians who have waited as long as several days at terminals often see planes arrive with as few as four or five passengers.

▶ **Super Fuel** — Manufacturers whose interest in the personal airplane market has been luke warm are heartened by the prospect of having available after the war the "super fuel" now in military use. It will boost tremendously the available horsepower of small engines (as well as large), sharply increase miles-per-gallon, and will increase pay load in proportion to the fuel load saved.

▶ **"Hillercopter"**—Look for a new surge of helicopter experimenting, and a trend toward the superimposed dual rotor system, long disputed but now proved successful by Stanley Hiller, Jr.'s "Hillercopter." Why his rotor combination works is still Hiller's trade

secret, which may lead copyists into engineering hot water. Hiller already is in experimental production of his 'copter with Henry J. Kaiser backing a factory established in the former California National Guard armory in Berkeley. His yellow, bug-like 'copter regularly flies from the armory's small drill yard and flies in and out among Berkeley business buildings. Some Berkeley residents have protested. But Berkeley city officials turn a deaf ear. They want their city to be known as the birthplace of the West Coast's first practical helicopter.

▶ **Radar and Safety**—What radar may be expected to do in adding to the safety of air travel post-war is indicated by a letter to John W. Myers, Northrop Aircraft test pilot at Hawthorne, Calif., from Lieut. A. W. Lockhard, *Black Widow* pilot in the South Pacific: "My boy picked up a target at five miles, and we closed in to about 1,000 feet in a dive."

▶ **Plane Design Credit**—West Coast manufacturers who have hesitated at irritating their best customer now are taking the lead in claiming credit for development of the military aircraft they build. Wright Field long has enjoyed much of the credit. Now Aircraft War Production Council, West Coast, reports: "Every airplane now helping to maintain American air supremacy and bring the nation closer to victory was primarily designed and developed by one of the private airplane manufacturers, based on requirements outlined by procurement agencies."

▶ **Hiring Problem** — Warplane manufacturers momentarily needing thousands of new workers, and confronted with continuing loss of workers who have not been sold on the idea that the war may last a long time, may find the AAF unwilling to lend extensive aid in drives for new employees. It is believed that high Army officers do not want to risk being responsible for hiring workers one day and laying them off the next as cutbacks develop. Preservation of civilian good will have has been a critical consideration in military participation in factory problems.

▶ **425 Mph. Airliners** — Unpublicized has been the fact that TWA is working on a world air route schedule based on 425 mph. cruising flight. It is prompted by still-secret airliner designs now on the drawing boards of West Coast factories now busily courting civilian post-war customers.

Commando Sales Promotion Group Activated by Curtiss-Wright Corp.

Economy and utility of largest twin-engine airliner, compared with four-motor planes, is expected to be keystone of C-46 presentation.

Curtiss-Wright Corp., with two contracts for commercial versions of the C-46 *Commando* and others pending, has activated a sales promotion section assigned to the *Commando* project.

With the *Commando* the largest twin-engine airliner in existence, aircraft sales activities for immediate post-war years are revolving around the respective advantages of twin-engine and four-engine operations, with Douglas the most active in the sales field with its four-engine DC-4 and DC-6 and Curtiss in the two-engine field.

▶ **Economy Factor**—While some of the airlines are proposing to use four-engine equipment for both long and short hauls, the economy and utility aspect of the twin-engine plane are forming the keystone of *Commando* sales promotion. Advantages of the four-engine ship in long distance operations is being conceded by the Curtiss sales organization, which is concentrating on the 200- to 800-mile field.

The two airlines that have already placed *Commando* orders are Eastern and National, competitors on the eastern seaboard run from New York to Miami. Each also has ordered four-engine equipment from Douglas, apparently with the intention of using the larger equipment for long distance, non-stop operations and the twin-engine for shorter runs, the two fitting into the whole picture in their own economical ranges.

▶ **Prestige**—Douglas, however, is offering its DC-4 for the same type of medium and short operation, and some airlines are maintaining that they will have to operate four-engine equipment as a matter of prestige on the shorter operations. They fear, they say, that passengers will not react favorably to debarking from four-engine planes at connecting airports and resuming their trip on two-engine planes.

On the other hand, aviation traffic studies have indicated that the general traveling public does not have any preconceived ideas on the subject of twin or four-engine

planes, and this factor, plus flexibility of operation and convenience of design for ground handling of passengers and cargo, will undoubtedly be the basis for the Curtiss-Wright sales promotion.

▶ **"Mercury"**—A new factor coming into the field will be the *Martin Mercury*, which might offer some competition in the 200-400 mile twin-engine field. However, Curtiss does have the advantage of current production assuring earlier deliveries, probably one of the biggest single elements in the immediate post-war airliner field.

The *Commando* will carry between 36 and 42 passengers, depending on interior appointments. The DC-4 carries 44, the DC-6, 56 and the *Martin Mercury*, 30.

It may be significant that four of the new Curtiss appointments are of men who have had long experience in the South American field as well as in domestic airline and manufacturing operations. In addition to the *Commando's* obvious sales possibilities in this country, Curtiss long has been a well

known name in South American and European aviation, and the *Commando* is admirably suited for operations in the lands to the south, particularly in the cargo field.

The appointments were announced by E. A. Warren, manager of the contracts department at the St. Louis plant.

▶ F. T. Sterling, former airline executive, is named assistant manager of the contracts department in the St. Louis plant. Sterling has been associated with Pan-American Grace and Isthmian Airways in South America.

▶ Marvin J. Parks, former assistant operations manager and divisional maintenance engineer of Pan-American Grace Airways, is in charge of the sales promotion staff. Before joining Pan-American Grace he had been a test pilot and production executive.

▶ G. Sumner Ireland will become eastern representative, with offices at the Curtiss-Wright executive headquarters, 30 Rockefeller Plaza, New York City. He has been a pilot since 1916, designed and built the Ireland flying boat and for several years in the late 1920's headed sales activities of Curtiss Flying Service.

▶ T. D. Harvey will be southeastern representative with offices at the 36th Street airport, Miami. Harvey held the rank of major when he retired from the AAF



F. T. Sterling

Marvin J. Parks

C. K. Travis



R. F. Wolford

T. D. Harvey

G. Sumner Ireland



Closeup of New Recessed Nose of C-46: The familiar cigar-shape of the Curtiss-Wright C-46 Commando has been changed in favor of this new version, now going on military ships and to be a feature of the Commando airliner. The new nose gives better pilot visibility. It is "bird-proof" and equipped with a special de-icing system. The small window at the side of the windshield can be opened by the pilot without getting any air blast. The side window is a conventional slide-back type, but has a pressure-locking device for bad weather operation.

early this year, has been flying nearly 20 years and has logged thousands of hours as an airline and military pilot.

▶ C. K. Travis, export representative, with headquarters in St. Louis, served on a military mission to Peru while with the Army Air Corps, later flew for Pan-American and in 1931 established an airline for the Panamanian government. He joined Curtiss-Wright in 1932.

▶ R. F. Wolford will head the mid-western and western organization, with headquarters in St. Louis. Wolford has a broad background of aviation engineering experience with Douglas, Northrop and has been project engineer on the *Commando* with Curtiss-Wright.

ACC Fetes Delegates

The aircraft manufacturing industry, acting through the Aeronautical Chamber of Commerce, was host last week in Chicago at a dinner for delegates to the International Civil Aviation Conference. Among the speakers were Eugene E. Wilson, United Aircraft, chairman of the Chamber Broad of Governors; Scott Russell, Chamber's general manager and Assistant Secretary of State Adolf A. Berle, Jr., head of the United States delegation. Copies of the Aircraft Yearbook for 1944, official publication edited by Howard Mingos, were presented to delegate guests.

Machine Tool Talks Give Hint of Policy

Disposal of Lend-Lease aviation equipment to be left in hands of Allies is expected to be major problem after war.

First indication of government policy toward a major post-war problem—the billions of dollars worth of Lend-Lease aviation equipment that will be left in the hands of our Allies after the war—is found in the current machine tool discussions.

That problem, part of the general surplus supply problem, is one of the most delicate facing our government. A good portion of the planes sent to Britain and Russia under Lend-Lease, will, of course, have been destroyed. Another sizable percentage will be war worn and obsolete.

▶ **Large Stocks Left**—But there will still be left in the hands of our Allies thousands of modern bombers, fighters and transports; thousands of spare engines of all types, and hundreds of millions of spare parts. And all, under the terms of the Lend-Lease agreements, will still be the property of the United States government.

Conversations now being held between high American and British officials regarding the disposal of a large number of machine tools, become of special significance

to the U. S. aviation industry. The British have asked us to state terms under which these machine tools can be turned over to overseas manufacturers for peacetime production.

▶ **U. S. Position**—The U. S. government has taken the position that:

▶ The British manufacturer pay our government, in cash, a price based on a formula which takes into consideration the appraised value of the remaining usefulness of each tool, as well as its value on the open market.

▶ The tool cannot be re-exported by the British purchaser without the consent of our government—and in no case can be sold into the U. S. market.

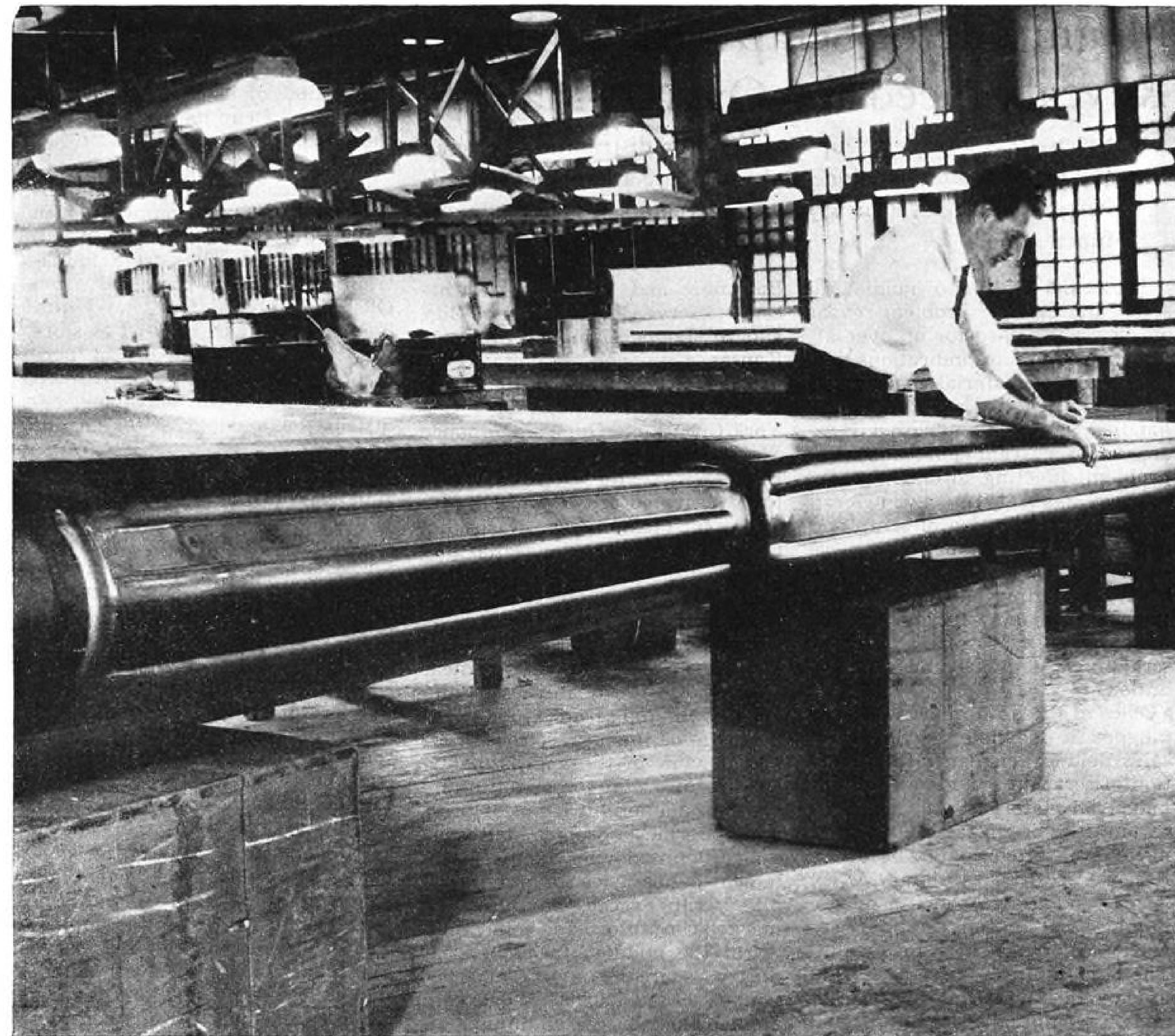
▶ If the British decide to accept our offer it must apply to the entire lot of tools now under discussion. In other words, they cannot pick out the most efficient tools and return the others to us.

The British are said to have raised objections to our pricing formula and the subject is now under discussion.

Most significant factor in our government's stand, is that it apparently represents a victory for a group of officials in FEA and the State Department who have been fighting vigorously for what they term a "reasonable and business-like" policy for all Lend-Lease settlements. Hotly opposing them have been two other groups—one holding the viewpoint that we should allow our Allies to keep all Lend-Lease goods in their possession at the end of the war, as an outright gift; the other favoring the use of Lend-Lease leftovers as a means of inducing our Allies to enter into international trade agreements.

ACC Public Relations

Regional public relations committees of the Aeronautical Chamber of Commerce have been organized with Jess Sweetser, Curtiss-Wright, chairman of the eastern region committee and John C. Canady, Lockheed, chairman of the western group. Other members are J. A. Fitz, Sperry vice-chairman and W. L. Wilson, Kellett, secretary in the east and Harold Mansfield, Boeing, vice-chairman in the West. The two committees include members of the Public Relations Advisory Committee whose headquarters are in the respective regions.



Now . . . a better way to tell ice where to get off!

THIS IS a new B. F. Goodrich De-Icer—the Type 11—shown here mounted on a wing mock-up for testing. It's lighter, lasts longer, costs less to maintain and, most important, provides better protection against icing.

Although it operates on the same principle as De-Icers now in service, several refinements in design and construction have resulted in improved performance. Here are a few of the new features:

Improved tear-resistance: New all-surface ply of elastic fabric which resists tearing.

Smoother cross-section: Attach-

ment edge is thinner, reinforcing strips are eliminated, tubes are recessed.

Improved tubes: Tubes are made of highly stretchable nylon fabric.

Lighter: Sponge filler and reinforcement strips have been eliminated; rubber and fabric have been used more effectively.

Better ice removal: Improved tube arrangements, made practical by stronger, lighter materials, provide more efficient ice protection.

Longer life: New De-Icer installs with less strain on the rubber, lengthening its useful life.

Reduced maintenance: Most of the features mentioned here contribute to lower maintenance requirements.

All these refinements for better performance have been approved by the CAA and the Army Air Forces. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*



Magnitude of Scrap Problem Reveals Need for Overall Plan

Seven areas already set up by Army for distribution of scrap and excess aluminum alone and four more are to be activated; Navy adding eleven new salvaging centers to seven already functioning.

Piecemeal efforts to handle the scrap and salvage problem reveal an increasing need for an over-all plan, and there are indications that an amount of material even greater than anticipated will have to be handled, salvaged and stored. Here are some current phases of the problem affecting aircraft:

▶ Army has set up seven scrap areas for distribution of scrap and excess aluminum alone. Four more are to be activated.

▶ Navy is adding eleven new centers to seven now functioning for handling all types of material for scrapping, salvaging and redistribution.

▶ Office of Price Administration has plugged a loophole in the scrap sales field by changing its definition of scrap to include all surplus industrial materials.

▶ Quantities of aircraft salvage will move into storage centers of Metals Reserve Co., RFC subsidiary, when Army- and Navy shortly release numbers of obsolete and war-weary combat planes to surplus. There is little, if any, hope that any of this material can be sold and current plans are to store it in the open on the theory that deterioration costs will be less than costs of inside storage.

▶ Sole bright spot in the picture will be seriously affected by the shutting down of war production and the movement of an increasing volume of excess stocks in competition with it. This is the aircraft industry's excess inventory program, which, despite reports to the contrary, has been successful in moving quantities of materials which otherwise would have been a serious drain on the industry.

Army depots for handling all types of scrap will number in the scores, even though under terms of the Surplus Property Bill they will be utilized only in processing excess materials into surplus.

In the case of aluminum, the bulk of the material consists of supplies from war plants and the balance chiefly aircraft that have crashed in this country. Seven of the centers already are in operation at Philadelphia Ore Dock, for

Baltimore and Philadelphia; Chicago, to serve Chicago, Kansas City and St. Louis; Camp Phillips, for Kansas City and Wichita; Fort Lewis for Seattle; Sommerville Quartermaster Depot, for New York City; Lake Ontario Ordnance Works, for Buffalo; and Grand Blanc, Mich., for Detroit. Areas to be activated are: Camp Forrest, Tenn., for Memphis and Nashville; Camp Howze, Tex., for Dallas and Fort Worth; Camp Haan for Los Angeles, and Camp Gruber for Tulsa and Oklahoma City.

▶ **Near Aluminum Scrap Sources**—Virtually all these areas are near sources of large quantities of aircraft aluminum scrap, which is expected to be the most serious problem in view of the approximately 80 percent use of the metal in aircraft production. It is not at present too serious a problem, but early difficulty in moving excess stocks indicates heavy cancellation supplies will exceed anything the market can absorb for some time. As of the middle of October, industry sources report 7,000,000 pounds of 12,000,000 in government-owned excess aluminum inventories shifted from war plants had been sold. This illustrates the wisdom of the aircraft industry in getting a start while the market is more receptive than it will be when other programs get under way. The enormous size of the storage problem also indicates

OPA Scrap Prices

Office of Price Administration, in a change of scrap definition affecting the aircraft industry, has ruled that sale of any surplus industrial materials—such as excess inventories—must be at the scrap maximum prices set up by that agency.

Heretofore, scrap has been defined as "waste or by-product of any kind of fabrication or manufacturing operation," but the change now brings surplus industrial materials under the price regulations as scrap.

plants keeping their inventories rigidly low and quickly segregating surplus stocks will have an easier time of it than those which attempt to clear the decks late in the day.

▶ **Navy Program**—The Navy, with seven Material Redistribution Centers now in operation, will open eleven others. These centers will take excess supplies from industrial centers and material from Offshore Material Recovery Units. Some centers will be used as storage centers for material of permanent value to the Navy. All will receive material for salvaging, redistribution and storage for surplus sale.

Centers now in operation are at Buffalo, N. Y., and Eddystone, Pa., both for machine tools; Edgewater, N. J., for heavy equipment; Irvington, Calif., for electronics material; and Chicago, Point Pleasant, W. Va.; and Alameda, Calif. Another center is under construction at Stockton, Calif. Similar centers will be situated at Corpus Christi, Tex.; Jacksonville, Fla.; Lawrence, Mass.; Jeffersonville, Ind.; Torrance, Calif.; Steubenville, O.; Newburgh, N. Y.; Trenton, N. J.; Lonsdale, R. I.; and Bellingham, Wash.

▶ **Combat Planes**—Most of the combat planes of the services eventually will be turned over to the Surplus Property Board for scrapping. They will go to the Metals Reserve Co. Industrial supplies will be termination inventories and excess stocks left over from contract changes that obsoleted quantities of already formed units. Government-owned scrap from industrial plants will be taken over without question, while company-owned excess inventories can be handled in a variety of ways, among them the aircraft industry method of sale to Metals Reserve for \$1, with losses absorbed by the Treasury Department in tax procedures.

Virtually the entire amount handled under the aircraft industry plan has been government-owned stocks, with company-owned materials slow in moving into the disposal plan. However, inter-company transfers and sales through such organizations as the Beech subsidiary have been carried out satisfactorily.

This can be termed an alleviation of the eventual mass dumping of excess supplies at the end of the war.

Well more than half the 32,000,000 pounds of steel in the warehousing plan have been moved,

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6 hours and 20 minutes	
JACKSONVILLE	\$45.95
4 hours and 50 minutes	

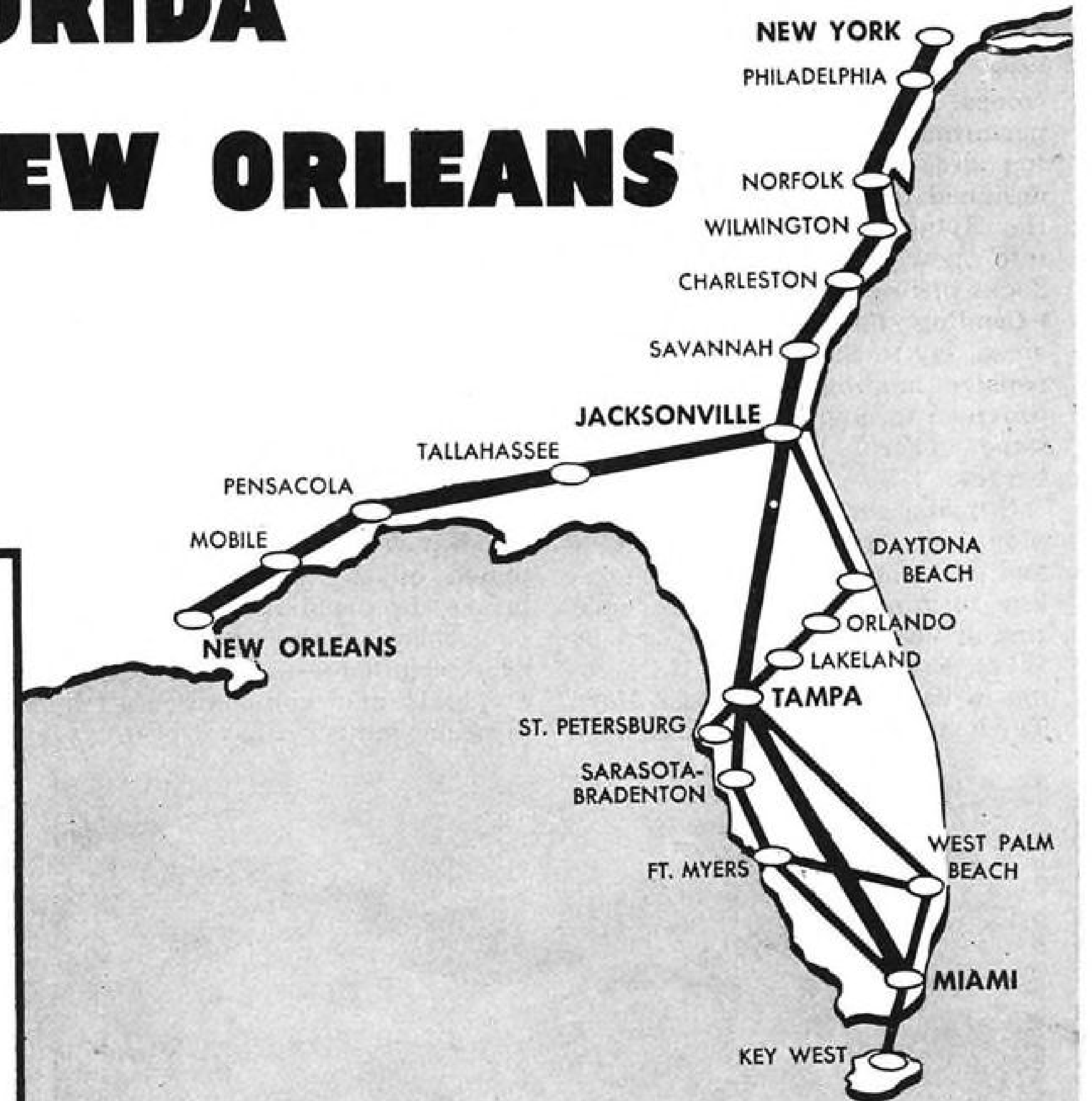


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with 12,000,000 pounds remaining. Of 400,000,000 pieces of hardware reported, only 50,000,000 pieces remain. Copper has been spotty in its movement.

Martin Device Eases Handling of Mars

U-shaped tug adapted from "sea mules" of invasion troops is designed to speed air terminal work.

The Glenn L. Martin Co., which has been making a bid for the international air market with its huge flying boats, has disclosed plans for new methods of speedy handling of the ships of the air at terminals.

Basis of the system is a new U-shaped tug adapted from the "sea mules" used by invasion troops. Powered with three high-performance outboard engines, the tug already has been tested. It is designed to fit around the hull of the flying boat, maneuvering it into newly-designed tidal float docks jutting out from a fixed pier.

► **Landing Facilities**—In outlying areas, say in South America, inexpensive landing facilities can be provided through use of tugs of the same general type equipped as barges.

Yet another system would employ high speed cables to guide and dock the flying boats at shoreline terminals. This is somewhat similar to the system devised by Lieut. Frank J. Walters, USN, for use with *Mariners* and the *Mars*. The Navy also has used a U-shaped

dock of the type disclosed by the Martin Co., for servicing and loading the *Mars* at the Alameda, Calif., Naval Air Station.

Wright Bros. Lecture

"Compressible Flows in Aeronautics" will be the subject of the Eighth Wright Brothers Lecture of the Institute of Aeronautical Sciences to be presented in the U. S. Chamber of Commerce Auditorium at 3 p.m., Sunday, Dec. 17.

The lecturer will be John Stack, chief of the Compressibility Research Division of the Langley Memorial Laboratory of the National Advisory Committee for Aeronautics.

The Robert J. Collier Trophy for 1943 will be presented by the National Aeronautic Association in ceremonies preceding the lecture.

New Air Publication

A new learned journal, *Air Affairs*, to be devoted to the economic impact of the transition from surface to air transportation and its effect on the mode of living and economy of the nation is being projected by William D. Partridge, of Washington, D. C.

Partridge said his plans are not far enough advanced to be detailed at this time. It was understood, however, that they contemplated quarterly issuance of the proposed journal and that it would be economic rather than technical.

► **Subscriptions**—A number of individuals and companies in the aviation industry have been ap-

proached regarding the journal and, while the industry has not given its support as a group to the publication, it was reported that several aviation executives and some companies have made subscriptions.

McDonnell Contract

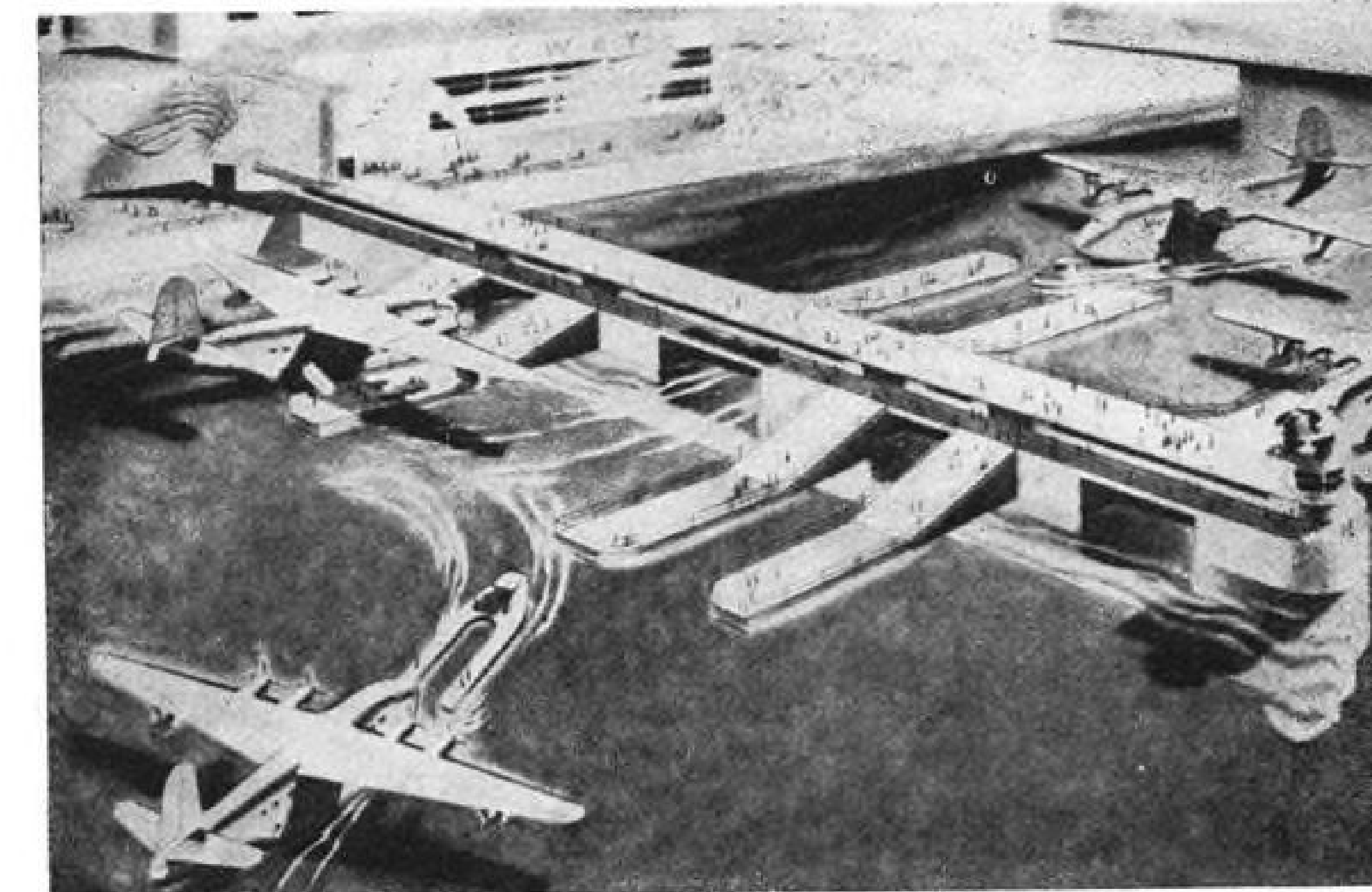
McDonnell Aircraft's divisions at St. Louis and Memphis have been brought into the production program on Boeing's B-29 Superfortresses. The company will manufacture the pressurized section of the fuselage. Fabrication of the structural details will be in St. Louis, involving about 700 workers while fabrication of installation details and assembly work will be in Memphis where 1,600 workers will be employed at peak program.

Initial deliveries are scheduled for the first part of 1945. Peak production is expected by next October. McDonnell will be a major sub-contractor of The Glenn L. Martin Nebraska Co.

Cub Aids in Rescue

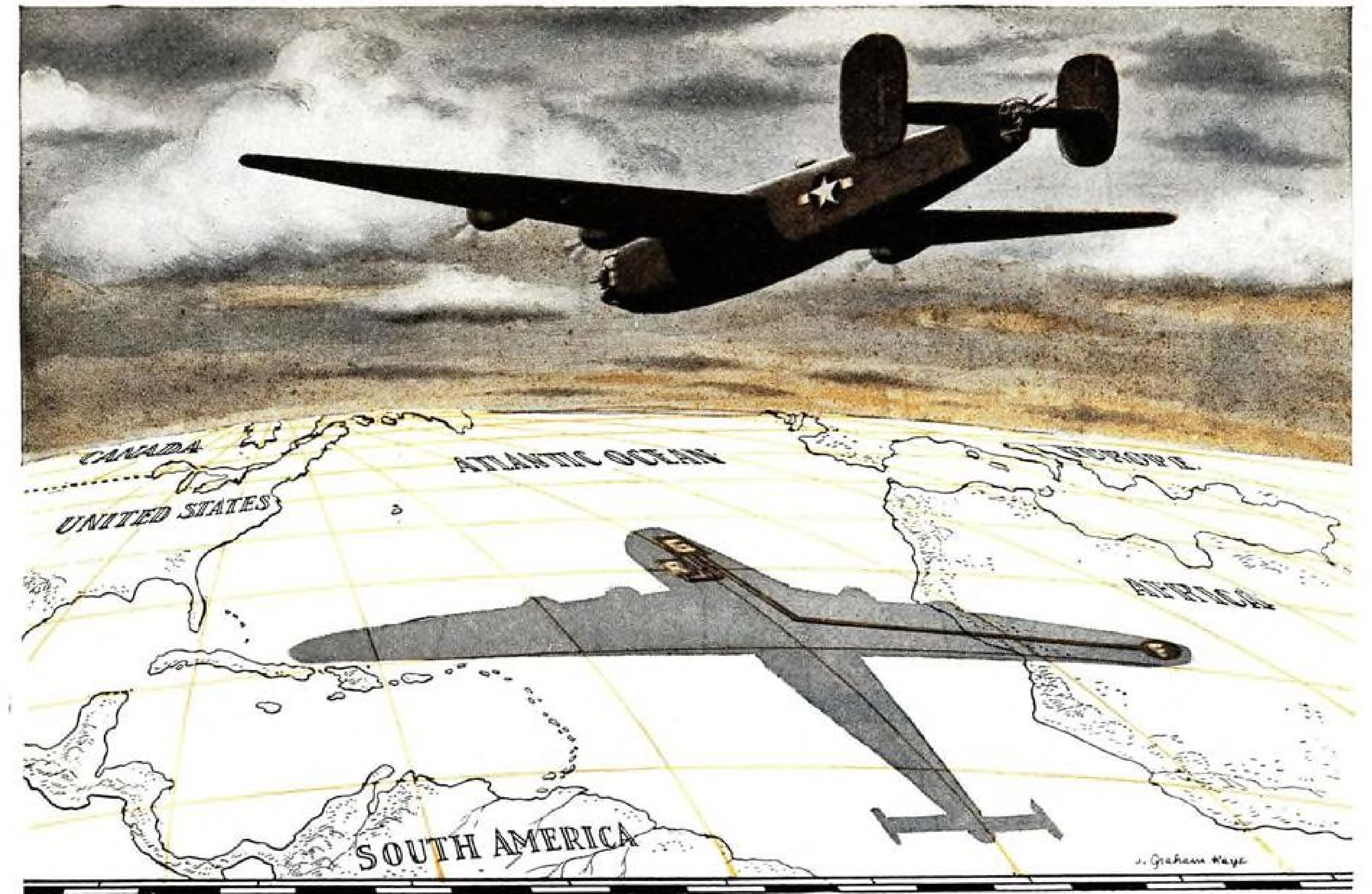
Story of how an unknown artillery liaison observer flying an unarmed *Cub* observation plane through terrific anti-aircraft and ground fire, directed American artillery fire to rescue a "lost company" of American soldiers, encircled by the Nazis in France near Mountgardon, was told recently by 1st Lieut. Ralph Graves, who was in the surrounded force. Graves revealed the incident during a recent visit with his father, Henry B. Graves, safety director of Embury-Riddle School of Aviation, Miami, Fla.

The observer spotted the isolated group, Graves said, and radioed to artillery batteries which dropped a curtain of shells on the Nazi position to cover withdrawal of the Americans.



Seaplane Handling Systems to Speed Service: General view, above left, shows artist's conception of how the Glenn L. Martin Co. would handle flying boats of the *Mars* type at heavy traffic centers. Right: how

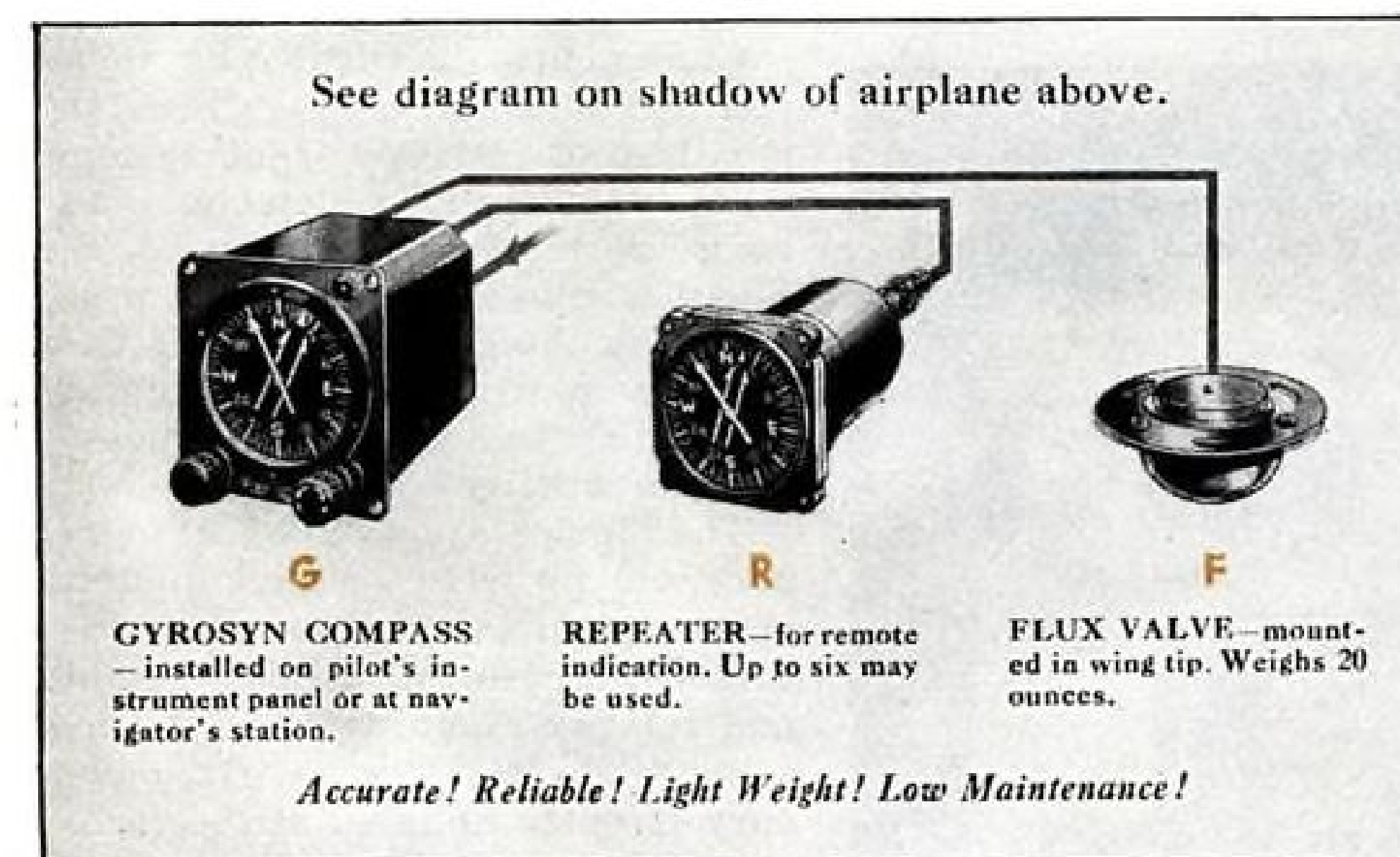
it would be done at isolated ports of call. Note the self-contained rail-mounted hoist for loading and unloading. The Martin Co. is making a bid for the international market with commercial flying boats.



Sperry Gyrosyn Compass

The Directional Gyro with Magnetic "Sense"

See diagram on shadow of airplane above.



THE Sperry GYROSYN Compass is a directional gyro synchronized with the earth's magnetic field.

It combines the functions of both a Directional Gyro and a Magnetic Compass... deadbeat indication, accurate magnetic headings... without northerly turning error or resetting.

The GYROSYN Compass is an electrically driven directional gyro precisely controlled by a Flux Valve to indicate magnetic heading directly or through Repeaters.

The Flux Valve is a device for detecting the direction of the earth's magnetic field. Its design provides light weight, hermetic sealing, and small size for rigid mounting in the wing tip. It has no rotating parts.

The GYROSYN Compass weighs only 10 pounds including one Repeater. Provision is made for additional repeaters and for furnishing azimuth stabilization required by any other equipment.

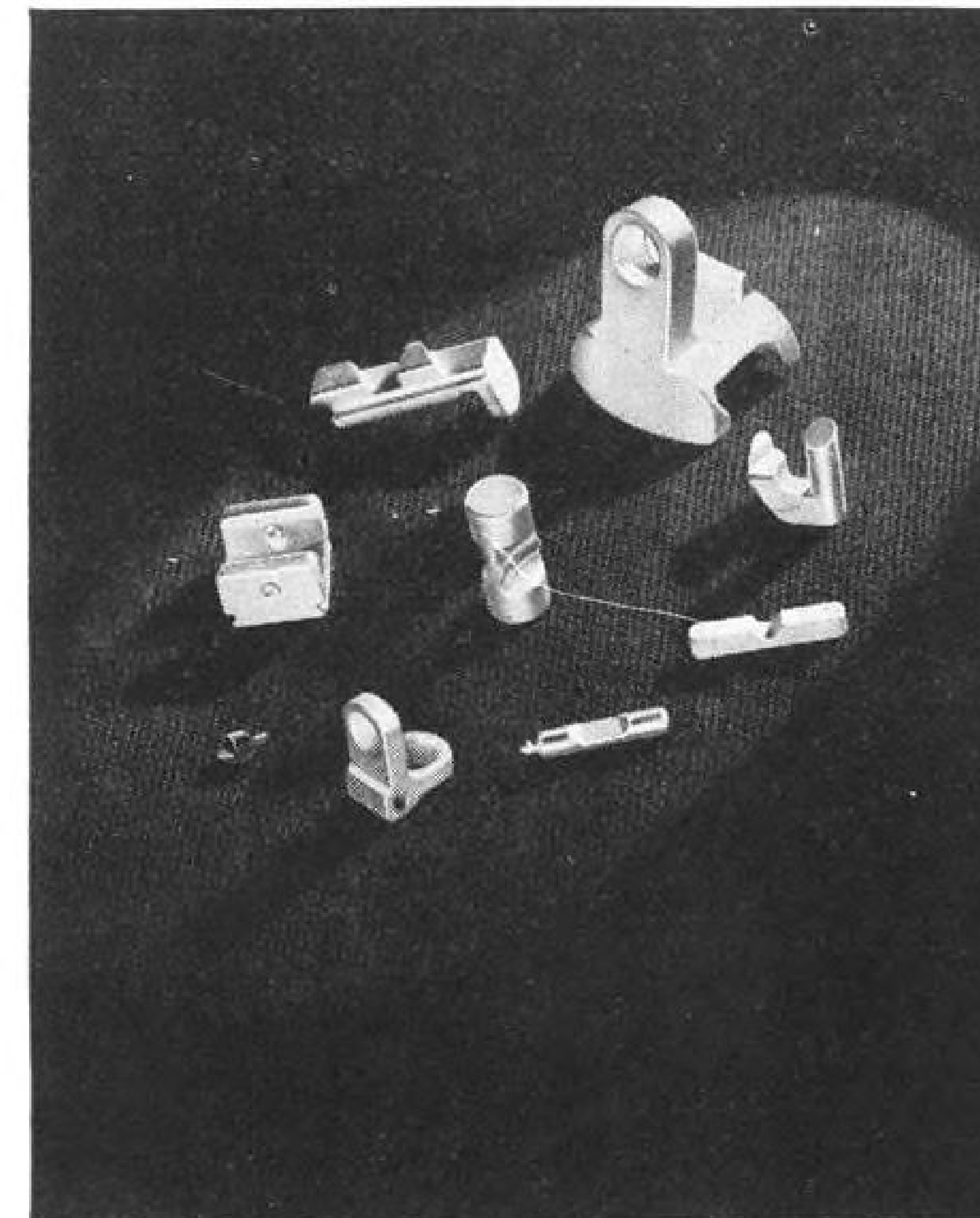
Sperry Gyroscope Company INC.

GREAT NECK, NEW YORK • DIVISION OF THE SPERRY CORPORATION

GYROSCOPICS • ELECTRONICS • AUTOMATIC COMPUTATION • SERVO-MECHANISMS

AVIATION NEWS • November 13, 1944

WADSWORTH SKILLS

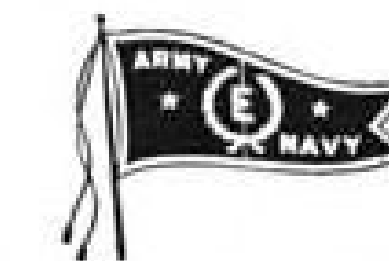


... built up through half a century of leadership in the exacting Watch Case Industry will be available soon to many manufacturers who will require large quantities of small precision parts for their postwar assemblies.

Work of this character is now being supplied to many leading companies which normally produce radio equipment, refrigerators, automotive parts, precision instruments.

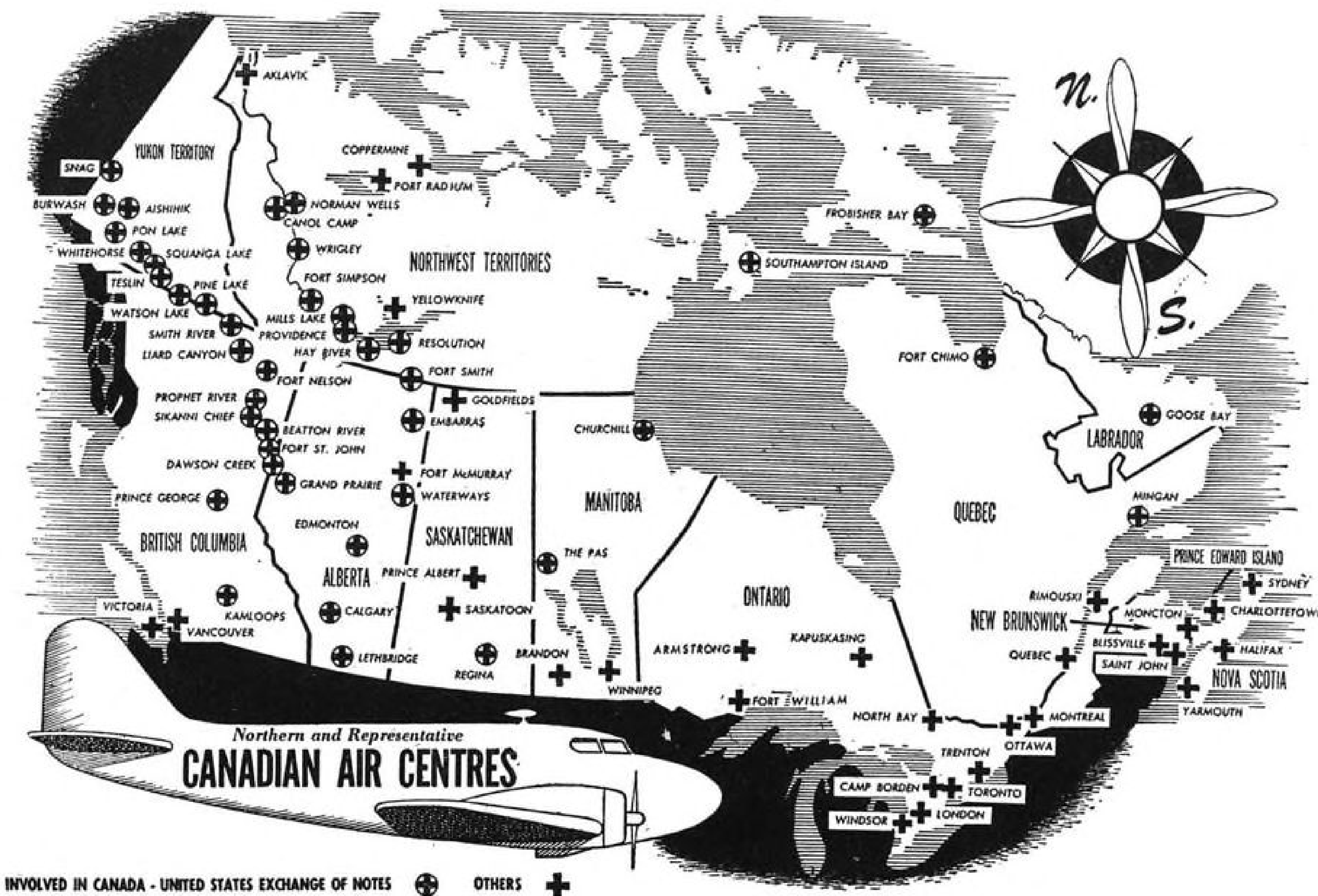
Illustrated are nine small components of an Ordnance assembly which Wadsworth furnishes in great numbers. The production of these pieces, which are held to very close tolerances, brings a score of special Wadsworth facilities into play.

Wadsworth workers' feeling for precision and their ability to get work out on time will ease postwar headaches for many producers.



SMALL PARTS DIVISION

THE *Wadsworth* WATCH CASE CO., Inc.
DAYTON, KENTUCKY, SUBURB OF CINCINNATI, OHIO
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INVOLVED IN CANADA - UNITED STATES EXCHANGE OF NOTES ⊕ OTHERS ⊕

New Canadian airfield map shows airfields for which Canada reimburses the United States for construction costs of \$76,811,551. Other Canadian airfields also are shown.

Data on Canadian Port Outlay Revealed

Map is released showing sites of U.S.-built airfields taken over by Dominion for \$76,811,551.

Details have been revealed at Ottawa by the Canadian Wartime Information Board as to cost of construction of airfields on the Alaska route and the Hudson Bay route built for military purposes in Canada by the United States and recently taken over by the Canadian government for \$76,811,551 (AVIATION NEWS, Aug. 14). A map also has been released showing location of the jointly-built ports and other Canadian airfields.

► **Breakdown** — Figures released show Canada is paying \$31,311,196 for the United States' share of the construction of the Northwest Staging Route (to Alaska), \$3,262,687 for flight strips along the Alaska Highway, \$1,264,150 for flight strips along the Mackenzie River (for Canol oil development), \$27,460,330 for the Hudson Bay route (to Greenland), \$3,627,980 for the airfield at Min-

gan, Que., \$543,000 for work at the airfield at Goose Bay, Lab., and \$9,342,208 for the telephone-teletype line from Edmonton to the Alaska boundary.

Canada assumed costs incurred on United States' account of \$34,761,643, consisting of \$18,359,953

on the Northwest Staging Route, \$1,290,010 on the Hudson Bay route, \$9,950,680 on the Goose Bay airfield, and \$5,161,000 on projected Northwest improvements.

New Ceiling Meter

Consistently accurate daylight readings of cloud ceilings through a pulsating mercury light system with photoelectric detector has been developed by the U. S. Weather Bureau and is being produced by the General Electric Co. With the system, clouds as high as two miles can be quickly measured in daylight.

The device consists of a mercury arc projector, a pickup unit and a recorder providing a continuous record of ceiling height and relative cloud density. A tiny super-high-intensity quartz mercury lamp is mounted at the focus point of a searchlight mirror to throw a 120-cycle-per-second pulsating beam directly into the sky. The pickup unit is situated 1,000 feet from the projector and is tuned to the same frequency as the light pulse in order to pick it up from background light.





PENNIES PROTECT MILLIONS

Prottek-Plugs • the Modern Moisture Removal Method

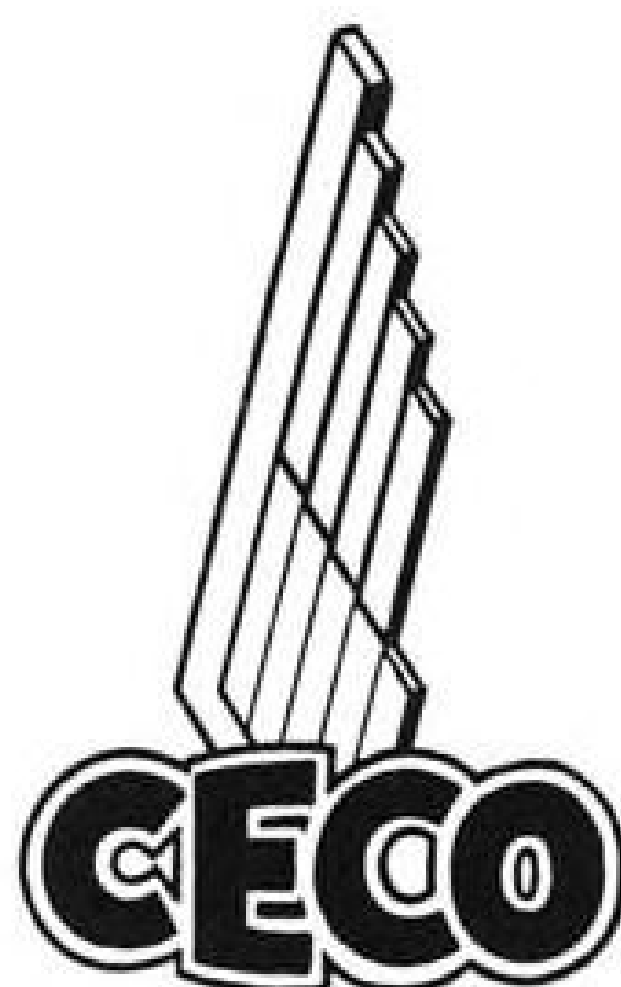
It began with aircraft engines. Once, it took many hours to remove the grease that was necessary to protect the cylinders of engines in transit.

Today, Prottek-Plugs are removed from the spark plug openings, the spark plugs are installed, and in minutes, the engine is ready for service.

Prottek-Plugs are hollow, transparent plastic containers, filled with Silica-gel, a material practically chemically inert, with a tremendous capacity for water. They remove corrosion-producing moisture from the cylinder walls by adsorption. When the Silica-gel approaches saturation, the plugs signal "Danger", as their color changes gradually from bright blue through violet to pink. The spent plug is then replaced with a fresh Prottek-Plug.

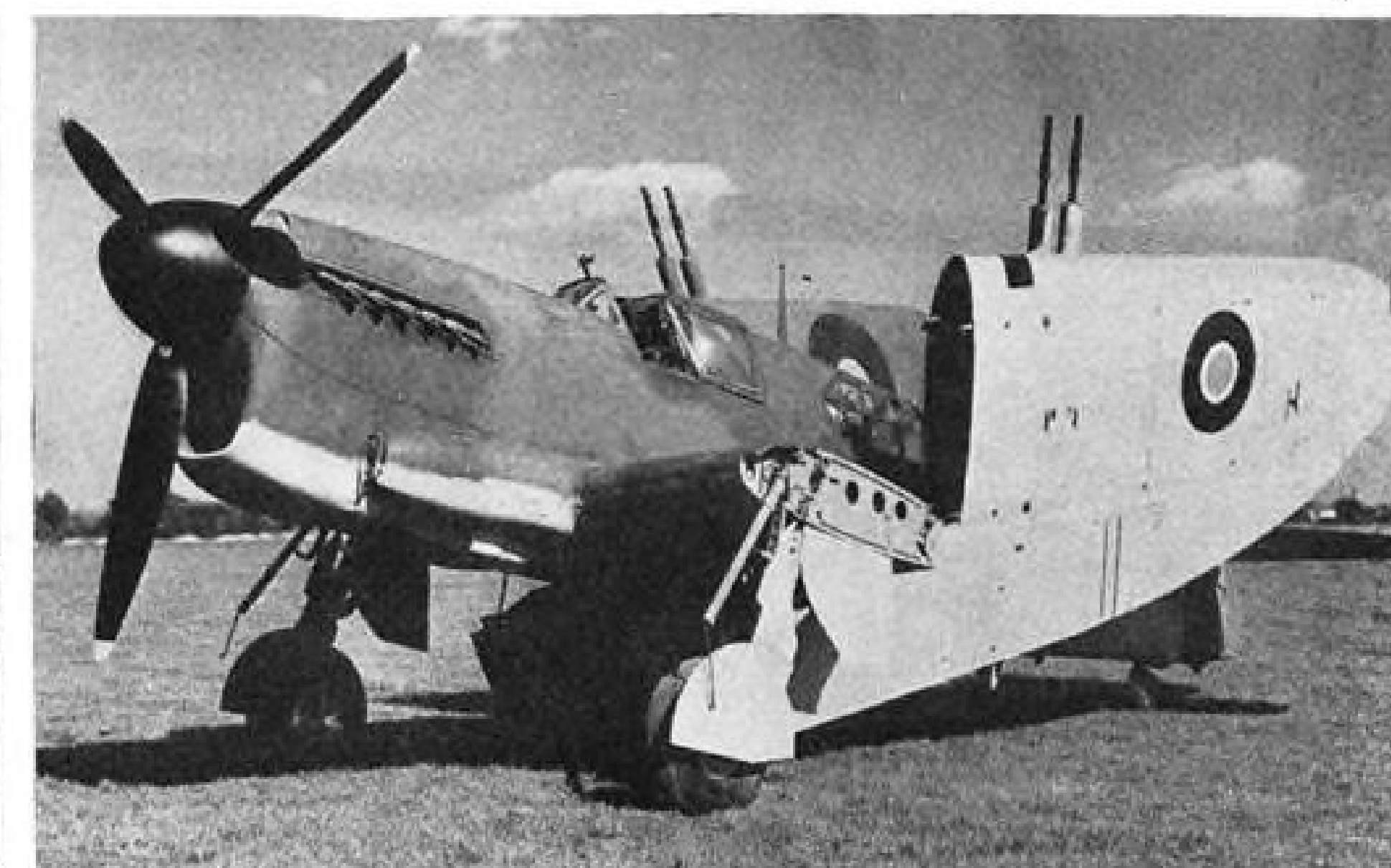
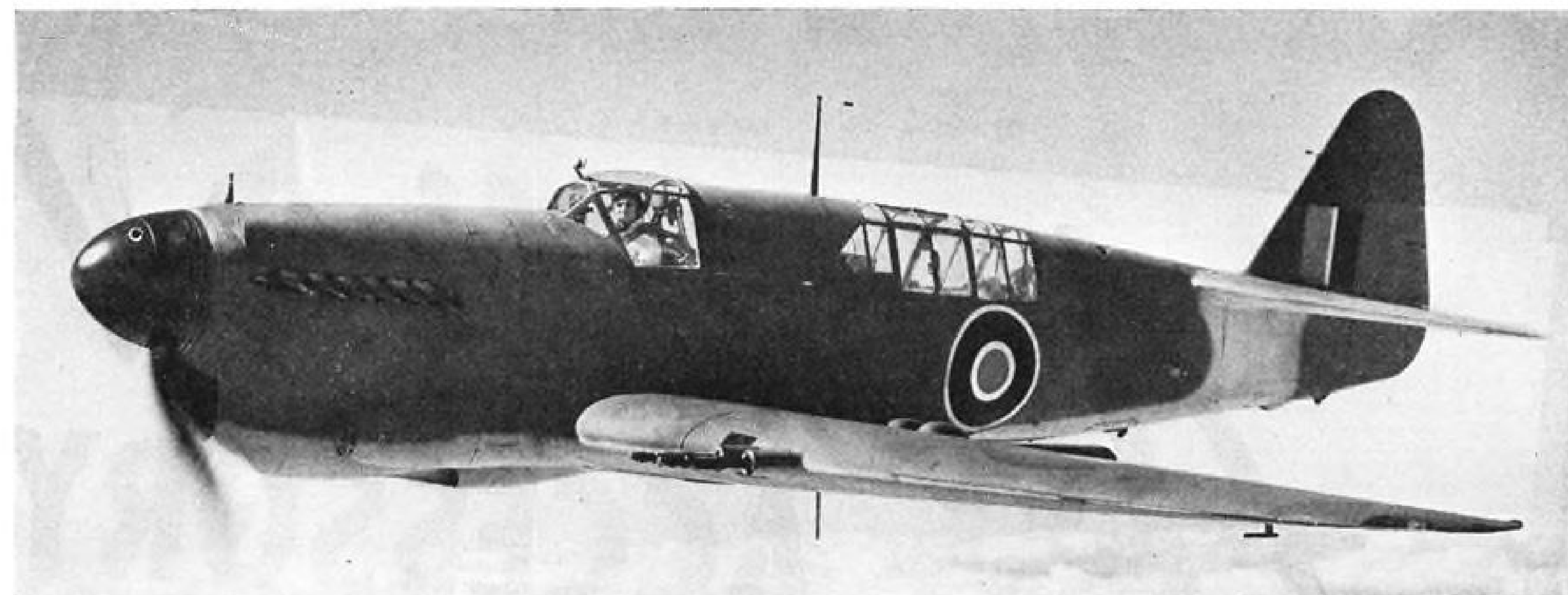
Prottek-Plugs are at work today by tens of thousands, not only in aircraft engines, but in delicate mechanisms of all kinds. There is ample proof of their value from every battle front. Costing pennies, they guard vital war equipment worth millions.

Tomorrow, this war-born product will protect more than the engines of aircraft in transit and in storage. It will find dozens of other jobs guarding the commerce of peace from moisture damage. Write for our illustrated booklet on Prottek-Plugs.



CARBURETORS
FUEL PUMPS
PROTEK-PLUGS

CHANDLER-EVANS CORPORATION SOUTH MERIDEN, CONNECTICUT, U. S. A.



New British Naval Air Fighter for Pacific: This new already gone into service. Note the unusual folding heavily armed fighter reconnaissance plane—the wing arrangement. The Firefly is fitted with four Firefly which will operate from British carriers has 20 mm. cannon and equipped with a camera.

British Reveal Data On Fairey Firefly

New reconnaissance-fighter disclosed as having participated in attacks on battleship Tirpitz.

Some details of the Fairey Firefly, classed by the British as a fighter-reconnaissance plane, have been revealed by the British after its participation in several aircraft carrier attacks on the German Battleship Tirpitz in Norway. It is one of a series of British planes designed particularly for shipboard operation and not merely adapted from land-based types, such as the new Seafire.

The Firefly is powered with the new 12-cylinder Rolls-Royce Griffon, more powerful successor to the Merlin, and rated at better than 2,000 hp. A three-blade Rotol propeller is used. Carrying a crew of two, it has a span of 44 feet, six inches, is 37 feet long and 13 feet 7 inches high. Armament re-

vealed consists of four 20 mm. cannon mounted two in each wing. The wings are folding type and undercarriage and flaps are operated by a Lockheed hydraulic system.

► **Prepare for Pacific Action**—The British have been getting quantities of American carrier fighters and other types in preparation for Pacific action. The Firefly has been used in strafing operations, and evidently is not intended to operate in purely fighter actions against the Japanese.

Gunners to Join Surplus Stocks Soon

Transfer of most, if not all, of the Fairchild AT-21 Gunners to surplus in the near future will close one of the most fantastic plane construction stories of the war. Some 200 were constructed, it is understood, in different models changed as service needs for advanced trainers shifted.

The Gunner was built in a factory located, at government direction, in an area where the labor supply was totally untrained in plane construction skills and operations. Production operators were never entirely satisfactory.

► **Put to Various Uses**—It is one of the most efficient ships of that general type designed, yet it never seemed to fit into service needs. At times it was built as a bomber crew trainer, as a transitional trainer, as a gunnery trainer, as a bombardier trainer and it has been used as a personnel transport and a utility cargo plane.

It is probable that the surplus stocks will be sold in other countries, where it is in demand as a trainer and as a reconnaissance and photographic plane because of its exceptional performance at high altitudes. The design may be used in foreign manufacture, but it probably will not again be built in this country.

The Gunner can be converted to an eight-place transport.

Attention! AIRCRAFT ACCESSORY DEALERS!

Here's Another Firestone FIRST...

A New Franchise that Builds Your Business and Assures MORE PROFIT!

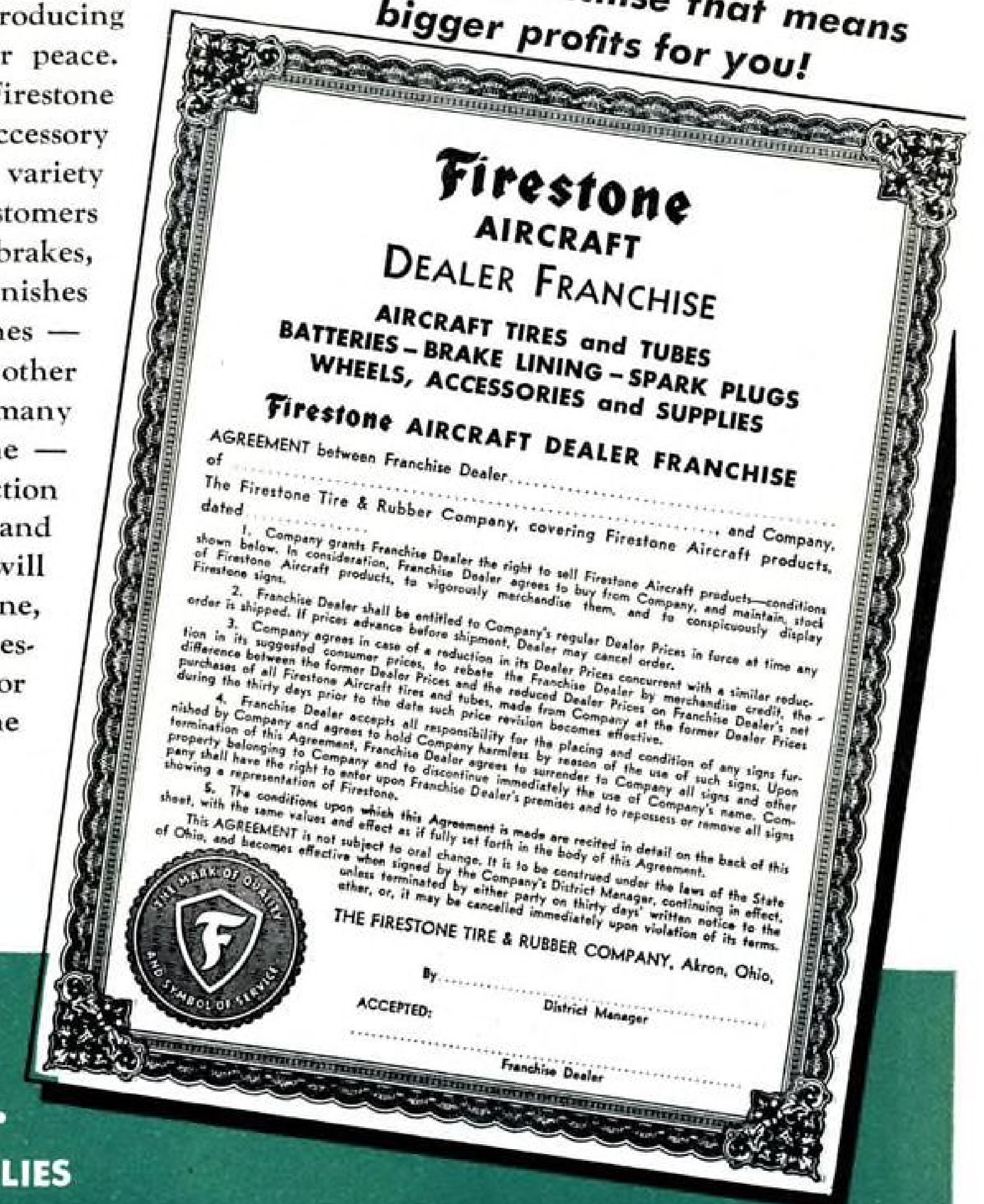


FOR many months Firestone, while producing for war, has also been preparing for peace. And as a first step in its postwar plans, Firestone announces a new franchise for aircraft accessory dealers which provides them with a wide variety of high quality merchandise that their customers want and need — tires, tubes, wheels, brakes, brake lining, batteries, spark plugs, finishes and many other products for their planes — jackets, gloves, sun glasses and numerous other items for themselves. And after victory, many other products may be added to the line — radio transmitters and receivers, radio direction finders, binoculars, field glasses, cameras and other equipment that private flyers will require. So sign up NOW with Firestone, the first Company to provide aircraft accessory dealers with a complete franchise. For full information, write or wire — or phone HEMlock 1671, Akron 17, Ohio.

For the best in music, listen to the "Voice of Firestone" with Richard Crooks and Gladys Swarthout and the Firestone Symphony Orchestra conducted by Howard Barlow every Monday evening over NBC network.

Copyright, 1944, The Firestone Tire & Rubber Co.

Here's the franchise that means bigger profits for you!



Firestone AIRCRAFT COMPANY, AKRON, OHIO; MAKERS OF
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When Clifford's THIN-METAL KNOW-HOW } WEIGHT }
 discovered THIN ALUMINUM BRAZING... } SAVING = $\frac{2}{3}X$

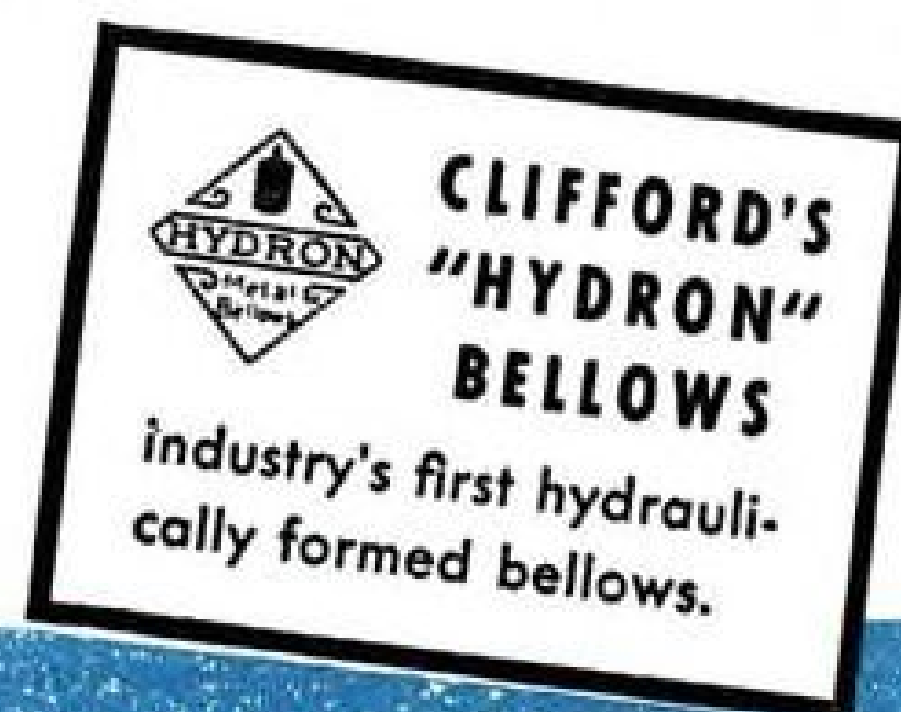
By removing *copper* oil coolers and coolant radiators from one of their famous fighters and dropping in *aluminum* models — without any design change — weight-conscious engineers of the U. S. Army Air Forces saved approximately 120 precious pounds.

This vital victory over weight — symbolized by $\frac{2}{3}X$ (where X equals the weight of soft-soldered copper coolers and radiators) — was made possible by Clifford's discovery of the elusive method of brazing aluminum tubes having very thin walls.

Already battle-tested on wide-spread fighting fronts, Clifford's Feather-Weights are now being applied to another Army Air Forces' fighter. Here the potential weight-saving is approximately 320 pounds.

Less weight, greater resistance to heat and pressure, longer life — are the results when aluminum replaces copper in aircraft oil coolers and radiators.

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 562 E. First Street
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CLIFFORD
Feather Weight
OIL COOLERS AND COOLANT RADIATORS
 Save $\frac{2}{3}$ The Weight
 ... same size and shape

PRIVATE FLYING

Federal Works Agency Takes Hand in Post-War Port Planning

White House, Budget Bureau and Army and Navy also expected to play important roles in development of airfields throughout country.

By BLAINE STUBBLEFIELD

Federal Works Agency has taken a hand in post-war airport planning. So has the White House, and the Budget Bureau, and the Army and Navy. Political job-making is assuming importance in the airport program. President Roosevelt mentioned airports twice in his campaign speeches.

Some weeks ago the Civil Aeronautics Administration wrote a report, in accordance with a formal request from Congress, recommending a post-war air field development plan, mostly for private flying.

► **Sent to Budget Bureau**—The report went to the Budget Bureau, in conformity with an executive order, for examination in relation to other proposed public works, and for any suggestions the Bureau might have. For some time the Bureau held up the report, much to the annoyance of some CAA officials and others interested in airport progress.

The Budget Bureau recently sent the report back to William A. M. Burden, assistant Secretary of Commerce for Air, with several notations not yet made public. Among the notations, however, was one pointing out discrepancies between data submitted by CAA and by the Federal Works Agency, which has been making an airport survey in connection with its post-war public works proposals.

► **653 Port Projects**—FWA finds, in its report, that 344 non-federal government units, meaning states, counties and municipalities, are planning a total of 653 airport projects of all kinds, which will cost a total of \$510,225,000. Of this amount, \$25,824,000 is on hand, \$13,439,000 is being negotiated for, and the balance is still to be raised.

Presumably the local governments having these airport plans expect Federal aid funds in some proportion, as result of proposals

made in public addresses by CAA officials, and in airport bills before Congress, notably the Randolph bill. At any rate the figures are nebulous, for they are not only merely replies to a questionnaire, but they include projects in construction progress, in the design stage, and just gleams in city fathers' eyes.

► **20,000 Suggested by ACCA**—Even though FWA's report of airport projects means little or nothing in terms of the need for airports, nevertheless CAA airport specialists will have to write up further justifications for their own proposals which, it is taken for granted, are for about 3,000 airports, nearly all for private flying, and calling for something like 50 percent of Federal funds to be matched with local funds. One point they may make when they send the document to Congress is that the Aeronautical Chamber of

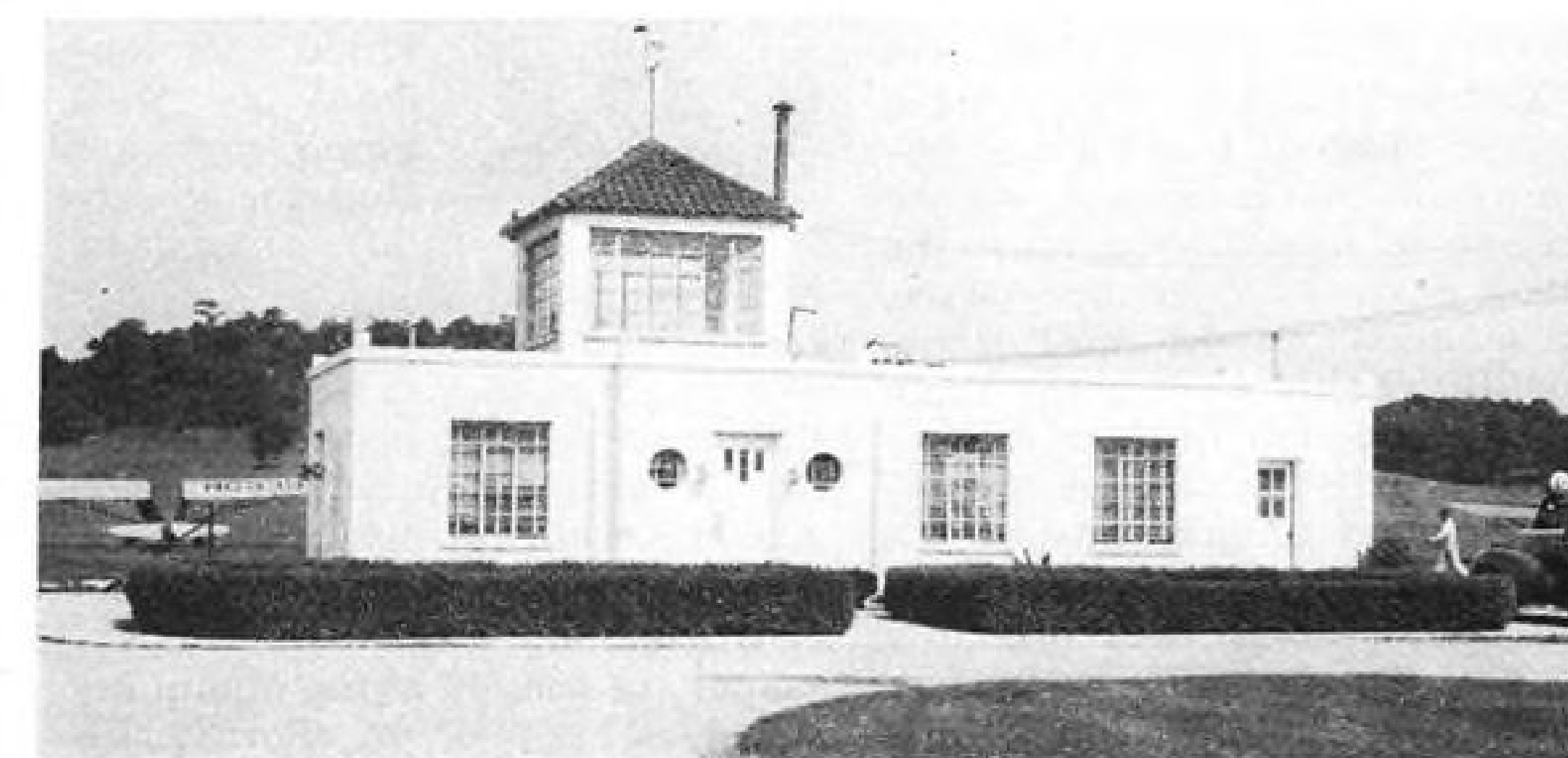
Commerce has suggested 20,000 airparks as a starter. And anybody who adds up airfield requirements, city by city, taking Washington, or St. Louis for example, finds startling totals for the nation.

There is no doubt that a large airport program will be approved by Congress early next year. Practical need for the facilities has strong political backing, as also has the job-making factor.

► **AAF Program**—National Aeronautic Association, in its Nov. 4 *Newsletter*, says both the Army Air Forces and the President are preparing airport plans. NAA sources are not revealed. Investigation by AVIATION NEWS indicates the White House has taken an interest in the Federal Works activity above described.

AAF merely states now, as it has in the past, that it is conducting a continuing inquiry into the disposition of its airports not needed after the war. This refers not to those built and leased to Army by CAA, but to those built by the Army itself.

Army has been racking its brain and still does not know what a surplus airport is good for. Which fields to keep for peacetime operations cannot be determined until the Government knows what sort of peace will be concluded, they say, and in turn what size and type of air forces will be maintained. Those airports not needed will become instant battle grounds of politicians who want to keep them going. But such problems, and actual disposition of the ports, will



SMALL AIRPORT ADMINISTRATION BUILDING:

The neat, white administration building of South Dayton (Ohio) airport, above, is an example of what can be done at relatively small cost, to dress up the personal plane airport. Besides the tile-roofed control tower, the building includes a lounge for pilots and other visitors, rest-rooms, operations office, and private office for the operator, Gerald Chatterton. The modernistic building is of cinderblock construction finished in stucco, and the shrubbery, and neat gravel driveways add to its attractiveness.



FLYING GOVERNOR:

Ellis G. Arnall, governor of Georgia, left, is shown at the end of a 4,000-mile air trip through the Middle West, and J. W. Weaver, Southeastern Air Service pilot, who flew the governor on the six-day trip.

devolve upon the Surplus Property Administrator, not the Army.

► **Inquiries on Leasing**—Army and CAA have received some inquiries from persons interested in leasing fields after the war. But military opinion is that the Air Force and Navy air arm fields declared surplus will be of little commercial use.

All fields built by CAA, and turned over to the Army and Navy for emergency use, were sponsored by municipalities or counties. There were no state sponsors. Sponsorship is a rather vague term. The government paid for the fields (about \$400,000,000) and the sponsors "leased" them to the services. Most of these leases expire within six months after the cessation of hostilities against the United States. Under the leases, civil aviation can use most of the fields in conjunction with Army or Navy, but some of them are exclusively military. If Army or Navy wanted to take any of the CAA fields for permanent use either could do so, but probably will not. These fields are nearly all located within commercial reach of cities, and they are expected to meet the needs of main-line scheduled air transport for some years to come.

► **Cities Furnished by Cities**—The cities furnished the land, in nearly all cases, while CAA furnished materials and labor for runways, buildings, and some of the aids to flight. The cities agreed to take over the fields after the war and

operate them. Just what will happen if certain cities find better locations, and want to build new fields and abandon CAA property, is not known. In the one test case so far, the city was talked into keeping the airport in reserve.

Despite frequent official statements that the bulk of airport expansion will be for private and other non-scheduled aviation, many local governments are still uncertain what plans to make. National Aviation Trades Association's bulletin editor states that, in attending several recent airport conferences, he found conflicting advice being given to airport planners. He has written a primer lecture on the subject which every responsible airport official ought to read.

Riddle Reports Gain In Brazil Aviation

Growing aviation consciousness in Brazil is reported by John Paul Riddle, operator of the American-staffed Escola Tecnica de Aviacao at Sao Paulo, Brazil, on his return to Miami where he is spending a month at his instructors' school.

While original capacity of his Brazilian school has doubled, the waiting list continues to mount, with enrollment from every state.

One boy walked 1,000 miles to Sao Paulo to apply, and a number of the unsuccessful applicants have found employment at Sao Paulo and are studying to satisfy entrance requirements.

► **Approved By AAF**—The school was established last November by Riddle, at request of the Brazilian Air Ministry, and with the approval of the Army Air Forces. American flight and ground school instructors and administrative personnel are trained at the Miami instructors' school, in Portuguese and in Brazilian customs before being sent to South America. Students at the Sao Paulo school are trainees for the Brazilian air force.

Riddle expects the awakened aviation interest in Brazil, as a result of the military training now being given, to have a far-reaching effect in post-war civil aviation relationships between the United States and Brazil.



Briefing

For Private Flyers and Non-Scheduled Aviation.

By ALEXANDER McSURELY

If for no other reason, although there are many other reasons, the NATA St. Louis convention, Dec. 5-9, should be worthwhile on account of the flight demonstrations scheduled for new prototypes of personal aircraft, built by various manufacturers. Plan is to limit demonstrations to distributors, dealers or agents. Some of the most desirable personal planes may not be ready by that date, but a good representation is expected. Re-opening of the old St. Louis Forest Park airstrip for the demonstration is planned.

► **Pilots' Lounge**—At Columbia, S. C., municipal airport, Hawthorne Flying Service, the operator, has remodeled the municipal hangar to provide a pilot's lounge complete with red tile floor, fluorescent lights, easy leather chairs and divans, photo murals and wall regional maps.

► **How to Fly**—While no book will ever take the place of actual flight instruction, the new little "How to Fly" book written by dependable Rex Cleveland, is worth while reading for almost any flyer, and full of essential information that would-be pilots and flying students should learn eventually, one way or another. It's free for the asking, by writing to MacGregor-Goldsmith, Inc., John & Findlay Streets, Cincinnati.

► **Plane for \$5**—Wind-damaged surplus planes, mostly small liaison types without engines, sold for prices ranging from \$5 up to \$9,000 at an auction held at Patterson Field, Dayton, recently. A Cleveland bargain-hunter bought an Aeronca, sans engine, and in a "messy condition" for a \$5 bid. The 160 planes, and three gliders, brought a total of \$51,000. Of the number 46 were Taylorcraft L-2s, 108 Aeronca L-3s, and one each Piper I-4, Interstate L-6, Lockheed AT-18, Beechcraft UC-43, and North American O-47.

► **Answers Forthcoming**—Oklahoma City's Second National Aviation Clinic Nov. 15-18, should offer answers to many of the questions about personal aviation. Scheduled are talks on the post-war personal plane, its utility, markets, marketing methods, and airports and airstrips, by some of the best brains in the aviation industry.



NAVAL RESEARCH HANGAR. For this hangar (260' x 110') Timber Structures fabricated 226' glued laminated bowstring trusses (world's largest). Hangar designed by Bureau of Yards and Docks. Contractor: Standard Construction Company.

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Our business is the prefabrication of timber trusses, columns, arches, bridges and other heavy items. Because Timber Structures engineering, manufacturing, shipping and erection service is highly organized, we have been privileged to work closely with the aviation industry, governmental agencies and the armed services in emergency, permanent construction of many kinds. For example:

1. Aviation manufacturing plants for the production of airplanes and parts.

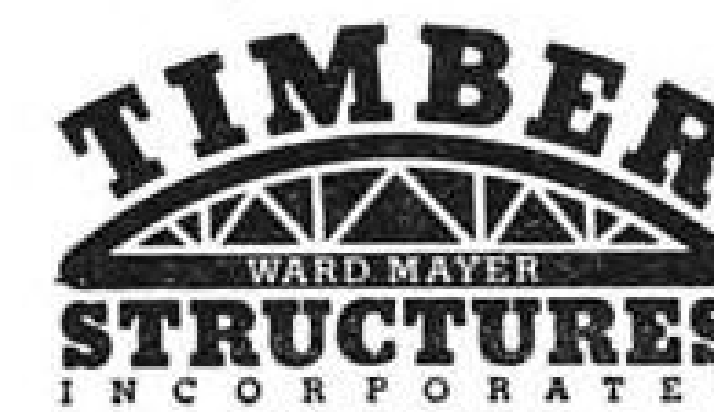
2. Miscellaneous aviation housing for Boeing and others.
3. Warehouses, hangars, varied structures for the Army and Navy.

Many assignments we are not permitted to discuss, but all of them, war and pre-war, have resulted in organ-

ization technique that is available to you for post-war construction.

Wouldn't this be a good time for you to check into the economy, strength, low maintenance and permanence of timber as a building material? A new book of our work "Engineering in Wood" is available on request. We're prepared to serve you in timber, allied structural materials.

Engineering in Wood



Portland 8, Ore. New York 17, N. Y.



SCOUTS SOLO PARKS ERCOUBE:

Can a boy of 16 drive the family airplane of the future? On the basis of an actual training test, Parks Air College, East St. Louis, Ill., reports that boys of high school age can solo a non-conventional Ercoupe type plane quicker than adults. Actual training showed six Boy Scouts, ages 16-17, absorbed flight instruction quicker than older trainees, were ready to fly the plane after 3 hours 10 minutes average dual instruction. The soloing youngsters, from New Jersey, Wisconsin, Ohio, Missouri and Illinois, are shown above with the plane they soloed.

NATA, ADMA Meet In St. Louis Dec. 5-9

More than 150 exhibits of planes, instruments, flying aids, etc., already booked.

Incomplete preview of what the private flyer may expect to be able to buy post-war in the way of airplanes, instruments, flying aids, propellers, engines, parachutes etc., will be on display at joint conventions of National Aviation Trade Association, and Aviation Distributors and Manufacturers Association, at the Hotel Jefferson, St. Louis, Dec. 5 to 9.

More than 150 exhibits have already been booked at the hotel, and arrangements for manufacturers to demonstrate post-war prototype planes at small airports in the St. Louis area have been completed. While a number of post-war models are not far beyond the drawing board stage, and others are still under secrecy wraps, it is understood that several manufacturers which have planes now flying expect to use the St. Louis occasion to unveil their bids for the post-war personal plane market. Convention rules specify that the display of planes will not be a public affair, but limited to

distributors, agents or dealers, although it is probable that this rule may be relaxed in some circumstances.

► **Over 1,000 Expected** — Attendance of more than 1,000 is indicated by advance registrations.

Speakers at the NATA meetings, at which Col. Roscoe Turner, Indianapolis, president, will preside, will include: William A. M. Burden, assistant secretary of commerce; L. Welch Pogue, CAB chairman; J. Carleton Ward, president of Fairchild Airplane and Engine Corp.; Carl I. Friedlander, vice-president of Aeronca Corp.; Thomas H. Beck, publisher of *Colliers'* and others not yet announced. The program arranged by Clarence R. Mooney, convention chairman, leaves mornings free of scheduled events, and will include panel discussions on feeder airlines, private flying, legislative and finance-insurance problems.

ADMA's convention, with President Ray Snyder, Chicago, in charge, will include talks by Joseph T. Geuting, Jr., chairman of the Personal Aircraft Council of the Aeronautical Chamber of Commerce; and Leslie E. Neville, editor of *Aviation*, on personal aircraft and market outlook, and discussions of various manufacturing and distribution problems by other

speakers. The program also includes joint meetings of the two groups.

UPMA Formed to Aid In Airmen's Problems

Recently organized group already reported to have membership in 19 states.

The recently formed United Pilots and Mechanics Association, which has offices in the Carry Building, in Washington, and membership already extending into 19 states, announces its aims and purposes are to promote adequate regulation for pilots, mechanics and technicians; to obtain a proper understanding of its members' problems within the CAB and CAA, and to make investigations, studies and recommendations to CAA, CAB and Congress on civilian flying, non-scheduled aviation and public safety.

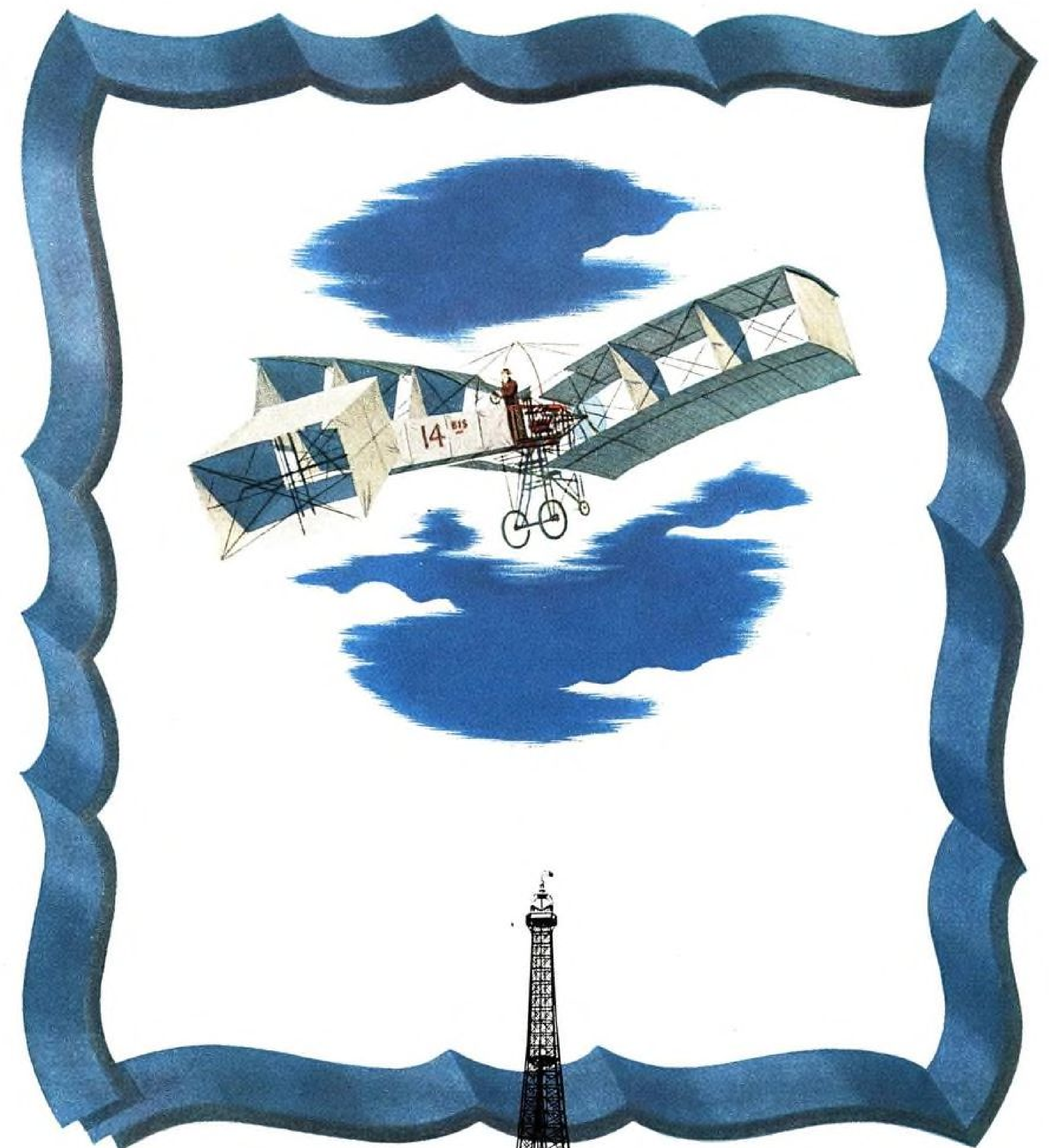
Officers are: L. Alton Denslow, president; Cranfill Fowler, vice-president; V. G. Landrum, secretary-treasurer. Denslow is a member of a Washington law firm, Fowler a former Corps of Engineers employee at Dallas, and Landrum a former employee of the War Department at Dallas and Washington. All three men are regarded as well-experienced in governmental and departmental procedure.

► **Non-Profit Group**—Incorporated as a Delaware non-profit organization, the association seeks to act as a clearing house for the non-commercial and fixed base operation phases of aviation.

Current projects of the association include study of Civil Air Regulations for further simplification and revisions, studies for eliminating cumbersome and unnecessary administrative red tape, and tabulating membership opinion on various proposals for modifications.

A recent survey was conducted by UPMA on CAB's regulations permitting licensing of pilots with structural physical defects after they demonstrate by satisfactory flight test that their experience, ability and judgment compensate for their disability. The poll showed an overwhelming majority in favor of the regulation.

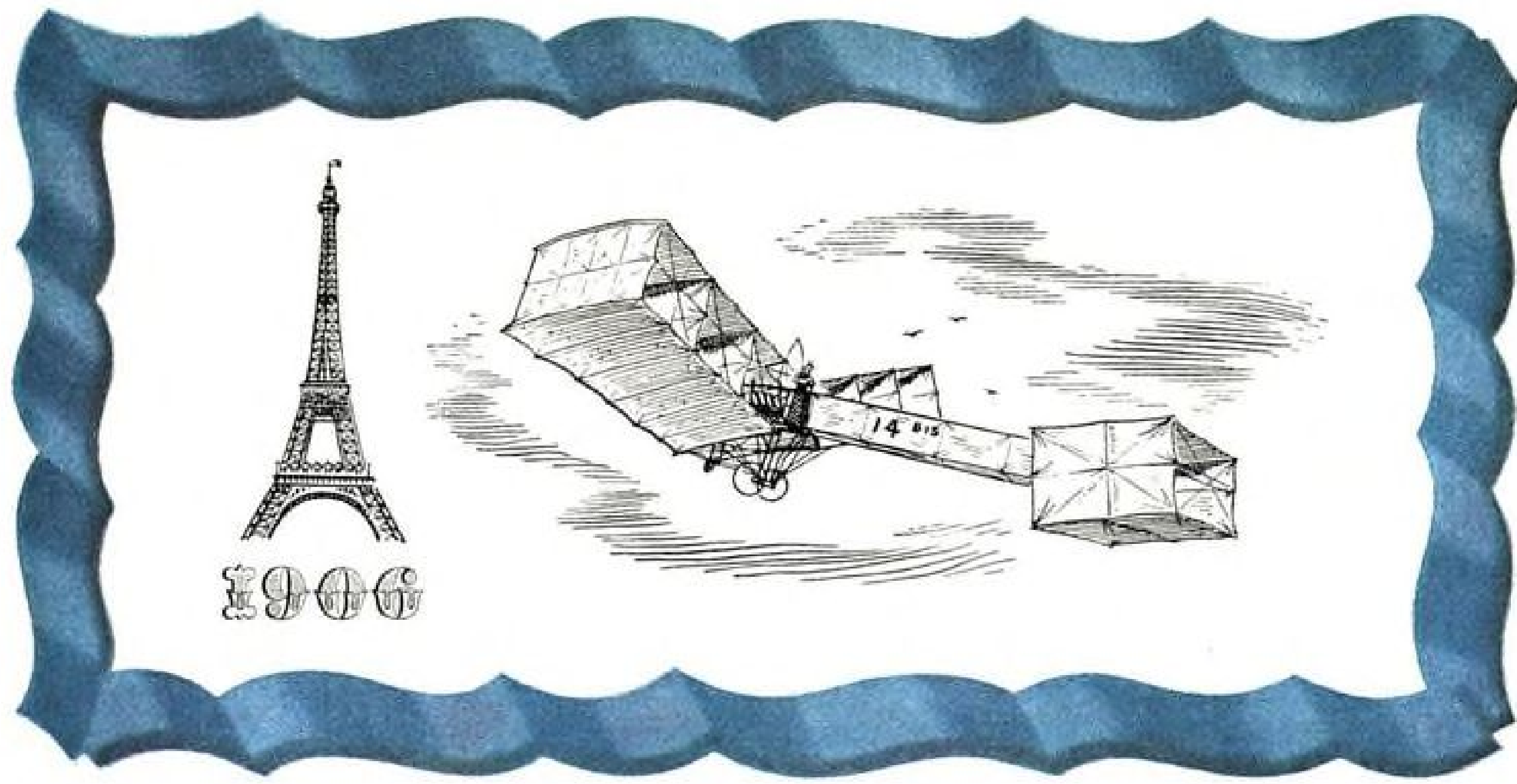
A monthly newsletter with items of particular interest to private pilots, mechanics and fixed base operators, and special news bulletins on emergency matters, are other services of the new group.



SETTING NEW STANDARDS
IN AIR TRANSPORTATION

IN 1906, Santos-Dumont set new aircraft standards by flying 200 yards four times in a day, attaining a height of several feet and 23 m.p.h. without mishap.

IN 1944, the powerful new Lockheed Constellation sets new world standards in air transportation, and is proved to be the largest, fastest, highest flying land transport ever built.



The Lockheed Constellation

HERITAGE OF PIONEERS — CHALLENGE TO TOMORROW

Santos-Dumont's gallant achievement was one of many. Year by year, since the turn of the century, longer, faster, higher flights are recorded in the history of aircraft. Today, with the performance of the Lockheed Constellation—setting new world standards in power, range, payload, and safety—the progress of flight has reached a new level. Despite its size, the Constellation easily takes off and lands on the average airport. Economywise, it surpasses the smaller transport—whether for over-ocean trips or for flights as short as one hundred miles. It commands the weather and terrain. It is the culmination of forty-one years of aircraft pioneering and a challenge to the designers and builders of tomorrow.



LOCKHEED LEADERSHIP SETS THESE NEW WORLD STANDARDS

*Greatest rate of climb of any transport ★ Longest range of any transport ★ Biggest load-carrying capacity of any transport
Highest cruising altitude of any transport ★ Fastest cruising speed of any transport ★ And these performances make the Constellation the safest of any transport.*



QUESTIONS

- Q. Will the Constellation be an "expensive" plane to operate?
—W. T., Portsmouth, N. H.
- A. *On the contrary. Cost per ton mile on flights from one hundred to three thousand miles is less than that of the transports in service today.*
- Q. Is it true that the Constellation can carry 100 troops?
—Sergt. W. T. H., Fort Ord
- A. *In its military version the Constellation can carry 100 troops and their equipment.*
- Q. Why does the Constellation have three tails?
—Mary W., Atlanta
- A. *Big rudder surfaces are needed to control big planes. By distributing the necessary 242 sq. ft. over three equal surfaces, plane is made safer and easier to handle in ordinary-sized hangars.*
- Q. What are the Constellation's dimensions? —C. W. T., Chicago
- A. *Wing span 123 ft., wing area 1650 sq. ft., length 95 ft., height 23 ft. 8 in., from ground to tip of the rudder.*

Send in your questions. Address: Lockheed Aircraft Corporation, Department 69-55, Burbank, California



FOR NEW WORLD STANDARDS IN AIR TRANSPORTATION
LOOK TO *Lockheed* FOR LEADERSHIP

Automatic Take-Off Recorder Developed

Bell & Howell device consists of two movie cameras, two wind indicator units, two control units and analysing projector.

A combination of two motion picture cameras, two wind indicator units, two control units, and an analyzing projector has been devised by Bell and Howell Co. as an automatic aircraft take-off and landing recorder.

This is an improvement on the long-established practice of analysing take-off and landing characteristics of airplanes by means of motion pictures. The Bell and Howell development is announced by Civil Aeronautics Administration.

▶ **Recording Instruments**—The new equipment measures accurately the distances traveled by an airplane along its flight path and records its height at exactly uniform time intervals. This gives the speed and the rate of climb.

Normally, where the flight path follows the center line of the runway, only one camera is used. It is located 1,500 feet to the side of the runway, opposite the point where the airplane leaves or contacts the ground. The camera follows the plane while an electrically controlled shutter exposes the pictures. The motion picture is projected upon a graduated screen, which shows distance and height in terms of time.

▶ **Seaplanes**—In the case of seaplanes, where the camera cannot be precisely located with reference to the aircraft, two cameras are located 1,500 to 2,000 feet apart, but are electrically coordinated so that simultaneous pictures are obtained. A geometric analyzer is then used to project the line of sight from each camera through the imaginary flight paths to a point of intersection. The analyzer was developed by W. & L. E. Gurley Company of Troy, N. Y.

The photographic record includes pictures taken by a second lens of a small panel of instruments indicating wind velocity and direction, a stop watch, a device for counting frames exposed, and other data on replaceable cards. Direction of camera at each interval is recorded on a picture of an arc marked off in degrees. This permits lateral adjustment of the projector screen so that its divisions will be located properly with respect to the projected image of the airplane.



▶ **Take Flight Training:** *Although in his fifties, H. E. Blythe, vice-president and general manager of Goodyear Aircraft Corp., Akron, is the latest of 17 executives of the company to solo as members of the Wingfoot Fliers Club. Left to right, Instructor William Ringgold, Blythe, and another Goodyear flying executive, Russell de Young, vice-president in charge of production.*

Goodyear Executives Learning to Fly

Wingfoot Fliers' Club has 29 members, full time instructor, building and three 65 hp planes.

Typical of the business man flyer's organization which may be found in many companies within the next few years, is the Wingfoot Fliers' Club, at Akron, O., composed of executives and key employes of Goodyear Aircraft Corp., who are learning to fly.

Presently the club has 29 members, a full-time instructor and a full time airplane and engine mechanic, with a flight operations building on the edge of Akron airport, and three 65 hp planes, Piper, Taylorcraft and Luscombe. Ten Goodyear keymen already have won their private licenses and seven others are ready to take their tests. The club plans to add higher horsepower planes for instrument flight training.

▶ **"Never Too Late"**—Latest to solo, H. E. Blythe, vice-president and general manager, although he is in his fifties, declares "it's never too late to learn." Russell de Young, vice-president in charge of production, and Al Goulding, manager of

plant engineering, have already soloed, also. Goulding now holds licenses as free balloon, airship and airplane pilot.

Club roster includes department managers, production men, attorneys and accountants. Admission is passed on by an eight-member committee on basis of applicant's service record with the company, and interest in advancement and aptitude in flying. Flight Instructor William Ringgold has several thousand hours logged. He was at one time a Goodyear police officer before he became a professional flyer.

Chapter Service Unit Of NAA Activated

A chapter service department to provide general and technical aviation information for local units of the National Aeronautic Association has been activated under management of Constance Peterson, who has been an editorial assistant on the NAA magazine, *National Aeronautics*.

Lowell H. Swenson, manager of NAA, in making the announcement said: "The major interest of almost all of NAA's many chapters throughout the country is the promotion of aviation in their own communities. This means they are concentrating largely on establishment or improvement of local landing facilities, particularly for private flying."

▶ **Four Phases**—The new department will provide chapters with information and assistance as part of the national landing facility program of the Association.

The four phases of the service comprise a series of chapter service bulletins; an airport digest, giving monthly reviews of airport information; an airport consultation service; and a series of chapter and state council organization manuals.

Calif. Port Needs

Ray Hess, San Francisco district CAA airport engineer, recently advised state aviation officials that California would need 175 new airports, and \$57,000,000 worth of repairs and improvements to 140 existing airports in the state. San Francisco officials estimate their city needs 27 new fields, including five major air terminals, seven smaller transport fields and 15 airports for personal planes and flight instruction.

Plane Auction Prices Studied by Officials

Sales method at Patterson Field examined with new interest as result of fantastic figures paid for wrecked and non-flyable aircraft.

Surplus plane officials are pondering results of an auction held at Patterson Field in which virtually fantastic prices were paid for wrecked, engineless and non-flyable planes. As a result, the auction sales method is being studied with somewhat new interest because of the wide attention attracted by the sale.

The planes were offered at auction because they were considered suitable only for salvage or scrap. All 163 planes—and remains of planes—offered were sold, and experienced bidders quickly dropped out of the running when prices became prohibitive.

► **\$9,000 for Wrecked Lockheed**—One Lockheed AT-18 that had been crash-landed and had only one of its two engines brought \$9,000 and it was estimated that it could not be placed in flyable condition for less than \$40,000.

A Piper Cruiser with an engine that is unusable brought \$1,300.

All told, the average price paid was listed at \$313, the planes ranging from twin-engine Beechcrafts to Taylorcraft, Aeroncas and gliders, one of which, a Laisler-Kauffman trainer, sold for \$775.

It is understood that a similar pile of salvage planes has been assembled at Warner Robins Field near Macon, Ga., and possibly the sale will be repeated there to determine whether or not the Patterson Field results were freakish, or whether movement of equipment and prices obtained will give the auction method an advantage over the present system used for planes in good condition. These now are sold on a bid basis, with prices and interest reportedly dropping, particularly on heavier trainers.

► **Auction Method Favored**—The Harvard surplus aircraft report suggested that a simplified auction method might have advantages over the sealed bid basis, and it is not inconceivable that further experience with the auction system will dictate changes in present procedures.

Even though prices and interest are dropping in connection with trainers, no particular concern probably will be felt by the Surplus Property Board, since the



COAST DEFENSE ZONE:

Still closed to personal aircraft operations, with limited exceptions, and to civilian schools is the Western Defense Zone. Map shows boundaries of the restricted zone. Charter operators and personal plane owners should consult Army authorities or CAA before attempting flights into the region. Maj. Gen. Charles H. Bonesteel, commanding general, Western Defense Command, believes it will be possible soon either to modify civilian flight restrictions in the area or move the boundary line westward to the point where it will cover only a minimum number of areas vital to defense and war operations.

Pogue Surplus Advisory Subcommittee recommended that planes not readily sold be held in an adequate storage pool for transfer to schools and other institutions in a post-war pilot training program, which is almost sure to come as a part of the post-war federal works program. They would be held three years under the Pogue program. On the other side of the picture, however, there undoubtedly will be far more light planes than can be absorbed in such a program, and these probably will be disposed of in the private market to gener-

ate increasing interest in personal plane flying.

► **Planes Non-Flyable**—One very bad feature of the Patterson Field auction is that the planes offered were non-flyable in their condition when auctioned, and it is probable that many buyers will find the cost of reconditioning more than the cost of a new plane of the same type, or one bought under sealed bid. Aviation people feel that the sale of planes in a category such as this should be restricted to their use as salvage or scrapping.

Flying Leathernecks Brilliant War Book

Story of U. S. Marine Corps Aviation's role in Pacific War, as told by two combat correspondents.

The story of Marine Corps aviation is told in a new book, *Flying Leathernecks*, released by Doubleday, Doran and Co., Inc. The volume is outstanding in a war in which brilliant writing has been the rule rather than the exception, and its two combat correspondent authors—Captains Richard G. Hubler and John A. DeChant—have teamed to weave the dry string of history into a colorful story of human life and valor.

After Navy carrier pilots had cleared a path, and ground Marines had been put ashore to seize airfields, the Flying Leathernecks came in to hold the skies, to ward off counterattack and spearhead the other half of their team in securing other bases from which new strikes could be prepared.

► **Wake Island**—The book opens with the sacrifice of Wake Island, where the Marine garrison wrote the first new chapter of the Corps and where four Marine F4F *Wildcats* set the pattern for a war yet to be fought. There is the defense of Midway, where the Marine fighter squadron consisted of 21 Brewster F2A *Buffaloes* and seven *Wildcats*. The Brewsters were sitting ducks for the *Zeroes*, could barely keep up with sluggish *Aichi* dive bombers. After the first day only one *Buffalo* and one *Wildcat*, three SBD's and eight SB2U's of the other Marine squadron were flyable. But by that time the carriers were steaming into the battle.

Then came the attack on Guadalcanal when Marine air squadrons shifted to the offensive. When it was done, the Japs were definitely started on their long trail home.

The big battery of modern screw machines in this plant produces several different types of aluminum aircraft parts with the help of Gulf Cut-Aid. In the lower photo a Gulf Service Engineer (right) is shown consulting with the plant Superintendent on machining aluminum caps.



"With Gulf Cut-Aid

we increased aluminum cap production 25%

— tool life over 100% "

says this Superintendent

GULF CUT-AID does a better job on aluminum than any other cutting fluid we've ever used," says this Superintendent. "With this outstanding new cutting oil we stepped up production of aluminum caps 25%, increased tool life well over 100%, and are getting better threads."

Gulf Cut-Aid consistently shows better results in cutting aluminum and other nonferrous metals!

In addition to its superior performance on this class of work, Gulf Cut-Aid has another

important function—it's an effective energizer for other cutting oils, regardless of type or viscosity. When blended in the proper proportion with other cutting oils, depending upon job requirements, the use of Gulf Cut-Aid makes possible higher production speeds and results in improved finish, longer tool life, or both.

Call in a Gulf Service Engineer today and let him show you how Gulf Cut-Aid and other Gulf quality cutting oils can help you with your production problems. Write, wire, or phone your nearest Gulf office.



Gulf Oil Corporation • Gulf Refining Company • Gulf Building, Pittsburgh 30, Pa.

BACK THE INVASION . . . BUY MORE WAR BONDS!

COMMENTARY

Second Battle of Philippine Sea Climaxes Year of Carrier Triumphs

Next naval air blow likely to be large scale action on part of Fifth Fleet, striking from West-Central Pacific and much nearer to Japan than the Philippines.

Conversion of the vast Pacific into an Allied lake within the space of one year is the almost unbelievable achievement of U. S. naval flat-tops. The year, beginning with the Gilberts operation (Nov. 18-25, 1943), has witnessed not only a tremendous increase in the number of carriers, growth of carrier task groups, improved models of carrier-based aircraft and perfection of new techniques, but also the development of new tactics resulting in concentrating greater striking power against targets on land and sea. Air-sea rescue methods have been improved, and night fighter operations made more effective. Broader concepts of strategic missions, and new methods of cooperating in powerful teams with battleships, cruisers and destroyers, and in support of amphibious operations have emerged.

It is more than probable that as far as action against an enemy fleet is concerned the crushing victory of the Philippine Sea was the zenith. However, with the sea virtually swept clear of enemy naval power for at least months to come, the imagination is staggered at the possibilities which lie ahead for carrier-based aviation in the task of occupying Luzon, Formosa, the Ryukyus, Bonins, etc., ports on the China coast, and in action against Japan herself.

► **Gilberts**—In September, 1943, a small but powerful task force consisting of new and remodeled battleships, of cruisers and destroyers, of three new carriers, together with the necessary tankers and supply ships lashed out against Marcus island, only 1,000 miles from Japan. Aircraft from the two Essex-class carriers (CV's of 27,000 tons) and one of the cruiser-converted Independence light-carrier class (CVL, 10,000 tons) reduced the entire enemy base to a sham-

bles for the second time since Pearl Harbor. It was the first battle action of the notably successful Grumman Hellcat fighters (F6F). A couple of weeks later another task force with three new carriers struck Tarawa and Makin in the Gilberts. Early in October a larger force of six carriers (3 CV's and 3 CVL's) smashed up Wake Island.

► **Marshalls and Carolines** — The big Kwajalein operation in the Marshalls from Jan. 30 to Feb. 23 revealed several striking features. An important preliminary part was played by the advance units of the Seventh Air Force which jumped to Tarawa in the Gilberts as soon as bases were made suitable for long-range Liberators, hard-hitting Mitchells and Navy Venturas. For two solid weeks before the landings on Kwajalein and Roi these land-based bombers smashed the heavily defended enemy positions in the eastern Marshalls, including Mili, Jaluit, Wotje and Taroa. This neutralized the Japs' "unsinkable carriers" and enabled our fast carrier task force to move in and do an outstanding job, supported by a larger measure of highly effective surface gunfire than had hitherto been used in these triphibious operations. Another striking feature was the length of time over which the intensive carrier effort was maintained, a feather in the cap of the well organized supply train of the Carrier Task Force, and an indication of the prime importance of air superiority in this type of operation. Without it the entire force in the Kwajalein lagoon could have been dealt a crippling blow.

► **Truk and Saipan**—Another indication of the coming of age of carrier aviation was the heavy blow at Truk (more than 1,000 sorties, over 200 planes destroyed, widespread damage to enemy in-

stallations) with the left hand (nine carriers) while the main task force was still engaged in the Marshalls, the very time in fact when our amphibious forces were landing on Eniwetok, which was to become a key to our Central Pacific operations for months to come. Leaving "impregnable" Truk in a panic, two of the carrier task groups amazed the world by cockily proceeding 700 miles further into enemy waters, and attacking Saipan, central base of the all-important Marianas.

► **Western Carolines, New Guinea**—The next two months brought conclusive proof that virtual control of the Pacific had passed to the United States, based almost wholly on carrier air supremacy. Mar. 30 to Apr. 1 saw a highly concentrated series of attacks on Palau, Yap and Woleai in the western Carolines, over 2,000 sorties in three days.

During the last week of April a very large Carrier Task Force of CV's, CVL's and CVE's cooperated in the MacArthur-Kenney leapfrog operation which captured Hollandia, in Dutch New Guinea. This was the base from which stepping stones were seized during the summer, and from which the invasion of the Central Philippines was launched.

► **Marianas and Philippine Sea**—The next great powerhouse blow was the extended Marianas operation from June 11 to July 4, including the First Battle of the Philippine Sea. It was a complex action, involving all types of carrier-based aircraft missions totaling thousands of sorties per week, extending over an immense area.

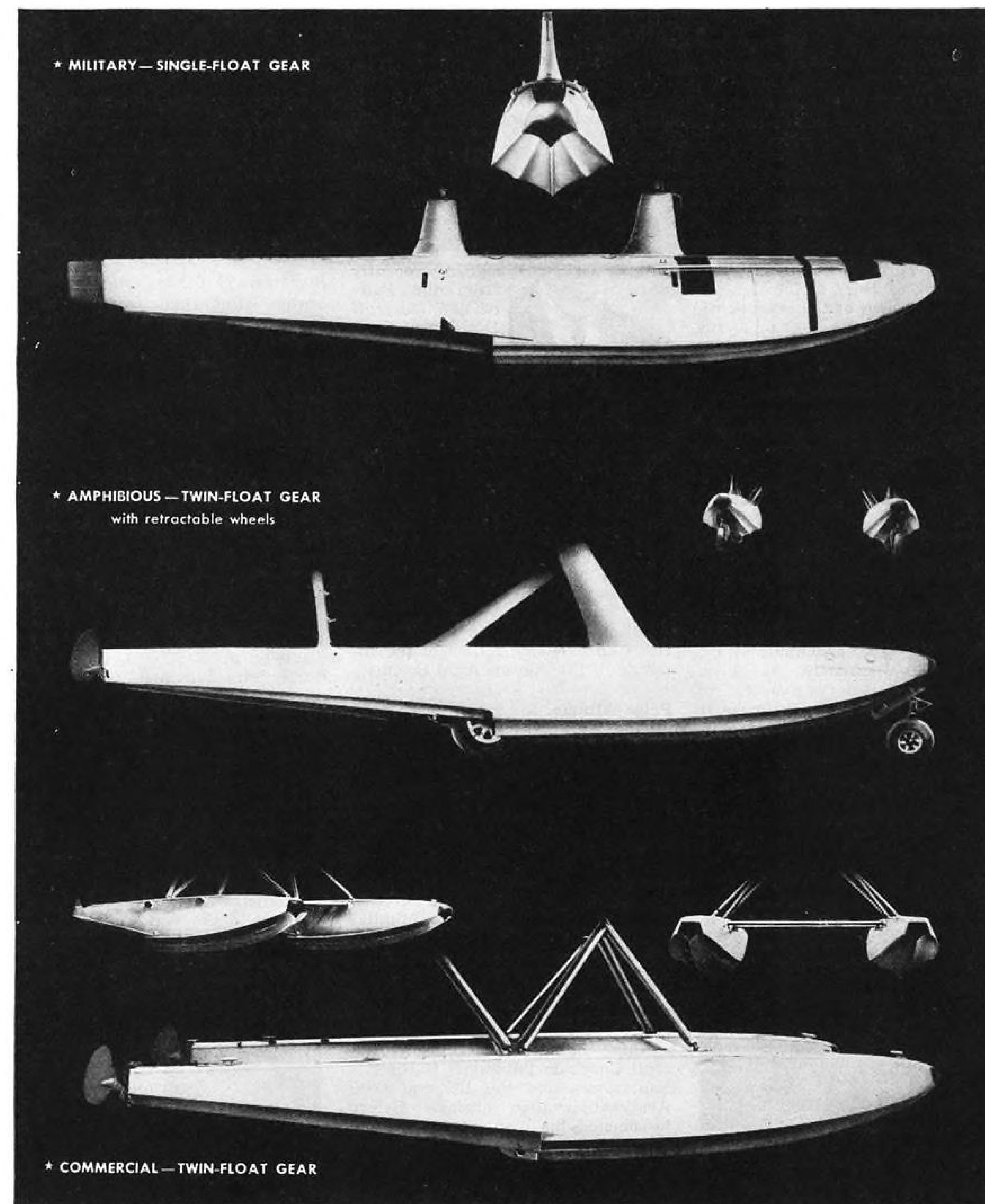
Possession of air and naval bases on Saipan, Tinian and Guam will undoubtedly be a key to the Pacific victory.

► **Disaster in Philippine Waters**—The Marianas was Admiral Spruance's show (5th Fleet), a powerful blow with the right. October brought Admiral Halsey his chance, a staggering sock with the left, the final results of which are even yet not in, as Admiral Mitscher's carrier planes, assisted by General Kenney's bombers from Morotai and General Chennault's from China, continue the chase and the search for crippled remnants of the enemy fleet. The next big naval air blow may be another swinging right from the Fifth Fleet, much nearer Japan than the relatively distant Philippines. Keep a weather-eye on the West-Central Pacific.

—NAVIGATOR

EDO FLOAT GEAR

All-metal seaplane floats for every type of aircraft



Edo Aircraft Corporation

Contractors to the U.S. Navy and U.S. Army Air Forces and Allied Governments

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PERSONNEL

William S. Moore (photo), whose return to the CAA as chief of General Inspection Division was announced in



AVIATION NEWS, Nov. 6, will have as his assistant **Paul E. Young**, who has been acting chief of the division. Moore has been on leave in the

Flight Control Command of the Army Air Forces for the past two years. He was chief of the General Inspection branch of the seventh region when he was called to active duty. He has been with General Inspection at CAA since 1929.

Emerson D. Lapsley (photo) has been named manufacturing manager of Bell Aircraft Corp.'s



Ordnance Division in Burlington, Vt. For the past two years he has been factory manager of the Niagara Frontier Division. **Jacob J. Joachimi**, who

was Lapsley's assistant, has been named acting factory manager of the Buffalo plant. Lapsley formerly was employed at Consolidated, Curtiss-Wright and Hall Aircraft.

Stanley Bell, former chief engineer of Hughes Aircraft Co., Culver City, Calif., has resigned after ten years' service. Bell holds one of the longest service records of any Hughes executive. He was with Vultee Aircraft in 1934 when he was granted a



WINGS CLUB GUESTS:

Brig. Gen. William E. Gillmore (ret'd.) and Gen. Henry H. Arnold were greeted by J. Carroll Cone at a recent luncheon in Washington sponsored by the Wings Club, Inc., of New York. Cone is president of the club and General Arnold was guest speaker.

leave of absence to work on the Hughes Racer and remained with Hughes' company. In 1939 he initiated design studies on a super-performance military airplane.

Frederick John Knack, well known aeronautical engineer and designer,



has been named vice-president in charge of engineering of Luscombe Airplane Corp., Trenton, N. J. Knack resigned recently from the Fairchild Aircraft Division of Fairchild Engine and

Airplane Corp., where he worked with production of the AT-21 and later was engineer in charge of that company's engineering office in New York. Following graduation from New York University's Daniel Guggenheim School of Aeronautics, he became an instructor in aeronautical engineering. Knack was chief engineer of the Mono Aircraft Corp., which produced the *Monocoupe*. In addition, his experience includes positions with General Aircraft Corp., later known as North American Aviation; and Douglas Aircraft Co. He is an associate fellow of the Institute of the Aeronautical Sciences.

Peter Altman, for many years head of the Aeronautics Department of the University of



Detroit, and at present an engineering consultant in Detroit, has been named a consulting engineer with Aeronca Aircraft Corp., Middletown, Ohio. Altman, active in

many engineering societies, has been vice-president in charge of aircraft engineering for the Society of Automotive Engineers. He was a consulting engineer for Stinson Aircraft Corp., on the Model R, the Reliant series and the 105 and O-49 Army observation airplane. Before he opened his own offices, Altman was director of the manufacturing research department for Vultee Aircraft, Inc.

Aero Insurance Underwriters announce the following promotions and staff additions: **Harold Montee**, coordinator in the home offices, has been appointed to succeed **Jules B. Guinotte** as manager of the Kansas City office. Guinotte becomes re-



MARINE CORRESPONDENT:

Basil (Bud) Littin, who was honorably discharged from the Marine Corps, is back in uniform as a Marine combat correspondent. Littin was formerly in the publications section of the Publications and Statistics Division of the Civil Aeronautics Administration. He is a member of the Aviation Writer's Association.

gional manager for that territory. Montee was with CAA in the Middle West area before he joined Aero. **Cecil Brandon**, formerly assistant manager of the Kansas City office, replaces Montee in New York. **Jack H. Quick** becomes assistant manager at Kansas City. **Eugene Beese**, with the insurance purchasing department of Studebaker Aviation, has been named field underwriter in the Atlanta office.

Scott Russell, general manager of Aeronautical Chamber of Commerce, was married to **Miss Christie Bell Kennedy**, who has been secretary to Senator Walter F. George of Georgia for the past eight years. The marriage took place in the Mount Vernon Methodist Church and the couple will live at the Wardman Park Hotel in Washington.

Commander W. E. Larned, USNR, veteran United Air Lines pilot on



military leave, has received a letter of commendation for meritorious service from Navy Secretary Forrestal. He is now chief staff officer of the Naval Air Transport Service, Atlantic

and received the letter for planning flight operation details adopted throughout the service. Before joining the Navy he was superintendent of eastern flight operations for United at Chicago.

EASIER, FASTER, LOWER-COST TOOLING WITH FIBERGLAS*-REINFORCED PLASTICS

The combination of Fiberglas and specially developed, low-pressure resins has resulted in a material with many unique and mechanically important characteristics. Lightness, rigidity, dimensional stability, high impact strength and ease of fabrication are among the advantages particularly significant in the production of Fiberglas-reinforced plastic dies, jigs and fixtures.

The high cost of manufacturing metal dies is eliminated. Costly, time-consuming machining is avoided.

FABRICATING FIBERGLAS-REINFORCED PLASTICS

One of the techniques developed, by Douglas Aircraft engineers, for the fabrication of Fiberglas-reinforced plastic jigs is illustrated at the right:

No. 1. The male mold (or, if available, the actual part), backed with plaster of Paris, is placed on a corrugated metal table equipped with air valve for producing vacuum.

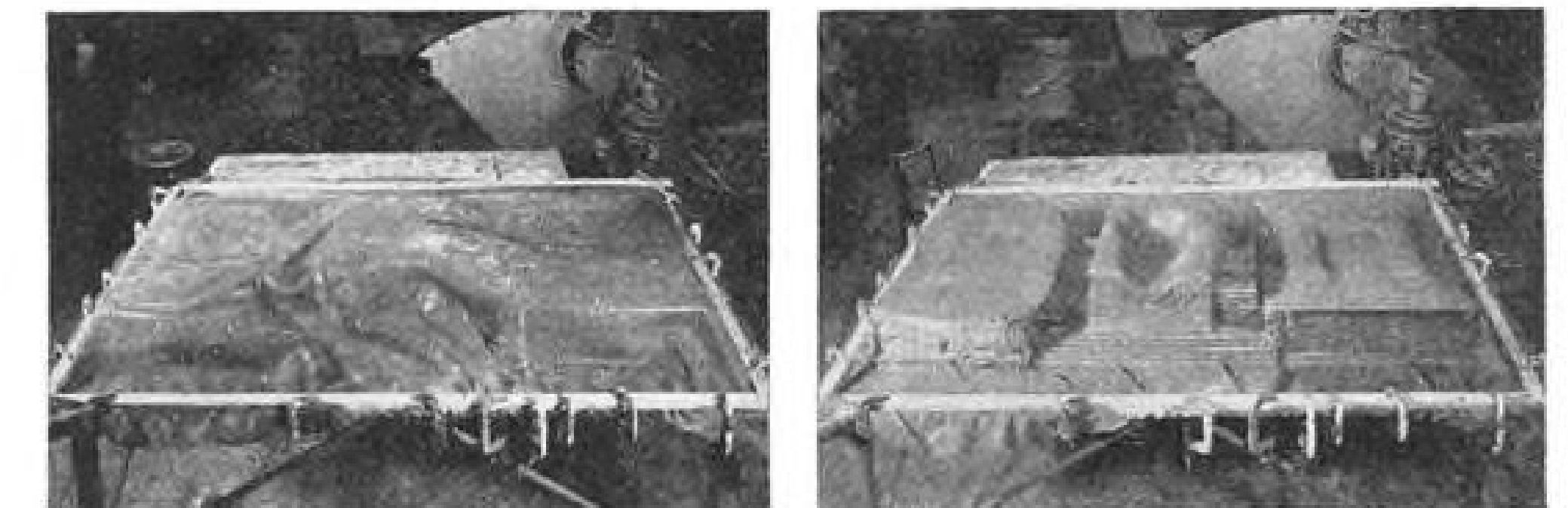
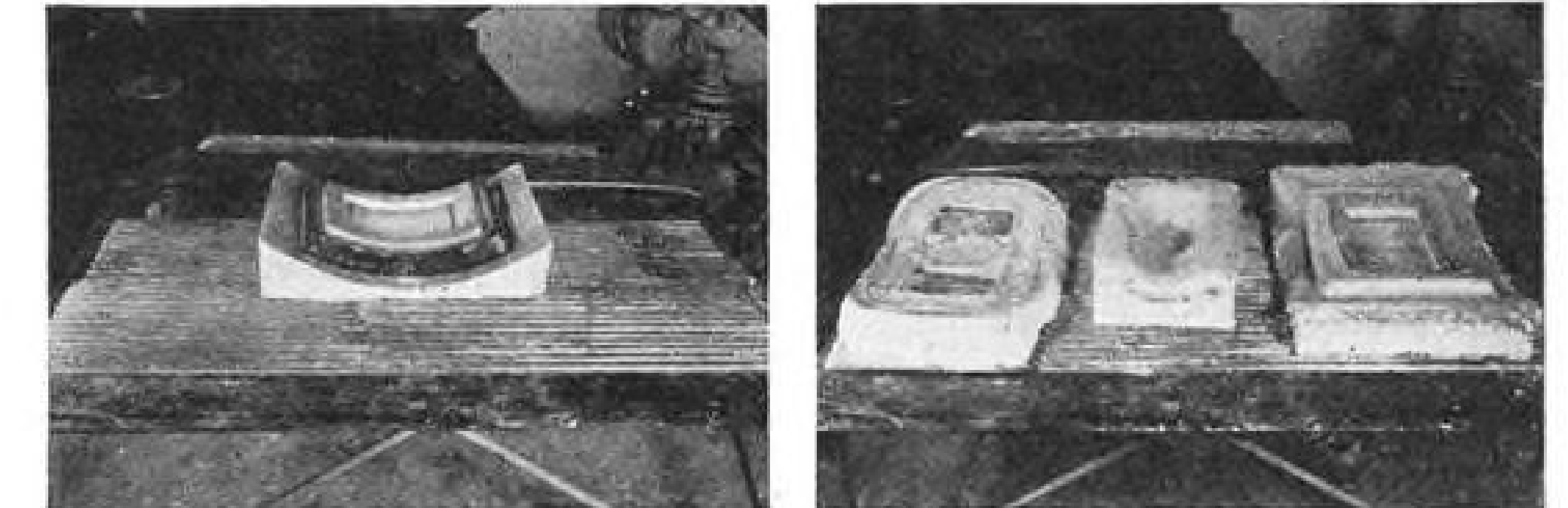
No. 2. The form block is covered with cellophane to prevent resin from sticking to the mold. Then the Fiberglas cloth laminations are trimmed to fit the form block... the low-pressure resin is rubbed into the cloth and the desired number of layers are built upon the form block.

No. 3. A rubber blanket is stretched over the mold.

No. 4. Air is evacuated. As the pressure is increased excess resin and air pockets are squeezed out of the laminates. The table is then rolled into the oven to complete polymerization of the resin at about 180° F.

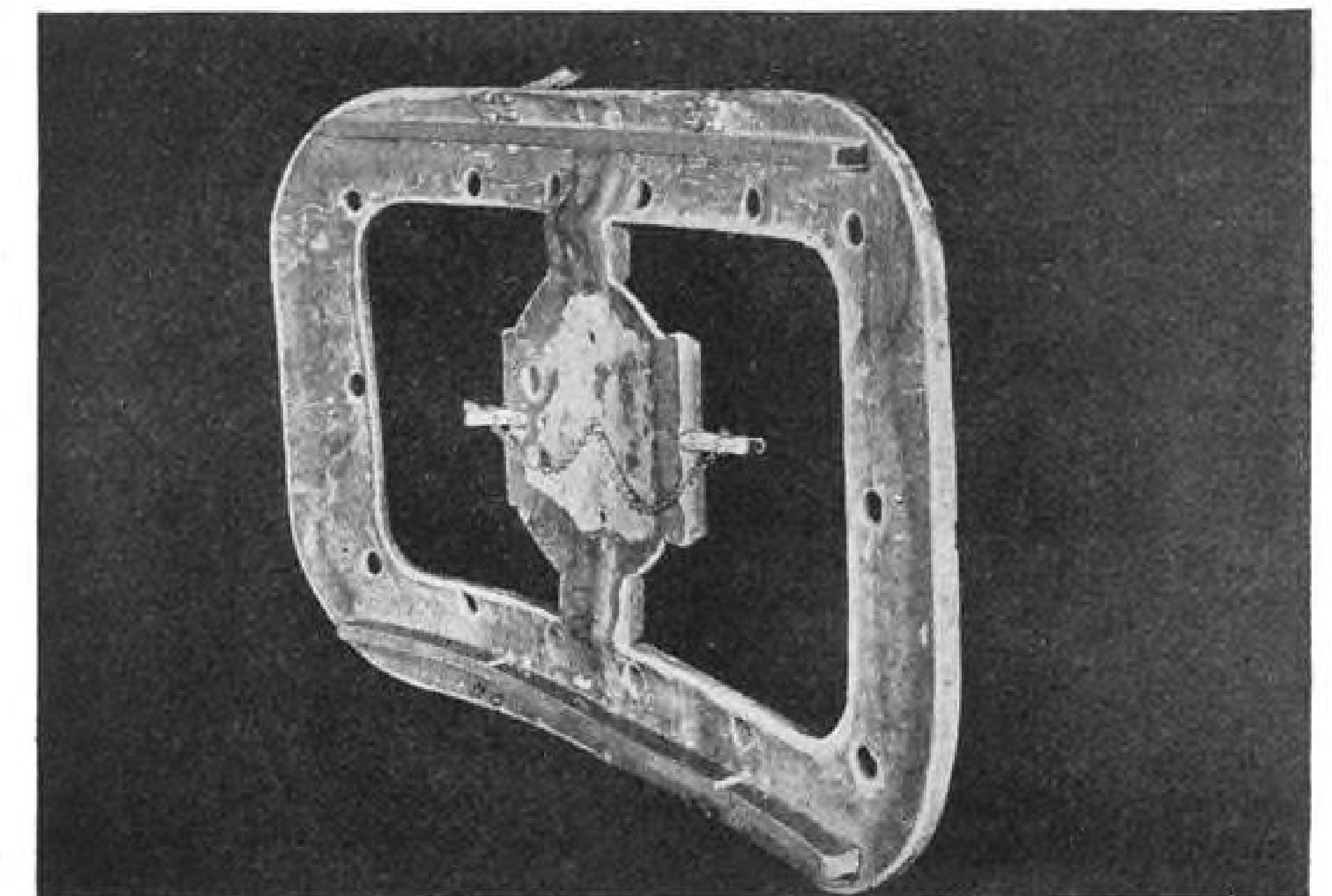
No. 5. After curing and cooling, the form block is removed, flanges are trimmed, holes drilled, clamps installed to complete the tool.

All available fabricating data and additional information about Fiberglas products and Fiberglas-reinforced plastics will be furnished on request. Write: *Owens-Corning Fiberglas Corporation, 1892 Nicholas Building, Toledo 1, Ohio. In Canada, Fiberglas Canada Ltd., Oshawa, Ontario.*



Steps in the production of a jig for spot-welding airplane doors. Fiberglas-reinforced plastics are dimensionally stable, have extremely high impact strength and are nonconductive of electricity.

Photos courtesy: Douglas Aircraft Co., Inc.



FIBERGLAS...A BASIC MATERIAL

*T.M. Reg. U.S. Pat. Off.

Dr. A. E. Lombard, Jr., special assistant to the director of the Aircraft Resources Control Office, and chief of the manpower division, has resigned. Dr. Lombard was with the Aircraft Production Division of War Production Board before the formation of ARCO. He has made numerous trips throughout the industry assisting in manpower problems. Before joining the government Dr. Lombard was assistant professor of aeronautics and mechanical engineering at the California Institute of Technology. He has made no announcement about his future plans.



Ahlborn Dropp has joined Aircraft Parts Development Corp., Summit, N. J., as industrial design engineer and stylist. He will work in conjunction with the corporation's activity in product engineering, research, and development.

Walter A. Bowe has joined the staff of Walter Dorwin Teague, New York City, industrial designer, as an associate in industrial planning and consultant on sales problems of clients. Bowe has been advertising and sales promotion manager of Carrier Corp., Syracuse, N. Y.

Carl B. Squier, vice-president in charge of sales and service of the Lockheed Aircraft Corp., is confined to the Good Samaritan Hospital in Los Angeles, suffering from a compound fracture of the right leg. He was injured on a ranch near Williams, Ariz., while vacationing.

Paul Azinger (left), general superintendent of Hamilton Standard Propellers, division of United Aircraft Corp., East Hartford, and **Albert F. Mannella** (right), assistant superintendent, received 20 year service pins from **Sidney A. Stewart** (center), general manager. Stewart recently received a 15 years' service pin. All three men worked at the Standard Steel Propeller Co., in Pittsburgh, before it became a part of United.



TWO 20-YEAR PINS:

Two appointments to editorial positions on the McGraw-Hill Publishing Co. aviation magazines have been announced by **George W. Pfeil**, publisher. **Eugene Miller** returns as associate editor of *Air Transport* and to the technical staff of *AVIATION NEWS* following a leave of absence from *Aviation*, where he was managing editor, to serve as research supervisor of the War Metallurgy Committee of the National Defense Research Committee. **Oscar Leiding**,



30 YEARS' SERVICE:

Preston R. Bassett, vice-president and general manager of Sperry Gyroscope Co., was given a diamond and ruby pin marking completion of 30 years with Sperry. **Reginald E. Gillmor**, president, made the presentation. Bassett holds 21 patents outright and nine jointly. He directed development of airplane beacons, the Sperry gyro-horizon and directional gyro, the Sperry Gyropilot for automatic flying and the technique of sound-proofing planes.

G. Geoffrey Smith, editorial director of *Flight* and *Aircraft Production*, both British journals, who has been on loan to the British Ministry of Production in this country, will return to England late this month. He has been in this country directing an interchange of technical press information. Smith is overstaying his six months by several weeks to complete an extensive speaking tour. While here he has arranged for return visits by several American technical journalists. An American edition of his book "Gas Turbines and Jet Propulsion for Aircraft," will be released shortly with a foreword by T. P. Wright, Civil Aeronautics Administrator.

Edward E. Slattery, Jr., press chief of the Civil Aeronautics Board, is recovering from an operation at Emergency Hospital in Washington. He is expected to be hospitalized for several more weeks.

Victor G. Mellquist has been appointed to the technical staff of the Aeronautical Chamber of Commerce of America. Before accepting his new post, Mellquist was with the Army Air Transport Command as a civilian engineer, coordinating engineering activities among ATC carriers, Wright Field and the aircraft manufacturers. Prior to that he was aerodynamics engineer in the intercontinental division of Transcontinental and Western Air, Inc., and also was with Beech Aircraft Corp.

formerly associate of *Air Transport*, has been named managing editor.

Jack Black has been appointed chief operations agent for Continental Air Lines in Kansas City, replacing **Kenneth Borgmier**, who has been transferred to San Antonio. **Jerry Kitchen** has been named supervisor of passenger service for Denver in place of **Dave Gatch** who has been appointed to a new position in the operations of Continental.

Fleetwings, division of Kaiser Cargo, Inc., announces **W. L. Berlinghof** as production manager replacing **Walt Hassler**, resigned. **Tom Curran** becomes shop production manager and **Jack Keenan**, experimental production manager.

Robert M. Stanley has been named chief engineer of the Niagara Frontier Division of Bell Aircraft Corp., Buffalo. He was the first man to fly the *Airacomet*, first jet propelled airplane. Before joining Bell in



Woolams Strickler Stanley

1940, Stanley was employed by Douglas and Vought Sikorsky. He has been chief test pilot and manager of Bell's flight research department. **John F. Strickler**, former Army pilot, has been named assistant chief engineer of the division. He has been with Consolidated and Curtiss-Wright. **Jack Woolams** has been named chief test pilot. Woolams was senior experimental pilot and assistant chief test pilot for Bell.

Victor G. Mellquist has been appointed to the technical staff of the Aeronautical Chamber of Commerce of America. Before accepting his new post, Mellquist was with the Army Air Transport Command as a civilian engineer, coordinating engineering activities among ATC carriers, Wright Field and the aircraft manufacturers. Prior to that he was aerodynamics engineer in the intercontinental division of Transcontinental and Western Air, Inc., and also was with Beech Aircraft Corp.

O. T. Ridley, 50, superintendent of southern flight operations for American Airlines, died at Murfreesboro, Tenn. Ridley started in air transportation in 1929 as assistant general manager for Interstate Airlines at Murfreesboro. He was active in the planning and development of the Navy Training program at Ft. Worth.

AEROLS*
*PNEUMATIC-HYDRAULIC (AIR-OIL) SHOCK ABSORBING LANDING GEAR

Light Landings for TREMENDOUS TONNAGE

Hurling 11,500 miles in 84 hours, Pan American World Airways' "Cannonball" express rushes "hot" priority cargo to the orient. The thundering planes swoop down by the Amazon, span the Atlantic to the Gold Coast, land again by the Nile, dip onto Arabian sands, and complete their flight in India.

At each hurried stop, Aerols* soak up landing shock, help the plane come in safely, and protect vital cargo. Thus, Aerols contribute substantially to the success of the fastest express service in history.

THE CLEVELAND PNEUMATIC TOOL CO.
"PIONEERS FOR 50 YEARS"
AIRCRAFT DIVISION • CLEVELAND 5, OHIO
Also manufacturers of Cleco pneumatic tools, Cle-Air shock absorbers for vehicles, and Cleveland rock drills for mining and construction.

Speed Victory! Buy MORE War Bonds and Stamps

**Aviation Officials' Transactions
 In Own Securities Reported**

Dealings in September reveal general trend toward reduction of holdings, according to data submitted to SEC.

September security transactions by aviation officials reporting to the Securities and Exchange Commission were relatively few, with the most important changes taking place in the manufacturers' section.

Lawrence D. Bell, president of Bell Aircraft Corp., sold 2,500 shares of the company's common leaving him a balance of 12,000 shares at the close of September.

▶ **Grumman**—B. Allison Gillies, vice-president of Grumman Aircraft Engineering Corp., liquidated his entire holdings of the company's common, consisting of 1,800 shares. Leon A. Swirbul, executive vice-president, sold 3,000 shares and gave away 900 shares, leaving his ownership at 26,100 shares. Leroy R. Grumman, president and principal stockholder of the company, gave away 1,400 shares. His holdings at the end of the month aggregated 70,760 shares.

▶ **Republic**—John J. Daly, director of Republic Aviation Corp., bought 1,900 common, increasing his holdings to 55,814 shares. In August, Frederic G. Coburn, a director, sold 200 common, representing his entire holdings of the company's common stock.

▶ **Consolidated**—David G. Fleet, director of Consolidated Vultee Aircraft Corp., sold 200 common during September, giving him an ownership of 3,164 shares at the end of the month. He also owned 300 of the \$1.25 cumulative preferred. Isaac M. Laddon, executive vice-president, reported the purchase of 4,500 common by his wife, which increased her holdings to 4,550 shares. Mr. Laddon holds 6,120 common, while a trust holds 1,000 shares. Charles T. Leigh, vice-president, sold 4,696 shares common in August, reducing his holdings to 1,000 shares.

▶ **Pan American**—H. Preston Morris, secretary and general attorney of Pan American World Airways System, sold 100 shares of the company's capital stock in Sep-

tember, leaving him a balance of 600 shares.

▶ **American Export**—J. M. Hancock, director of American Export Airlines, Inc., and a direct owner of 1,720 shares of the company's capital stock, reported Lehman Brothers made a distribution of 342 capital shares during September. The firm's balance at the close of the month was 31,975 shares. John E. Slater, executive vice-president, reported sale of 50 shares of American Export's capital stock in August, making his balance 2,000 shares.

▶ **PCA** — Raymond G. Lochiel, treasurer of Pennsylvania-Central Airlines Corp., reported purchase last July of 10 shares of common, increasing his ownership to 310 shares. George R. Hann, director, reported receipt of 2,183 shares in July as a liquidating dividend from Pittsburgh Aviation Industries, Inc. At the close of that month he had 11,328 shares. John W. Donaldson, also a director, increased his holdings to 1,500 shares through purchase of 500 shares in August.

Among other transactions in August were: sale of 1,300 shares of Northeast Airlines' common by Samuel J. Solomon, director, leaving him a balance of 15,000 shares; purchase of 1,300 shares of Colonial Airlines' common by Francis Hartley, Jr., director, giving him 7,800 shares; sale of 300 shares of United Air Lines' common by Sumner Sewall, director, leaving him an ownership of 7,000 shares.

Financial Reports

▶ **Northrop Aircraft** reports net profit of \$603,516 for its fiscal year ended July 31 after taxes and charges, equal to \$1.50 a share in the Class A and Class B stock outstanding, compared with net income equal to \$3 a share in the preceding fiscal year. Net profits on sales were lowest since 1941. Sales totaled \$88,045,090 against

\$69,791,945 in the previous year. Estimated post-war refund of excess profits taxes for the 1944 year was \$582,445, equal to about \$1.45 a share.

**Aviation Corp. Nets
 \$3,199,871 in 9 Mos.**

Equals 55 cents a share against 49 cents a share for like 1943 period; earnings and dividend actions of other companies reported.

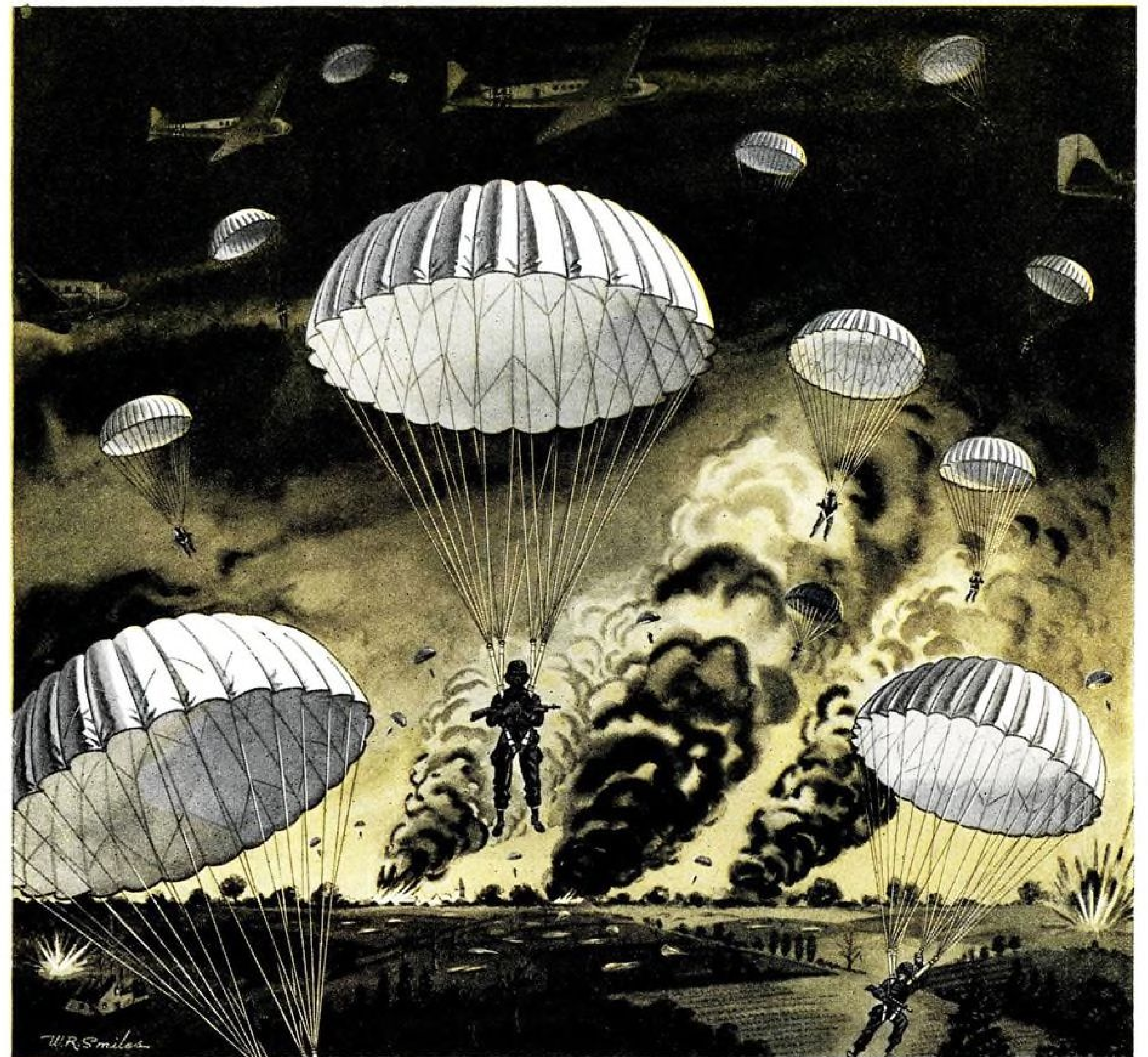
Aviation Corp. reports net income of \$3,199,871 for the nine months ended with August after all charges including federal taxes, equal to 55 cents each on 5,793,513 shares, and compared with \$2,810,486 or 49 cents a share for the same period a year ago.

Net sales for the nine months are listed at \$49,303,547 compared with \$57,234,555 a year ago, the decline of \$7,931,008 reflecting price reductions as well as lower demand for some war material.

▶ **Other Income Not Included**—The consolidated earnings do not include the corporation's equity in undistributed earnings of associated companies that are not consolidated. These include Consolidated Vultee Aircraft, New York Shipbuilding Corp. and American Central Manufacturing Corp. The corporation also has investments in American Airlines, Pan-American Airways and Roosevelt Field.

Other financial reports include: ▶ **Ryan Aeronautical Co.** and wholly owned subsidiaries for six months ended Apr. 30, last, reports earnings of \$348,151 compared with \$597,313 in the full fiscal year ended Oct. 31, 1943. Revenue from manufacturing operations for the first half of the 1944 fiscal year was \$16,270,427, closely approaching the \$19,705,524 gross for the prior 12 months. School operations for the six months ended Apr. 30 were \$2,766,552 as compared with \$5,622,923 for the year ended Oct. 31, 1943.

T. Claude Ryan, president, reports agreements reached with the Price Adjustment Boards covering renegotiation of profits of the company and subsidiaries for the fiscal year ended Oct. 31, 1943. Amounts to be refunded total approximately \$369,000 which, after credit for applicable federal taxes, results in net refund of approximately \$73,000 which will be charged to the reserve for contingencies provided for this and other purposes in the 1943 fiscal year.



Keep Buying Bonds—
 The More You Buy,
 The More They Fly!

'Chutes Revolutionize Warfare!

On every battlefield of the world, a new page in the history of warfare has been written by America's paratroopers. We pay tribute to these gallant men! They have profoundly changed military strategy.

Perfect *Eagle Parachutes*, fabricated by our expert craftsmen, have contributed importantly to the brilliant successes achieved by our Army and Navy. This same perfection and skill necessary for military parachute production today will be utilized in the fabrication of advanced parachute equipment and aviation textile products tomorrow. Eagle's executive and technical staffs . . . and precision sewing facilities . . . are now available for cooperative development of peacetime products. Your inquiries are invited for immediate attention.

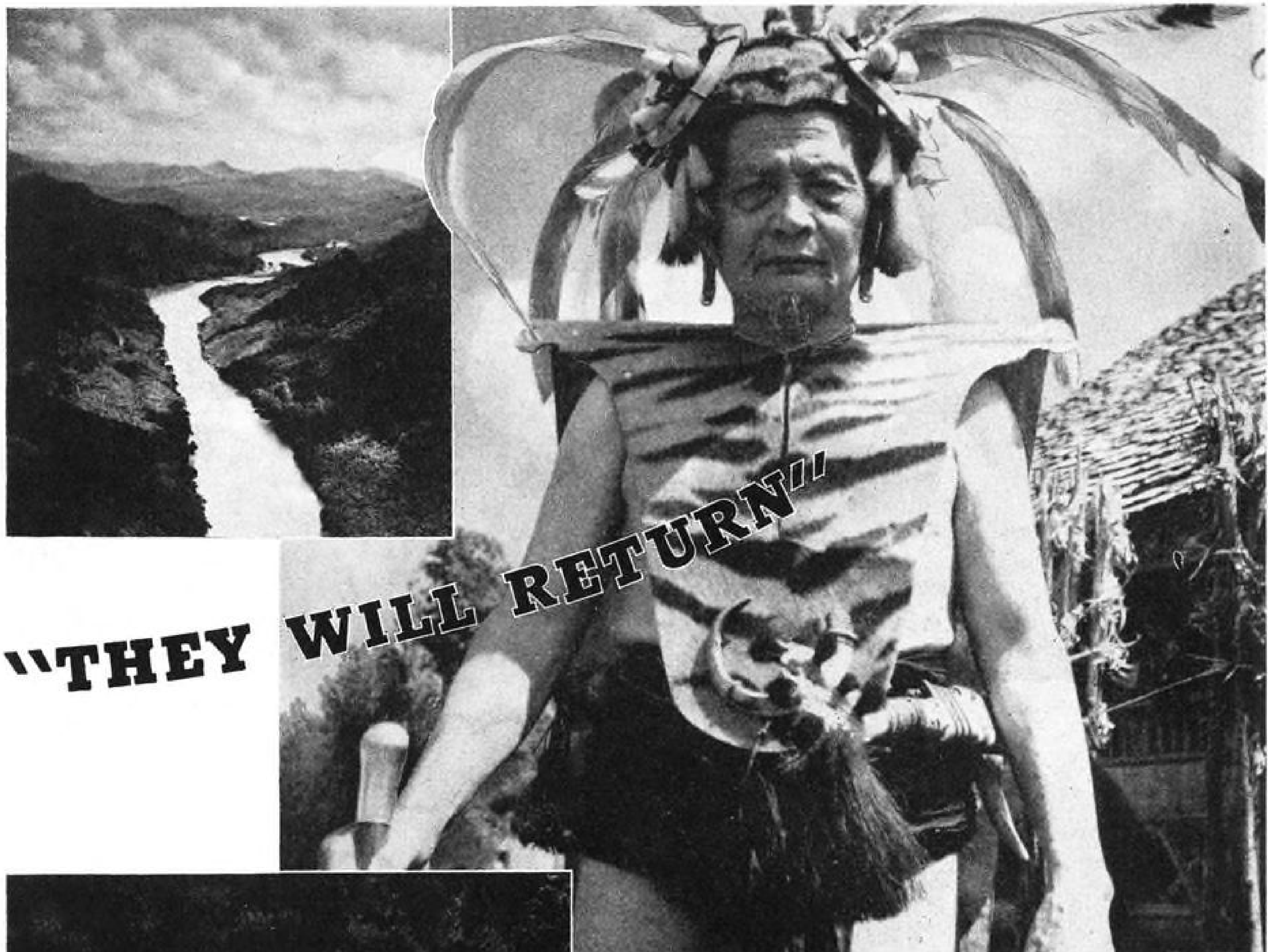
C. G. Follmer
 President

Eagle Parachute
 CORPORATION
 LANCASTER, PENNA.

EAGLE WINGS CLUB

Anyone who has made an emergency escape with an Eagle Parachute is eligible for life-time membership in the Eagle Wings Club and will be given the gold Eagle Wings Insignia of this organization. Write us if you are qualified.





(Upper photo) Rivers are Borneo's only highways to the interior. An arduous six-weeks river journey required only 90 minutes in a Beechcraft.
 (Lower photo) Beechcraft float-equipped biplane flown by missionaries after landing on a mountain stream in the Borneo interior.
 Photographs courtesy Rev. George E. Fisk (pilot), Nyack, N. Y., and Christian Missionary Alliance, New York City.

King of the Apo Kajan tribe of Borneo is Oejong Injau. The Japanese have invaded his land. But he and his people have not forgotten the white men who came to help them, before the war. They remember well the missionaries who regularly flew in a Beechcraft over their mountainous jungles and landed on their narrow, swift-flowing rivers, to heal their sick and enlighten their kinsmen. They know that the liberating wings of the white men's aircraft have purged other lands of the Pacific from the treacherous invaders. They know that their land, too, will again be free. King Injau and his people look to the skies and say with sure knowledge: "They will return."

Beech Aircraft



C O R P O R A T I O N
 W I C H I T A , K A N S A S , U . S . A .

BEECHCRAFTS ARE DOING THEIR PART

PRODUCTION

Navy Expected to Extend Use Of Incentive Contracts on Planes

Only four for aircraft, totaling \$1,308,000,000, have been completed but saving of \$208,000,000 and receipt of \$37,000,000 extra profits by companies make wider employment of system likely.

Increased interest is being shown by the Navy Department in so-called incentive contracts and it is considered likely the department will extend the use of such contracts in future dealing with aircraft manufacturers and others producing for the Navy.

To date, only four aircraft contracts utilizing the incentive system have been let and completed. These contracts totaled \$1,308,000,000. On these contracts the government saved \$208,000,000 and the aircraft companies involved, which the Navy declined to name, received \$37,000,000 in additional profits.

these contracts has resulted in a generally favorable impression and an expression from some executives that the incentive-type contract is better than cost-plus-fixed-fee and also better than fixed price contract under wartime conditions in that financial risks present in other types are more nearly eliminated.

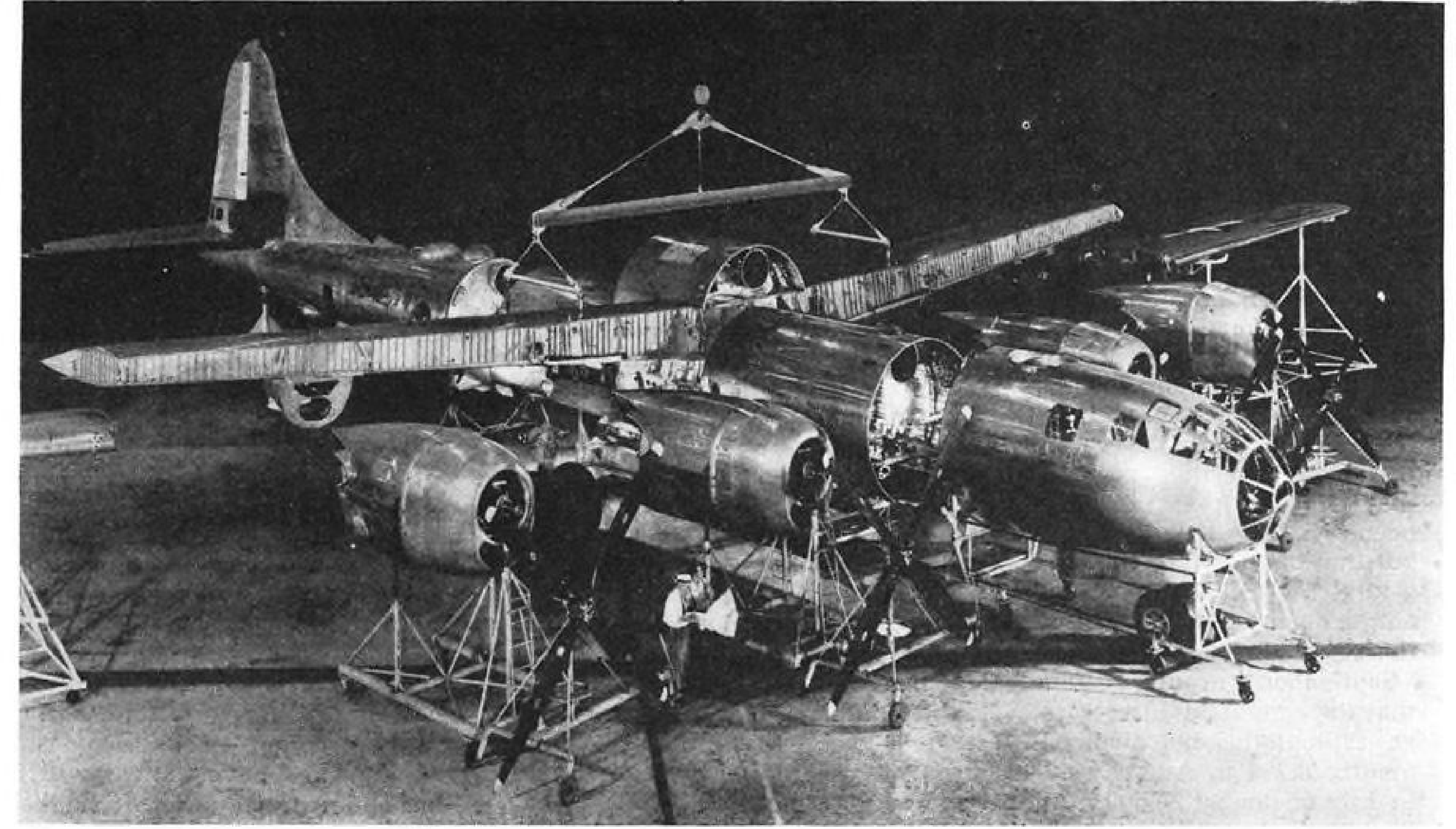
The contracts do not open wide the field which exists in the cost-plus contracts and under them the contractor not only has an obligation to keep costs within a certain specified range, but has an incentive for additional profits by so doing.

► **Comparison** — An appraisal of ► **Extra Charges** — Under the in-

centive contract plan the Navy and contractor agree on the basic cost of an item plus 10 percent profit. For example, with the basic cost at \$100, the cost plus ordinary profit would be \$110. The contractor is then given additional latitude for unforeseen expenses which might raise the total, for example to \$130. With completion of the contract, the contractor would have to support any costs between \$110 and \$130, the top price he would receive for the item. He could receive \$130, but no more and if the cost was \$129 his profit would be only one dollar.

On the other hand, if production costs were reduced to say \$98, the contractor would receive not only the original profit agreed upon, but in addition a percentage of the difference between \$110 and \$98, with consequent saving to the government.

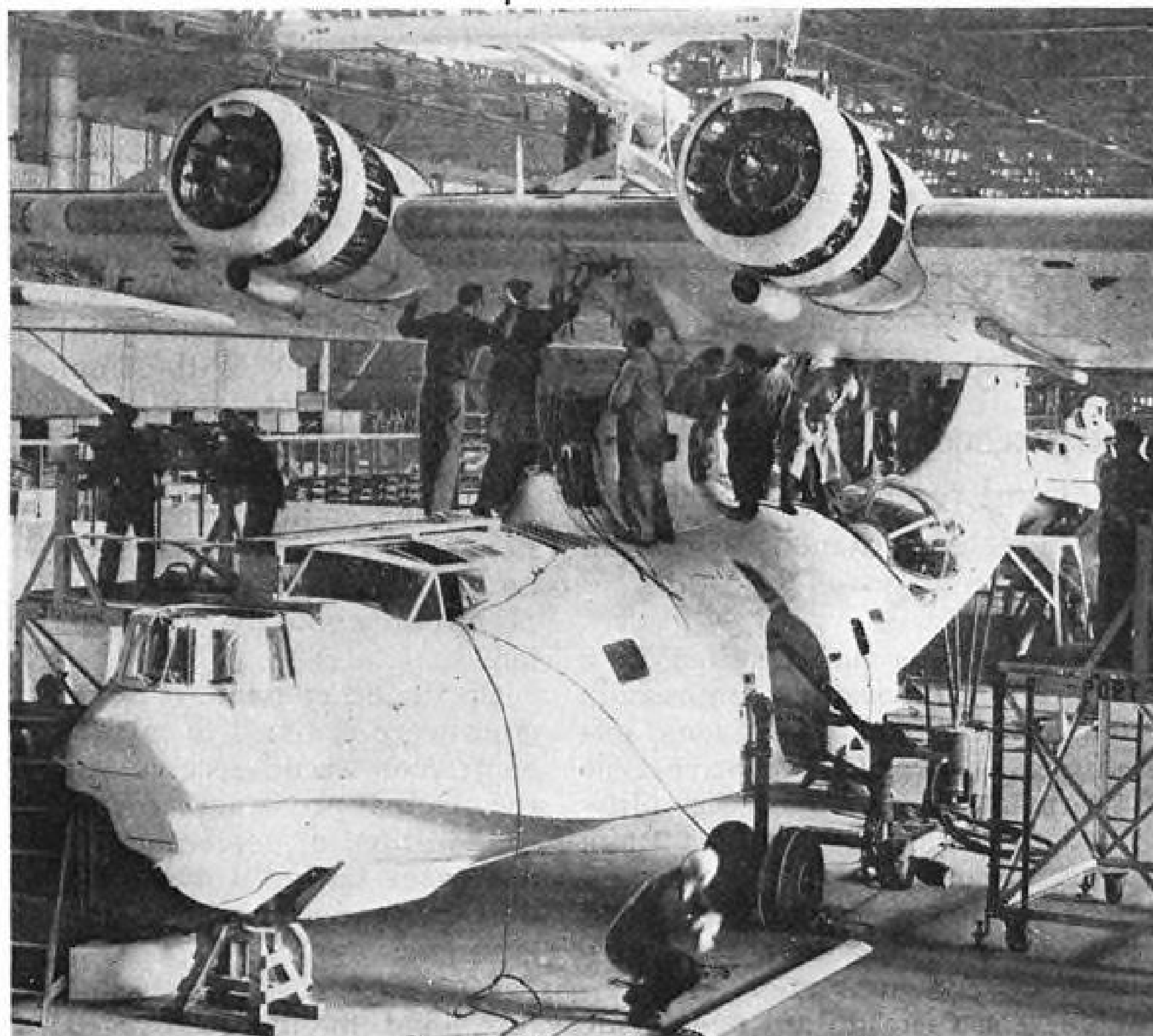
With basic costs agreed upon before hand, many controversial details which require extended negotiation and delay settlement under other types of contracts are eliminated, according to Navy officials, who would like to extend the use of such contracts to virtually all manufacturers dealing with them wherever feasible.



ASSEMBLY OF BOEING'S B-29 SUPERFORTRESS:

This exploded view of a B-29 taken at Boeing's Wichita Division illustrates the company's multi-line system of production in which major units of the bomber are brought together in the final assembly

stages, each pre-completed, including installation of electrical apparatus, wiring, tubing, instruments, upholstery, etc. This makes final assembly a matter of joining and connecting.



CANADIAN-BUILT CATALINA IN PRODUCTION:

Photo taken in plant of Canadian Vickers, Ltd., Montreal, shows a PBY Catalina hull receiving its wings and power plant. Production contract of Catalina flying boats is now nearing completion at both Canadian Vickers and Boeing Aircraft of Canada, Vancouver.

Cost of Air Power Minimized by Result

Arnold's report of 42,000 planes lost in attaining aerial domination declared not high in view of damage inflicted on enemy.

Report of Gen. H. H. Arnold that 42,000 airplanes have been lost in gaining and maintaining our aerial supremacy made many laymen shudder but it was only because they had not examined the aircraft production figures since Pearl Harbor.

General Arnold's report noted that 17,500 of these airplanes had been lost in the United States but that our air force had dropped a total of 1,000,000 tons of bombs on the enemy to balance off against the cost.

▶ **September Output**—It is notable that the aircraft industry produced an estimated 7,598 airplanes last month; 8,274 in August and 8,000 in July or almost 24,000 in the last three months. The total airplane production of the industry up to the end of September of this year amounts to 65,832 airplanes. This means the industry has produced more airplanes in the first nine

months of this year than have been lost by the Army Air Forces since Pearl Harbor.

To point up this, here is a review of aircraft unit production as carried previously by AVIATION NEWS: January, 8,789; February, 8,760; March, 9,117; April, 8,343; May, 8,902; June, 8,049; July, 8,000; August, 8,274 and September, 7,598.

▶ **Leveling Off**—Production in units now will level off at approximately 7,500 with increased weight of aircraft produced, the only true yard-stick, due to the emphasis on heavy bombers and new and still secret craft in the offing.

Another criterion shows General Arnold's figures are not out of line. For example, the 1944 monthly production rate, despite the fact that output is not up to schedules of several months ago, will give a 1944 total approaching 100,000. Production for 1940 was about 9,600; for 1941 about 30,000; for 1942 about 50,000 and for 1943 around 100,000.

▶ **958,000 Sorties in 9 Months**—These figures, however, are more impressive when compared with General Arnold's statement that, since December, 1941, AAF airplanes have engaged in 1,350,000

sorties against the enemy. The way the striking power of the AAF has built up is brought out by the fact that 71 percent or 958,000 of these sorties took place in the first nine months of 1944, compared with 365,000 in 1943 and 27,000 in 1942, plus Dec. 1941.

General Arnold compared the handful of AAF aircraft available at Pearl Harbor with the 10,500 sorties flown by combat airplanes on June 6 of this year or the 1,271 heavy bombers, supported by 803 fighters, which in one attack poured 2,700 tons of bombs on Munich.

Fairchild Forwarder Production Halted

Production has ended on the Fairchild UC-61K Forwarder, a four-place utility-cargo plane which has performed yeoman service in Australia, Africa, India, Britain and Brazil in transporting ammunition, medical supplies and personnel.

The last Forwarder was rolled out of the Hagerstown plant, test flown and turned over to AAF Resident Representative Maj. J. T. Aeamans by Dick Henson, chief test pilot. The first Forwarder was produced in September, 1941, as a modification of the widely used Fairchild F-24, private plane, originally designed in 1933.

▶ **Modified**—The Forwarder was modified several times during manufacture. It was first powered by a 145 hp. radial engine, followed by the installation of a 165 hp. radial. Since April of this year, the production Forwarder has been powered by the 200 hp. in-line Ranger engine, giving it a top speed of about 125 mph. Its non-stop cruising range is 500 miles.

Sutton Quits Convair

Resignation of Harry S. Sutton, director of engineering for Consolidated Vultee was announced following a reorganization of engineering activities of the corporation.

Activities formerly under Sutton's direction, including design research and development will be consolidated under I. M. Laddon, executive vice-president, with administrative activities of the engineering and flight research departments coming under the direction of B. W. Sheaman, engineering manager.

Output of Urgently Needed Planes Lags

October total of aircraft in general is on schedule but production of certain types is reported off sharply.

While unit production of aircraft in October—7,429 aircraft (AVIATION NEWS, Nov. 6) represented on schedule performance from the standpoint of over-all numbers, production of certain urgently needed types was sharply below schedule.

The situation was such that WPB Chairman J. A. Krug made the comment that some manufacturers exceeded their schedule by such a margin as to make up the deficit caused by other plants, not named, which "fell down badly."

▶ **Most Needed Types**—Unfortunately, he pointed out, the models

on which production was below schedule were of the most needed types, while the majority of the over schedule performance group involved less-needed aircraft. Production was not up to schedule in the big bomber class and heavy transports, as was the case in certain new improved models in other classes which are being brought into production. In terms of airframe weight accepted, production for the month stood at 75,400,000 pounds, exclusive of spares, somewhat under the average of recent months.

October plane output compares with a September total of 7,598 with an airframe weight of 90,000,000 pounds, including spare parts.

▶ **Output Generally Satisfactory**—Production was reported generally satisfactory in Army standard heavy bombers, carrier-based fighters, most transports and the trainer and miscellaneous models.

The showing for the month was tempered by the fact that current aircraft schedules already have been cut, as recently announced, to represent either minimum military requirements or, in cases where this is obviously unattainable, the manufacturers' maximum estimated production. Hence, any below-schedule output on a particular model is bound to hamper planned military operations.

GE Device Controls Engine Temperature

A temperature control device which electrically governs proper cooling of engine head, oil and carburetor air or coolant temperature for fighter planes, announced by General Electric Co., is expected to make the fighter pilot's job easier, by its automatic functioning.

Secret of the new device is a temperature-sensitive material, a combination of metallic oxides, which reacts through an electrical system to open the flaps controlling flow of air to the engine, at predetermined temperature. When highest allowable operating temperature is reached, flaps will be full open. A delicate relay of only 0.0008 watt in power, causes the control to stop the flaps at any position between open and closed, as indicated by engine temperature.

▶ **Wind Resistance Cut**—The control makes sure that the flaps are never open wider than is required by the temperature, thus reducing wind resistance created by the

flaps extending into the airstream to a minimum consistent with proper cooling, and increasing the speed of the plane. The device also lengthens engine life by preventing engines from overheating.

Most other temperature control systems require the pilot to watch his temperature gauge and put the system in operation manually by working a switch on his control panel. The new system can be located in any part of the plane where space is available. It has been completed after several years

25 POSITIONS

Start NOW — Continue

POST-WAR!

The U. S. Navy has war materials contracts with us extending at least through January 1, 1946. As soon after that as the Japs are licked, we will embark on a post-war production program to supply both U. S. Navy and civilian needs for which we have been making marketing and sales studies for over a year. This is, therefore, an opportunity for qualified men to get set for the future with an organization of the highest standing in the Engineering and Manufacturing field.

We are able to offer immediately at highest rates, on a 52 1/4 hour week basis with 1 1/2 for all time over 40 hours weekly, 25 positions to the following:—

ASSISTANT PROJECT ENGINEER (1)

Engineering degree or equivalent engineering training, plus not less than 5 years' aircraft engineering experience.

STRUCTURAL DESIGNERS (5)

4 years' aircraft, plus engineering college degree or suitable equivalent.

LAYOUT DRAFTSMEN (10)

4 years' drafting experience, plus 2 years' engineering college or suitable equivalent.

STRESS ANALYSTS (3)

Engineering degree, plus 2 years' stress experience.

CHECKERS (2)

2 years' engineering college or equivalent, plus at least 3 years' aircraft drafting experience. Able to get along with fellow workers. Accurate and steady.

DETAIL DRAFTSMEN (4)

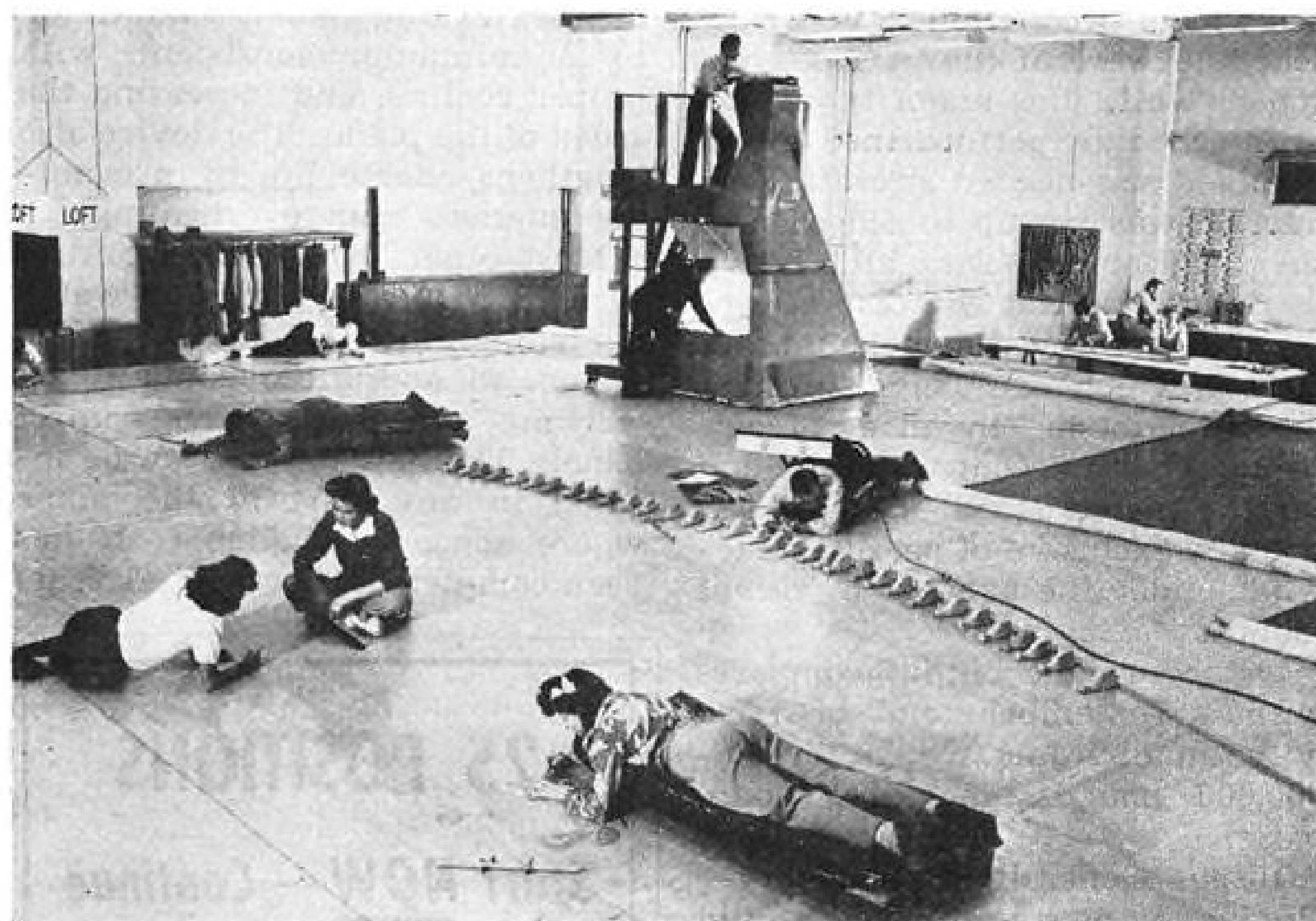
High school education with one year drafting training or experience.

IF YOU ARE AVAILABLE

under the rulings of the War Manpower Commission and can meet the requirements of any of these positions, communicate at once with—

C. J. Libby

EDO AIRCRAFT CORPORATION
Terminal Building, Flushing, New York



"DAT" LOFT AT LOCKHEED PLANT:

This is the DAT (detail assembly templates) loft at the company's Burbank plant. Here, on specially prepared metal plates, workers lie on rolling cars to make full size drawings of the lines of new planes.

of research, is now being readied for installation on several military planes and is expected to have post-war uses on large commercial planes.

1200 Major Changes Made in *Commando*

More than 1,200 major changes have been made in construction of the Curtiss C-46 *Commando* in the course of engineering the plane for war service and in designing changes for commercial use after the war. In all, some 4,000,000 engineering man-hours have been expended since its inception.

Despite the fact that the ship was primarily designed for commercial use, its transition as a war cargo plane has been such that hundreds of engineering changes are being made to re-transform it into a civilian commercial ship, incorporating the benefits of war experience and the changed requirements of airlines.

► **Power Plant** — The primary change in the commercial version from the war version will be a change in the power plant from Pratt & Whitney R-2800 engines to Wright Cyclone 18's with three-blade propellers, affording a considerable increase in power for the commercial ship.

Ground crews will find cargo handling simplified through incorporation of the two compartments under the passenger section. The

rear compartment is easily reached from the ground, while the forward compartment can be loaded or unloaded from a platform about the height of a normal hand truck.

► **Orders**—While only two orders for the post-war *Commando* have been announced publicly, others are in negotiation, with the sales effort of the Curtiss organization being directed in the medium and short range field.

It is probable that the plane will be built at the St. Louis factory at Lambert Field.—W. G. K.

Wright Cell to Test 4000 hp. Engines

First of 16 new test cells structurally capable of accommodating engines up to 4,000 hp. has been opened at Wright Aeronautical's Wood-Ridge, N. J., plant, to be used for the present in testing of 2,200 hp. Cyclone 18's being built for Boeing's B-29 *Superfortresses*.

Last of the new cells will be ready for use by the middle of December and while the tests were designed to handle test operations of engines with almost twice the present horsepower mark, company officials said the assignment for some time to come will be connected with existing models of Wright engines.

► **Fire Protection**—All cells are equipped with automatic fire fighting systems which can instantly flood the chamber with carbon

dioxide gas. To speed the job of mounting engines, catwalks have been installed giving direct access in each cell to the engine from the second floor control room and the floor of the test cell itself. Sections of these walks are retractable and are drawn away from the engine while it is running.

\$70,000 for Ideas

Suggestion awards to Canadian aircraft workers now total more than \$70,000, with an estimated saving of \$567,000 in aircraft construction costs as a result of the suggestions.

One of the latest awards went to an employee of Noorduyn Ltd., of Montreal, who suggested pre-assembly of conduits, junction boxes and wiring for the Noorduyn UC-64 *Norseman* transport on a bench instead of inside the wing of the plane. The work is then installed as a unit and time is saved not alone in assembly of the section but in the time the plane would have to be stopped at that stage on the production line.

New *Invader* Props

Douglas' new A-26 *Invader* is the 75th type of United States warplane to use Hamilton Standard propellers during this war, the sixth in the Army's attack bomber class.

Propellers are three-bladed Hydromatics, 12 feet, 7 inches in diameter, geared to one-half the RPM of the 2,000 horsepower Pratt & Whitney engines. The blades incorporate the Clark-Y airfoil. The propellers are manufactured by Nash-Kelvinator and Remington Rand, both licensees of Hamilton Standard Division of United Aircraft.

Rangers for G-44's

The 25 Grumman G-44 *Widgeons* to be built for the civilian market will be powered with Ranger engines declared surplus to Army needs, it has been learned. Industry sources were unable to say whether the Rangers would be engines that had been used or taken from excess stocks of spares. Whichever they are, however, they will be returned to the Fairchild factory to be reconditioned or checked.

Grumman thus far is the only aircraft company given permission to turn out planes for the civilian market.

TRANSPORT

Standard & Poor's Analysis Sees "Big 4" Dominating Airline Field

Smaller units, such as PCA, National, Northwest and Northeast also are "destined for an expanded role," investment advisory organization says.

The "Big Four" will continue to dominate the domestic field, according to a current analysis prepared by Standard & Poor's, investment advisory organization. These carriers are identified as: American, United, Eastern and TWA. The service also believes smaller units such as PCA, National, Northwest and Northeast are "definitely destined for an expanded role."

Based on its analysis, Standard and Poor's raised the market ratings on American, Eastern and PCA to "buy" from "above average." At the same time, the rating on Braniff was lowered from "average" to "below average" since the "sharp run-up in the stock has not been matched by the relative improvement in the company's outlook." Other classifications show for "above average"—Chicago & Southern, Northwest, TWA, United and Western. Joining Braniff in "below average" is National. An investment opinion on Pan American is sidestepped completely as the "factors governing the future of air transport relationships in the international field are too confused to be assayed intelligently at present."

► **"Speculative"**—The service concludes airline stocks are highly speculative and are selling around all-time peaks. The industry is believed beyond the stage where the purchase of shares could be characterized as a shot in the dark. Caution is directed, however, toward the recommended issues as "anything but a distinctly long-term speculation."

A strong factor in the survey's opinion is the absence of a real reconversion problem for the airlines. The volume of air travel is "certain to be very large—swelled by the circumstance that it will take some time before normal use of highways is restored." The inference is that the air carriers will not be troubled by the competitive

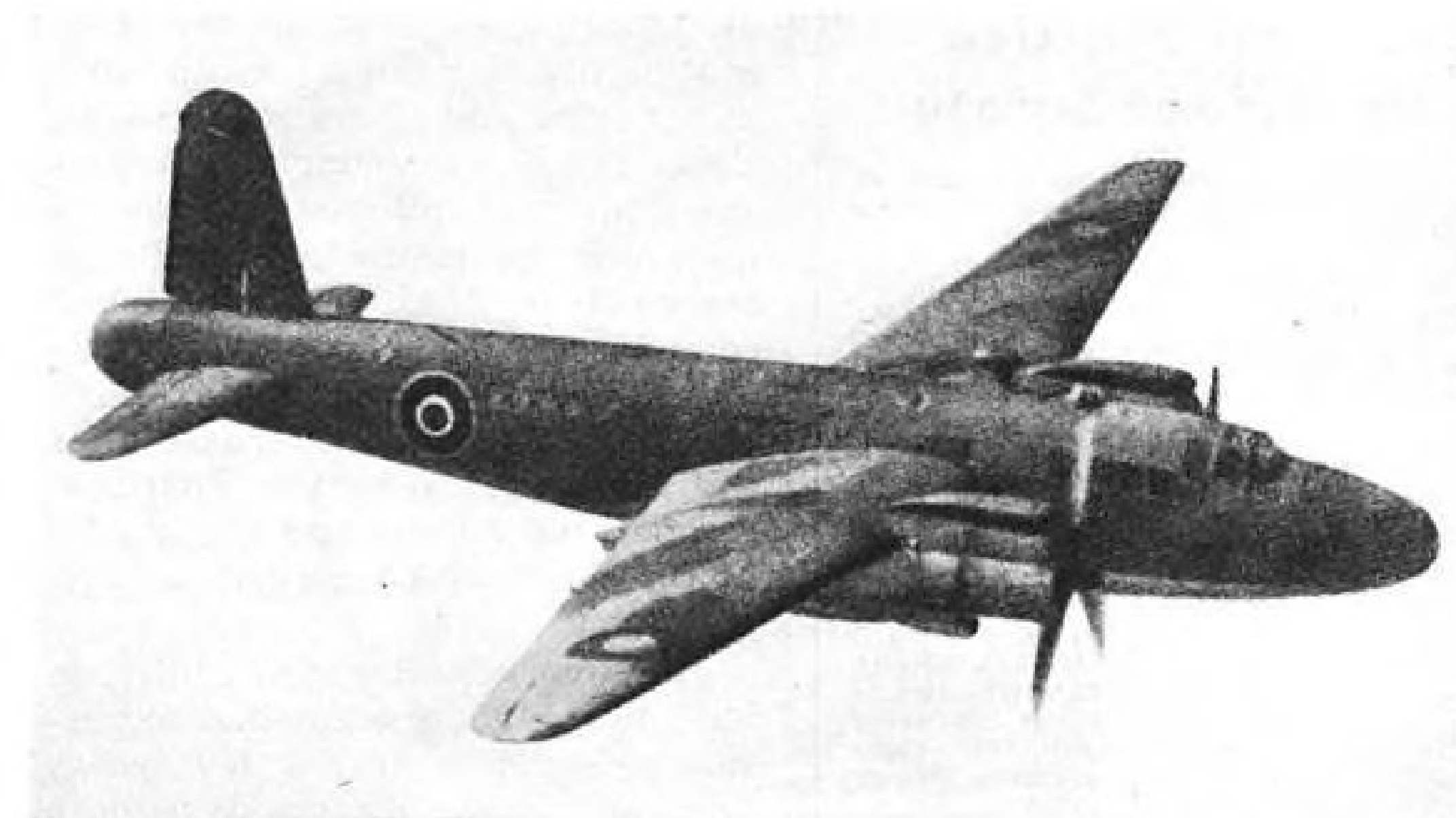
influences of auto and bus travel for some time. This represents a novel approach to most observers, as this type of traffic has had little effect on air transportation. Moreover, despite existing highway conditions, bus lines are operating at peak levels and will probably continue to do so over the near-term. ► **Competition**—As more buses are made available, the motor carriers will have increased capacity at their disposal. It can thus be seen that air travel is little concerned with any actual inroads from motor vehicles. The fact further remains that from the standpoint of speed, time and comfort the air carriers have little to fear from highway sources.

While it is correct to assume that no serious reconversion problem faces the airlines, there is a

strong tendency to overlook the major part war-stimulated conditions have played in mounting earnings experienced by the group. In other words, during this post-war period when reconversion is the big bogey in many minds, the prevalence of more "normal" operating conditions may see the evaporation of certain traffic now existent only because of the war.

► **1944 Net Put Above 1943**—Full 1944 net income is placed well above that of 1943 by Standard & Poor's. Recognition is accorded the effect of the return of more planes to commercial service. With high load factors continuing and operating costs remaining relatively low, increased earnings are but a natural result. Also, operations look good from a comparative viewpoint. Passenger and express rates were reduced in July, 1943. This made for a condition where such rates were lower in the first half of 1944 than a year ago. Since the current month of July, however, comparison can be made on a par and equitable basis.

In looking ahead, the survey recognizes that the load factor is bound to drop sharply from that of wartime, but airline operations should be far more profitable than before the war, even if there is no relaxation of tax schedules. Little is said about the tremendous increases in costs which are bound



BRITISH TRANSPORT IS BOMBER DEVELOPMENT:

This converted Vickers-Armstrong Warwick transport is a British ship developed from the Wellington bomber design. It is used for military transport and air-sea rescue work dropping dinghies. Carrying passengers and freight, it operates in many theaters for the RAF, and may be a forerunner of post-war transport. Data are unavailable on load, passengers or crew as transport, but in rescue work the plane carries a crew of seven and eight 303 machine guns. Built by Vickers, it has a 96-foot 8½-inch wing span, 70 feet 6 inches length, 18 feet 6 inches height, 1,006 square feet wing area, and 45,000 pounds weight. Power is from Pratt & Whitney double Wasp engines. Picture is from the *Aeroplane*, British aviation journal.

to accompany any broad expansion program such as is envisioned by the air carriers. The huge capital expenditures necessary for plane acquisitions is noted. As fully established by now, these purchases are expected to be financed by chattel mortgages, equipment trust notes, and through further stock sales which will dilute existing equities. All this is bound to restrict dividend payments for some time to come.

Limited Profits Plan Studied — The analysis takes note of the "sentiment in regulatory circles for ultimately limiting airline profits to 10 percent of invested capital." It is Standard & Poor's opinion that such limitation is unlikely until the air transport industry reaches a relatively advanced stage of stabilization. There may be considerable difference of opinion in this respect. The Board, in its airmail rate proceedings, has repeatedly called attention to "excessive" earnings where present and the lessening "need" thus decreasing mail payments to the contractors so that a "reasonable" rate of return would be realized on invested capital. The consistent minority view of Board member Branch with occasional support



BOSTON ROUTE OPEN:

Mayor Tobin of Boston greeted Captain Edward Rickenbacker, Eastern Air Lines' president, as the carrier inaugurated service to Boston Nov. 1. The New York-Boston link, awarded to Eastern in the CAB's Boston case, is now being served with six daily round trips.

elsewhere is a reminder that this threat is far from academic.

The survey also attempts to interpret the Board's policy in awarding new routes. It is maintained that CAB, in making these new awards, is guided by existing routes operated by the various applicants and by their presumptive ability to provide efficient service, as indicated by financial responsibility, organizational setup and experience, and operating records. Thus, the service concludes, "it is apparent that the lion's share of the new route-mileage will be awarded to the well-established companies." To this analysis, serious difference of opinion may exist. For one thing, and overlooked, is the attention given the Board to competitive factors and the ability of the territory concerned to support new routes.

Moreover, the larger airlines do not always get the coveted extensions. For instance, a few years ago, the Denver-Kansas City route went to Continental. More recently, National was certificated from Jacksonville to New York. Perhaps more significant is the fact that the Board also may be desirous of making many of the smaller lines more self-sufficient. More often than not, this can be done only by providing them with a more extensive operation which permits them to make a more intensive exploitation of air travel markets.

Low Operating Cost Of Mercury Stressed

Martin's claims for projected transport regarded as indication airlines may bid for railroad business on money-saving as well as time-saving basis.

New possibilities that airlines will offer competition to railroads on a money- as well as time-saving basis are noted in planes now reported in the advanced planning stage.

Details of one such aircraft have been disclosed by the Glenn L. Martin Co., whose model 202 (AVIATION NEWS, Aug. 7) is described by company officials as capable of operation at a direct cost of 1.15 cents per passenger mile with indirect costs about the same. If the plane meets its builder's expectations, it may place air carriers in a position to compete with railroads for coach as well as Pullman business.

Trunk Line Plane—Named the *Mercury*, the Martin 202 is not primarily a feeder plane, but is designed rather for short-range high speed, economical trunk line operations of from 50 to 700 miles. Interior design emphasizes accommodations for 36 passengers compared with 21-passenger ships now in use although cabin arrangements permit use as a cargo craft.

Mockup of a low-wing type is to be finished in about a month, with first production plane predicted for next year. Whether final design will call for high- or low-wing placement will be decided by prospective purchasers. Leanings now are toward low-wing type.

The design was worked out by Martin engineers in consultation with airlines and the Air Transport Association. New Martin designed flaps running the full length of the wing permit higher wing loading without loss of low stalling speed demanded by the Civil Aeronautics Administration's requirements for airline planes.

Cruising Speed 250-300 Mph.—Powered by two Pratt & Whitney R-2800 engines, the plane has a claimed cruising speed of from 250 to 300 mph. The *Mercury* is expected to cruise at 254 mph. at 60 percent power, nearly 100 miles faster than the most widely used commercial transport. It is designed to operate in and out of fields designed for the DC-3. Higher powered engines coupled with

new design permit one-engine climb after take-off.

Other features include movable cargo bulkhead and folding seat sections which obviate need for removal.

Preliminary cost estimates range from \$250,000 to \$300,000, depending on quantity and equipment.

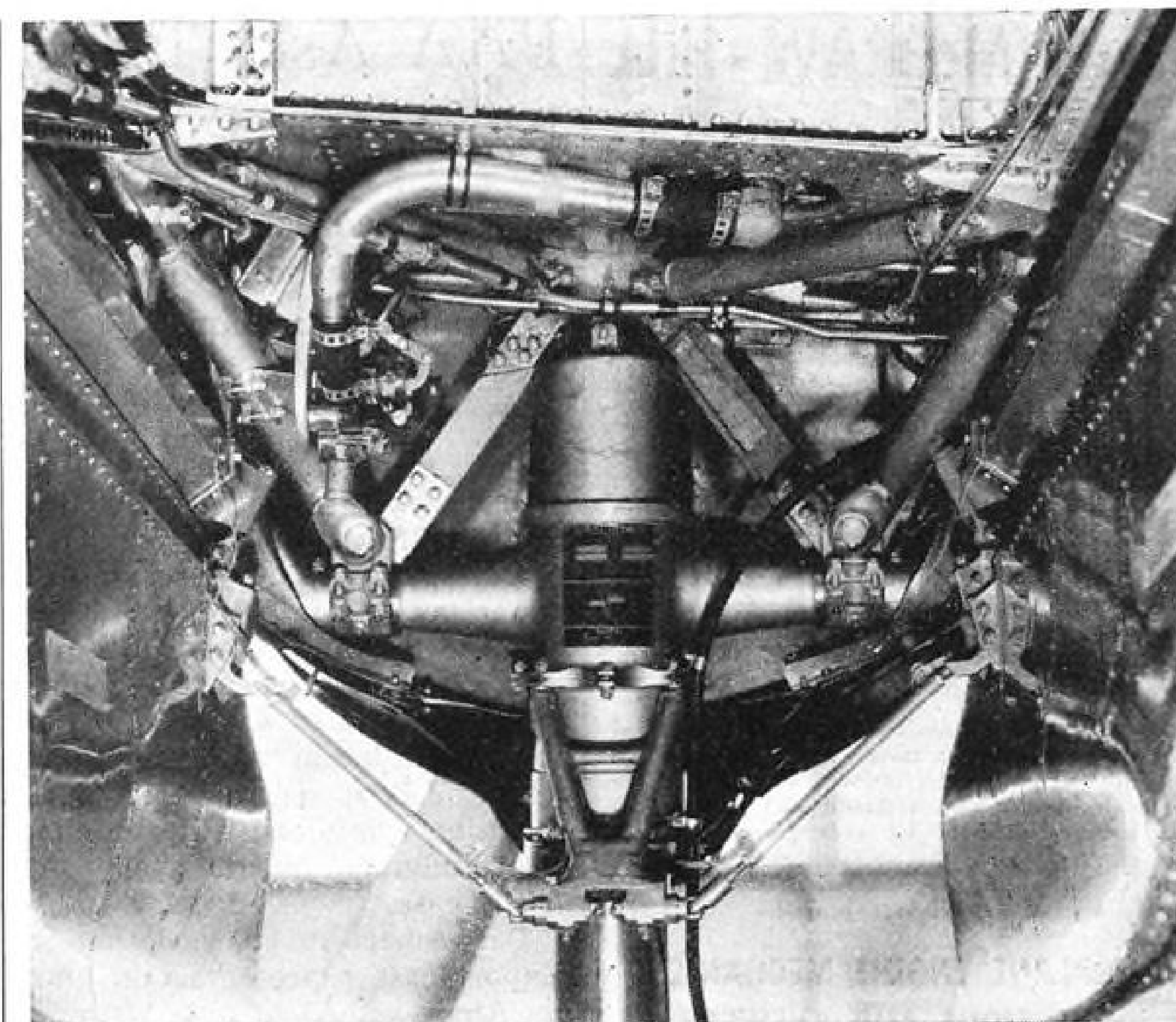
CAB SCHEDULE

- Nov. 13. Date for exchange of exhibits in the New England feeder case. (Docket 399 et al.). Postponed from Oct. 26.
- Nov. 15. Rebuttal exhibits due in Florida cases. (Docket 489 et al.). Postponed from Nov. 1.
- Nov. 15. Exhibits due in applications of Ellis Air Transport and Ketchikan Air Service for additional service in southeastern Alaska. (Docket 876 et al.).
- Nov. 17. Hearing at Juneau, Alaska, on applications by Alaska Coastal Airlines for routes between Juneau and Skagway and Juneau and Gustavus, Alaska. (Dockets 878 and 1539).
- Nov. 20. Hearing at Ketchikan, Alaska, on application of Ellis Air Transport and Ketchikan Air Service for additional service in southeastern Alaska. (Docket 876 et al.). Postponed from Sept. 25.
- Nov. 23. Deadline for rebuttal exhibits in New England feeder case. (Docket 399 et al.). Postponed from Nov. 13.
- Nov. 24. Prehearing conference in National Airlines' reopened rate case for AM 31 and AM 39. (Docket 824).
- Nov. 27. Hearing date for the Florida case before Examiner William F. Cusick. (Docket 489 et al.).
- Dec. 4. Preliminary briefs due in Latin-American proceeding. (Docket 525 et al.).
- Dec. 4. Hearing in the New England feeder case (Docket 399 et al.) at Washington, D. C.
- Dec. 10. Exhibits due in South Atlantic route case. (Docket 1171 et al.). Postponed from Oct. 16.
- Dec. 13. Tentative hearing date, North Pacific routes.
- Dec. 18. Briefs in the North Atlantic proceeding due (Docket 855 et al.).
- Dec. 23. Exhibits due in the Pacific proceeding.
- Jan. 10, 1945. Hearing date for South Atlantic case. Postponed from Nov. 1. (Docket 1171 et al.).
- Jan. 10, 1945. Tentative hearing date, Central Pacific routes.
- Feb. 1, 1945. Tentative hearing date, Australian routes.

Data on Mercury

Specifications issued by Glenn L. Martin Co. for its *Mercury* short-haul airliner include the following data. The plane is based upon specifications submitted to manufacturers by the Air Transport Association.

Wing area	765 sq. ft.
Vert. tail area	129 sq. ft.
Hor. tail area	191 sq. ft.
Take off, h.p.	2100
Normal power	1700
No. of engines	2
Propeller	Hamilton Std., 4 blade, 13 ft. 7 in. dia.
Gross weight	33,500 lbs.
Manufacturers weight empty	
30 passenger version	22,235
36 passenger version	22,381
Fuel capacity	600 gals.
High speed normal power at 8500 ft.	314 mph.
Take off distance over 50 ft. obstacle (one engine inoperative at getaway) in calm air	3500 ft.
Landing distance over 50 ft. obstacle in calm air	2250 ft.



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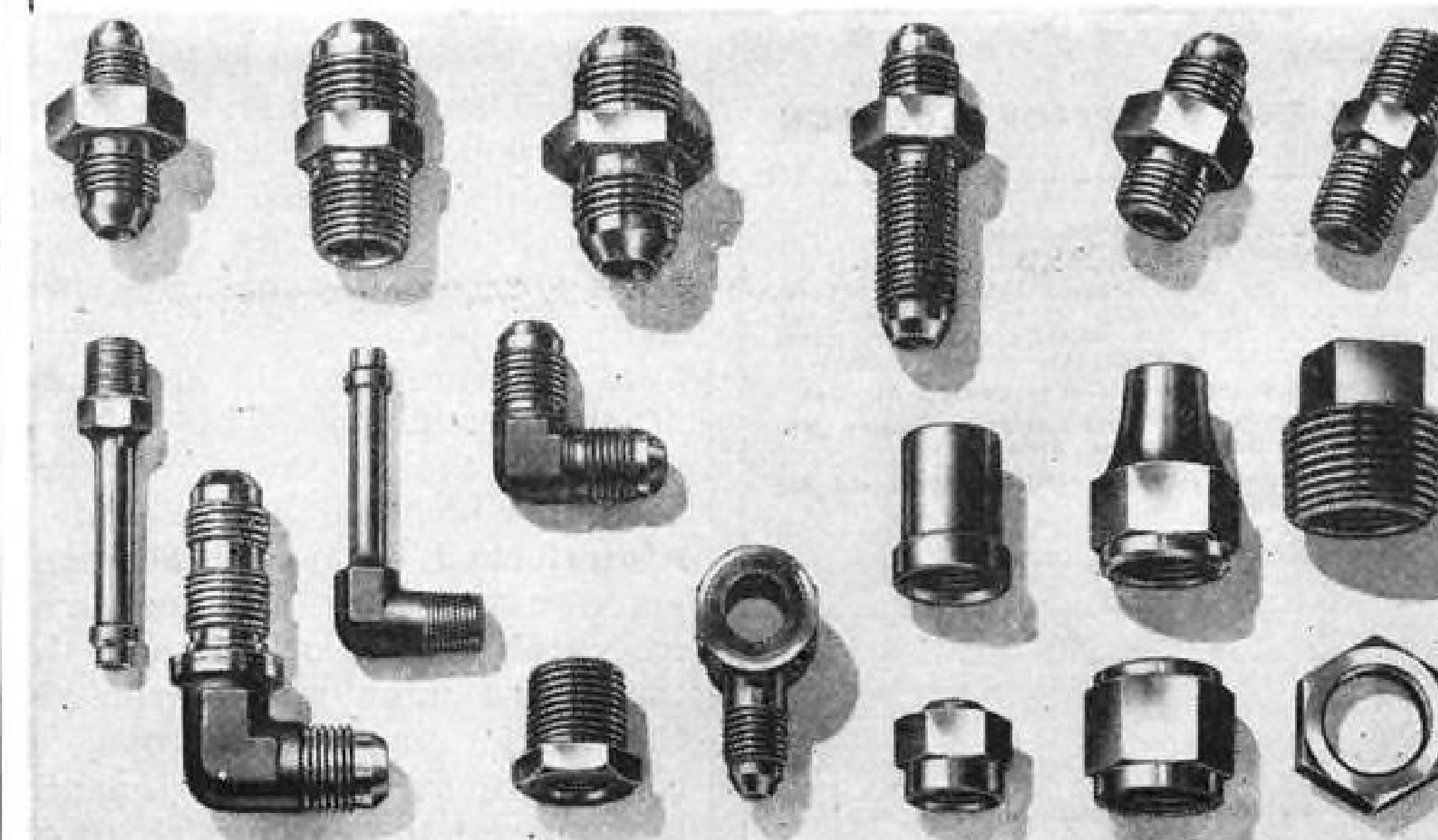
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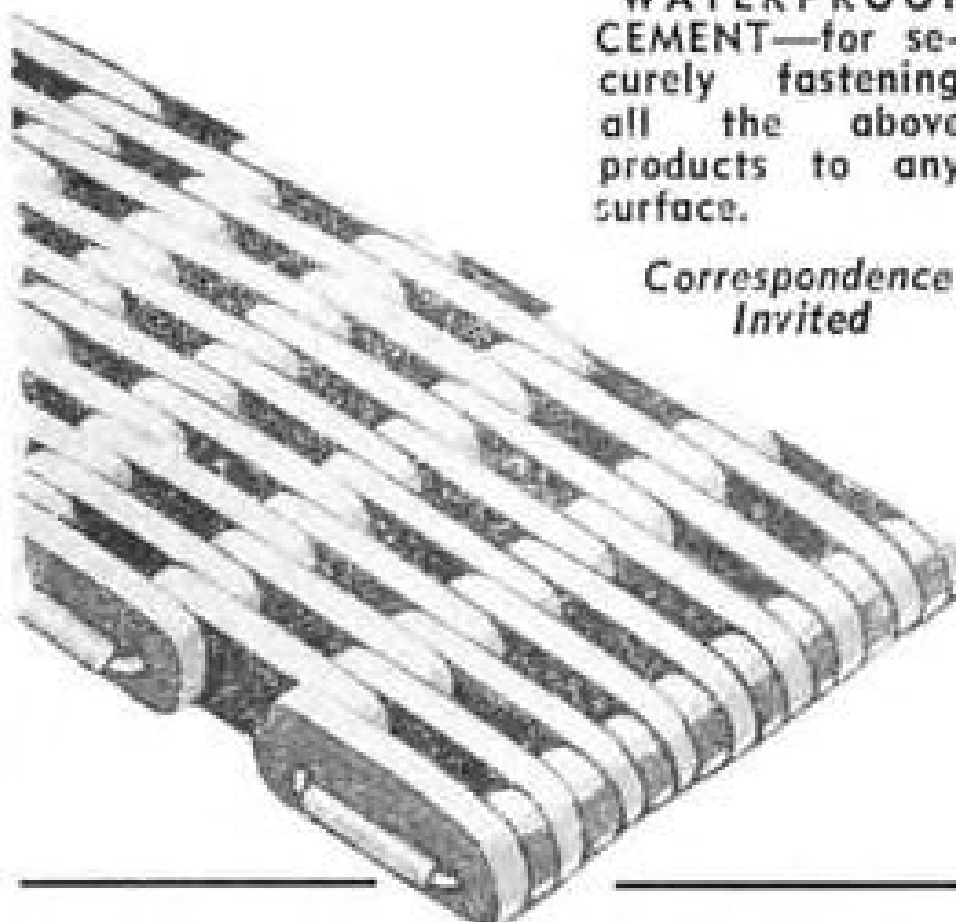
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AIRPLANE ENGINE MECHANICS QUESTIONS AND ANSWERS

By Rolla Hubbard, Instructor, Flight Engineer School, Pan American Airways; and Augustin Dilworth, Inspector, American Export Airlines. 260 pages, 5 x 7 1/2, illustrated, \$3.00.

Designed to give prospective maintenance men, mechanics, workers in industry, and members of the Armed Forces an opportunity to prepare themselves for CAA licensing. The multiple choice type of examination, as used by the CAA, is followed, and the contents are closely allied to the type of instruction given to the Army Air Forces technical training command and leading aviation ground schools of this country.

MILITARY MAPS AND AIR PHOTOGRAPHS

By A. K. Lobeck, Professor of Geology; and W. J. Tellington, Captain, Cavalry; Instructor, Department of Military Topography and Graphics, United States Military Academy. 256 pages, 5 1/2 x 11, 307 illustrations, \$4.00.

Written to meet the need for a simple, authoritative, single-volume presentation of basic principles and present-day techniques in map reading, this book stresses the habits and attitudes needed, such as the value of a good memory, powers of observation, and judgment of distance, time, and direction. The student is shown how to visualize and understand the landscape depicted by the map, and is instructed in the common use of air photographs.

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PAA Asks Export Acquisition, N. Atlantic Cases Consolidated

Airline makes formal motion, declaring that prior decision on Export would constitute a prejudgment of North Atlantic route proceeding.

By DANIEL S. WENTZ II

Pan American Airways last week asked Civil Aeronautics Board to consolidate for report oral argument and decision the American Export acquisition case and the North Atlantic route proceeding. Pan American's request took the form of a formal motion for consolidation, asserting that a prior decision on the Export acquisition would constitute in effect a prejudgment of the North Atlantic case.

Pan American charged that the Export case represented an effort by American Airlines and American Export "to create a situation in which the Civil Aeronautics Board and the President would be, in practical effect, required (sic) to award to American's controlled subsidiary a certificate to those areas in Europe, namely London and Paris, in which American has indicated an interest."

► **Parallels CAB Examiners' Stand**—Pan American position closely parallels that taken by the CAB examiners in their report on the acquisition, which recommends that "the Board should not take any action at this time that will interfere with its freedom of action in dealing with the future of Amex's certificate."

The theory behind both these views, of course, is that if the Board permitted American Airlines to make a \$3,000,000 investment in Export, it would, perforce, have to make permanent the temporary certificates Export now holds. The examiners therefore recommended that the Board find American's proposed investment in an airline holding only temporary certificates not consistent with the public interest, pending final determination of the status of the certificates. This will be settled in the North Atlantic proceeding which has been heard.

► **Interlocked**—Most observers agree that the two cases are almost inseparably interlocked, and that the Board might well dispose of the matter in simultaneous decisions. Some also feel that the language of the examiner's report

shows slight indications favoring the acquisition, despite the fact that no outright statement was made.

Pan American's motion outlines several possible decisions, one of which it feels CAB will make in the North Atlantic case. The one which Pan American will ask the Board to make is that the national interest would be best served by one strong company in the international field. Another possible decision, say Pan American lawyers, is that the CAB will make Export's certificate permanent and grant extensions to Pan American and Export. This second alternative seems to imply that the American Airlines acquisition of control of Export would be disapproved, preserving thereby the division between domestic and international carriers.

Other observers have been talking of a third possible decision which would wipe out what they consider to be the outmoded barrier to international operations by domestic lines. This would be to approve the Export acquisition case and extend Export's European routes, to certificate Transcontinental & Western Air for the routes it is seeking, and to extend Pan American's system in accordance with its applications.

Stratoliner Tests

With one of TWA's five rebuilt Boeing Stratoliners already flying, Civil Aeronautics Administration's flight test inspectors soon will begin putting the plane through performance tests required for airline certification. TWA officials expect to have the second plane in the air before Dec. 1.

No advance predictions as to whether the remodeled Stratoliners will be able to meet CAA's rigid standards for airline craft are possible, but TWA officials confidently expect no difficulties. They believe both rebuilding and inspection will be completed in time to have all five planes flying by Jan. 1.

Swedish DC-4's

A contract for ten DC-4's at a per unit ceiling price of \$385,000 each has been completed between Douglas Aircraft Co., Inc., and Swedish International Airlines (SILA). Preliminary sections of the contract were completed nearly a year ago, but no public announcement hitherto has been made in the U. S.

The order raises the manufacturer's commitments for DC-4's to a reported total backlog of 72 units, plus the undisclosed number for which Eastern Airlines is negotiating, believed to be eight, with a like quantity on first refusal basis.

SILA, which probably will be

Sweden's international operator after the war, is a corporation in which various shipping companies and industrial firms participate. Its present plans include trans-Atlantic operation.

Stockholms-Tidningen, a Swedish daily newspaper, has reported the projected construction of a large airfield near Stockholm to accommodate overocean traffic. It will have four runways, each two miles long, and will be located on the shore of Lake Fysingen thirteen miles north of the capital. Sections of the airport may be in use in 1945, and the whole project probably will be completed within two years.

Qantas Held World's Longest Airline

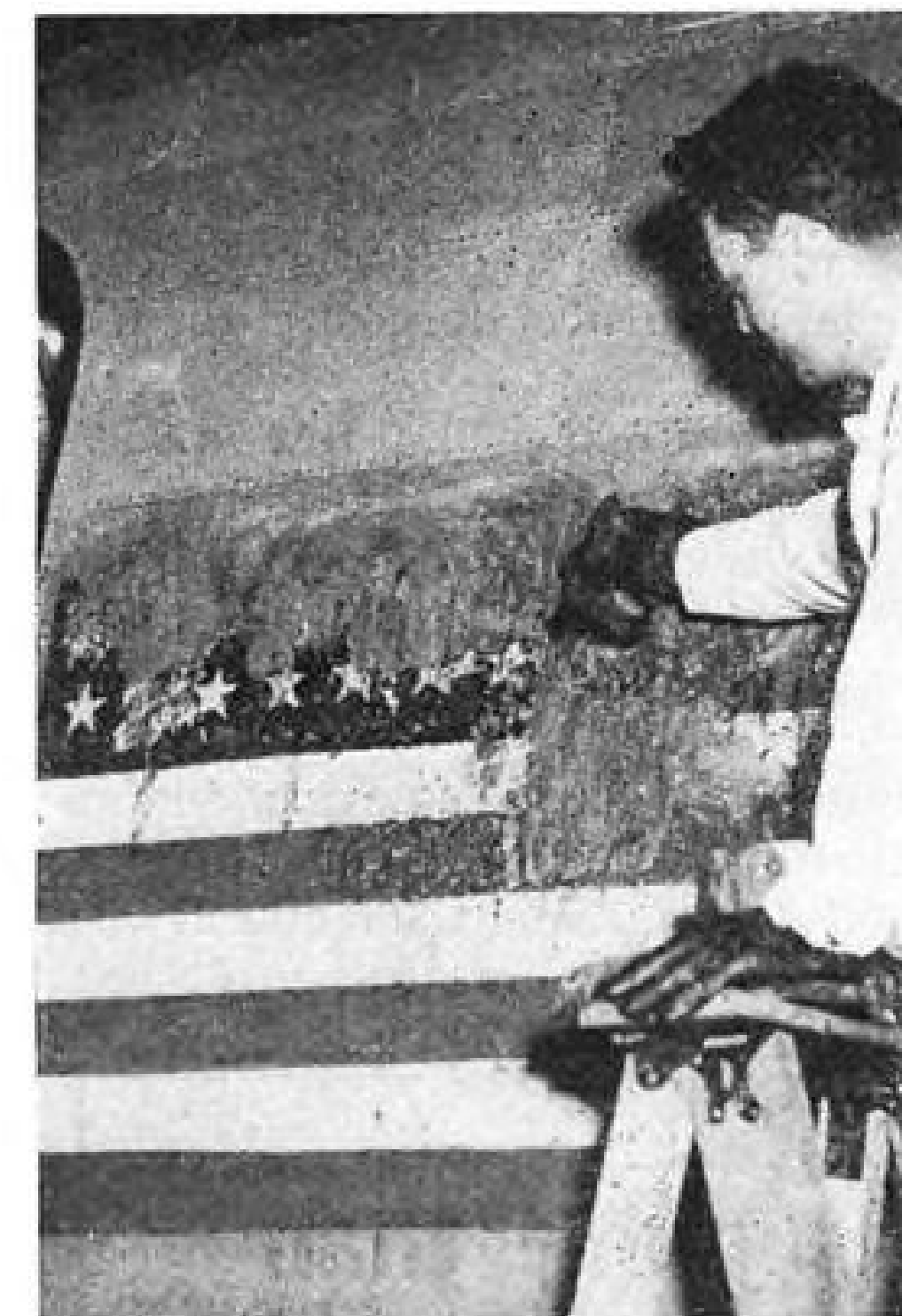
Links England with Australia via Middle East, with 3,500-mile nonstop hop over Indian Ocean.

Much has been written about Air Transport Command's supply line across the Pacific, but less is known about the Indian Air Service by Qantas Empire Airways,

linking England with Australia via the Middle East, Burma and India.

This line is described by *Flight*, British air publication, as the world's longest air route. Claims are that the Indian Ocean crossing of over 3,500 miles is the longest non-stop operation by a regular service. Time averages 27 hours. ► **100th Crossing Made**—Qantas Empire Airways recently made its 100th crossing of the Indian Ocean. Its service started in July, 1943, after 16 months without direct air connections with Great Britain and Australia. The route was inherited from British Overseas Airways.

A few *Catalinas* keep the service going. Long-range tanks give them a fuel range of 36 hours under heavily loaded conditions. Average weight of fuel is about 16,000 lb. Payload runs 1,000 to 1,200 pounds and overall weight of each ship is 35,000 lb. *Flight* says the average number of passengers is three and average weight of mail and freight 500 pounds. Qantas undertook delivery of the *Catalinas* across the Pacific to Australia from the U. S. in 1941.



DE-CAMOUFLAGED:

A Pan American Airways workman removes the flag painted on the bow of a Clipper as part of the work of taking camouflage paint off all PAA's 42-ton Boeing flying boats. War paint removal is expected to save 260 pounds on each plane and 960 man-hours in maintenance time over a year. The line's insignia will supplant the camouflage.

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Airlines' Certainty of Profits Prevailing Note at Coast Hearings

Major companies reveal for first time in CAB session at San Francisco their expectation of operating four-engine equipment on short-haul runs on passenger and cargo feeder lines.

Certainty of potential profits in passenger and cargo feeder enterprises dominated the Civil Aeronautics Board's West Coast hearing in San Francisco last week.

Major airlines told for the first time their expectation of operating four-engine equipment on short-haul runs in the near future and reiterated their readiness to plunge into the operation of feeder routes.

► **Deficits Expected**—Feeder companies testified their willingness to accept first and second year deficits on the strength of future profit indications.

The hearing's thirteen applicants for 89 new western routes qualified by the thoroughness of their estimates of markets, of operating costs and revenues their hope of winning from the CAB full rather than experimental certification of their requests.

They came into the hearing with

close to a quarter-million dollars invested in the preparation of their cases.

At the midway point of testimony scheduled to run through two weeks they had indicated substantially the application of three basic route patterns: the "shoelace" system of zigzagging trunk routes to serve intermediate and offset communities; the "loop" route originating in a major trade area; and the "starfish" system of routes radiating from a major trade area.

► **Divided**—Equally divided were applicants planning to use the in-flight cargo pickup service proved by All American Aviation and those contemplating all-points landings.

But there was unanimity in evidence that whatever grants are made by the CAB service will begin with aircraft ill-suited to the demands of operating efficiency.

That no true "feeder type" airplane now exists or will be available for operation within the next eighteen months was emphasized.

► **Lockheed Entry**—The only hopeful sign, equipmentwise, was the testimony of Leland Hayward, president of Southwest Airways, seeking 21 coastwide feeder routes, that Lockheed Aircraft Corporation has under construction a passenger and pickup feeder plane which should be testflown by the middle of 1945 and be in production early in 1946.

Investment confidence in the

180 More Planes

Approximately 180 planes have been added to the transport allocation pool of the Surplus Property Board, all of types previously reported and none in the airline classification.

Seventy of the added planes are Cessna UC-78's, 39 are Curtiss AT-9's, 28 Beechcraft AT-10's, 28 Lockheed Hudson AT-18's, seven Douglas RB-18's, and 10 Vega Ventura RB-34's.

proposed feeder enterprises was apparent in the declaration of applicants that they have assurance of bank loans and equipment trusts for the purchase of airplanes and ground equipment they will need.

Although subjected to countless challenges by attorneys of competing companies on points of accuracy, results of applicant research into passenger and cargo potentials—a variety of formulas were used to reach conclusions based upon studies of population, trade areas, business and wealth, travel habits and surface transportation—won indications of the approval of CAB Examiners Francis W. Brown and F. Merritt Ruhlen.

Both believe that the West Coast applications, and their method of preparation and presentation, will prove influential in establishing the pattern of future domestic feeder applications.

► **Research Costs**—The few direct offerings of evidence on the cost of research and preparation of applications undoubtedly will be discouraging to haphazard proposals for future routes.

Southwest Airways testified an application cost of \$30,000. Nevada Pacific Airlines spent \$68,000. Ryan School of Aeronautics invested

\$30,000 in its bid for six routes serving 120 cargo pickup stations.

Strangely, United Air Lines and Western Air Lines were the only domestic trunk route carriers to recognize to the point of seeking their own protective feeder routes the business challenge of the feeder airline applicants.

All major trunk carriers challenged constantly and persistently the accuracy of feeder airline evidence, but American's prime interest was pressing its application for certification on the San Francisco-Los Angeles route already served by UAL, TWA and WAL, while TWA principally sought two new stops at San Bernardino and Palm Springs.

Unexpressed but present was the belief of some feeder authorities that by frequency of schedules and departures and arrivals tailored to the convenience of cities served a carefully operated feeder company might "starve out" the operations of trunk carriers extended to intermediate stations.

In Southwest's brief was this expression of confidence in feeder airline planning:

"It would seem inevitable that any operating feeder airline eventually is bound to extend its services to all the major Pacific coast centers."

► **Feeder Men Optimistic**—Although all feeder applicants voiced optimism over long-range investment returns, the hearing brought into sharp contrast individual profit expectancies.

Ryan anticipated a first year mail and express revenue of \$671,068.58 and a gross net of \$52,279 after taxes from the flying of 1,555,560 revenue miles, and declared readiness to pay the president of the operating company a salary of \$24,000 a year.

Nevada Pacific, with a \$6,000 a year president, anticipated a net return of \$267,371 from the first-year's 3,545,614 revenue miles.

Others, offering only passenger and express revenue showings, declared dependency upon mail allocations at varying rates to break even or produce a reasonable operating profit.

► **Established Carrier's Bid**—That trunk line companies reflect the business hopes of the feeder applicants for the immediate post-war period was evidenced on the witness stand by Charles L. Gallo, TWA assistant to the executive vice-president: "It may well be that we will be operating local service with four-engine aircraft." He cited the

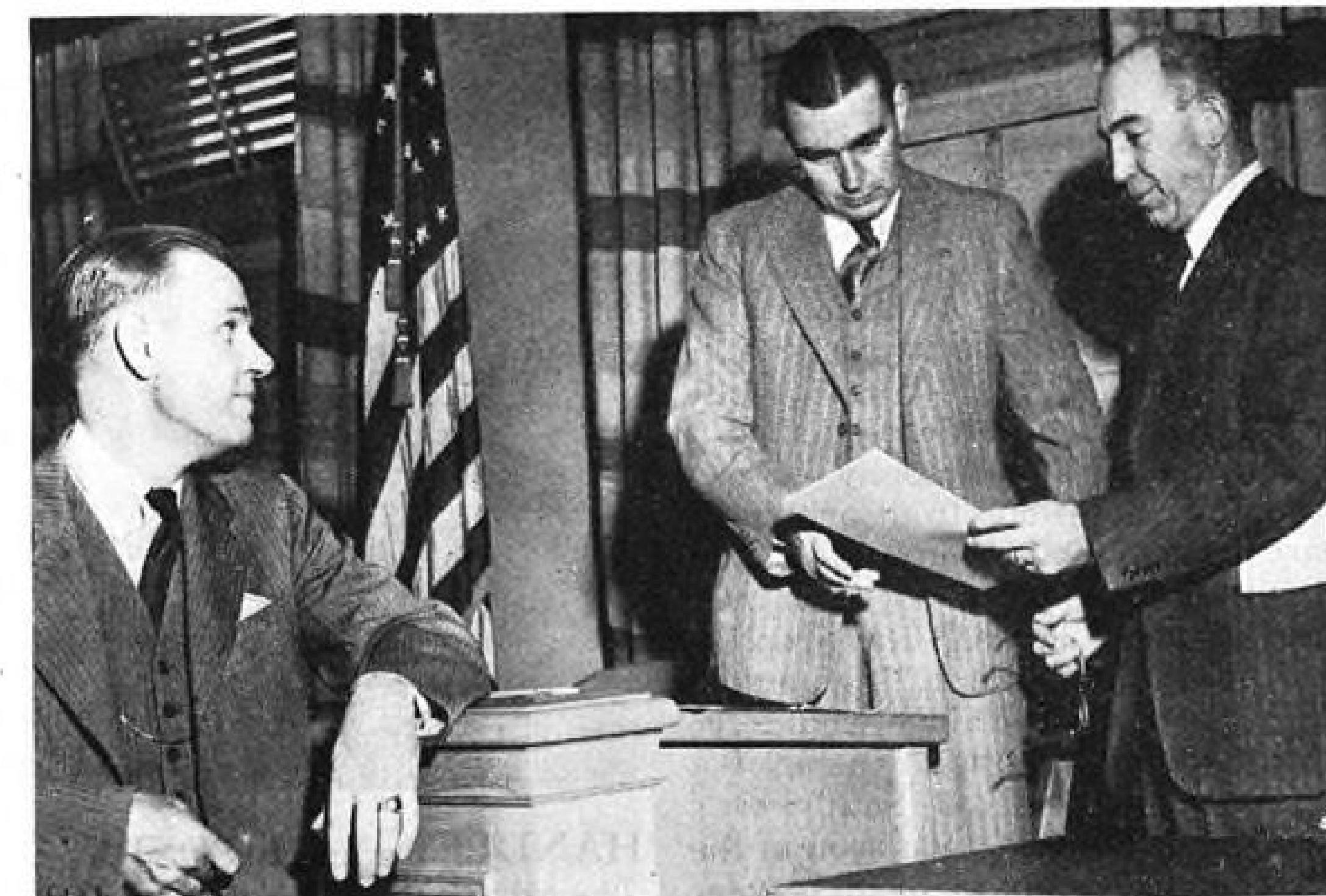


Exhibit Presented at West Coast Hearing: CAB Examiner F. Merritt Ruhlen receives a copy of an exhibit from Glen B. Eastburn, manager of Los Angeles Chamber of Commerce transportation department, at the hearings on the West Coast case which began Nov. 1 in San Francisco. At left is CAB's Assistant Chief Examiner Francis W. Brown, who is presiding over the proceeding. Eastburn, who pressed Los Angeles' request for widespread air services in California, also is vice-president of the National Aeronautic Association.

Constellation as the type of aircraft he had in mind.

Monopolistic development of feeder airline service in major trade areas was championed by James G. Ray, vice-president of Southwest Airways. Under cross examination he said

A SAVING AT EVERY TURN



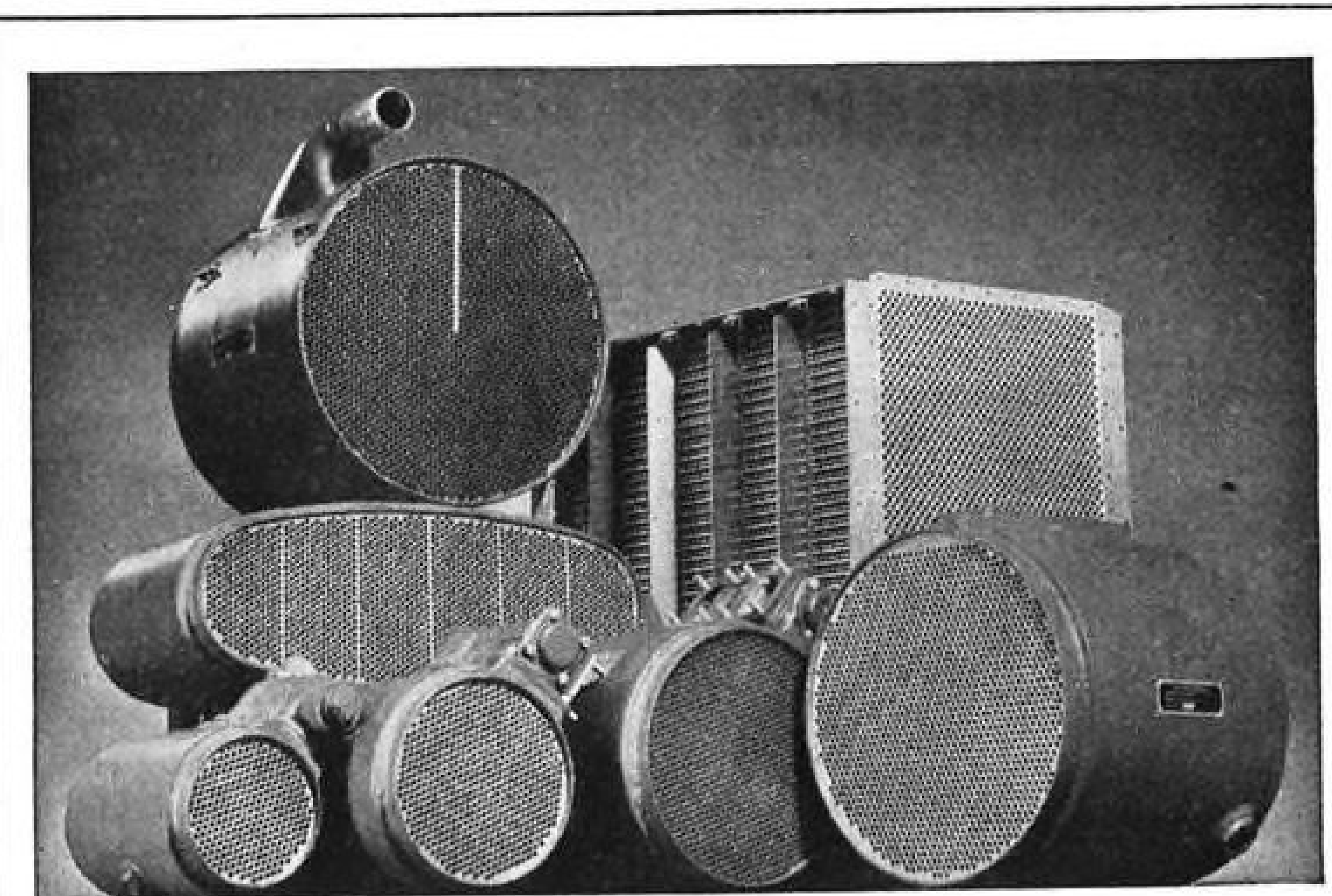
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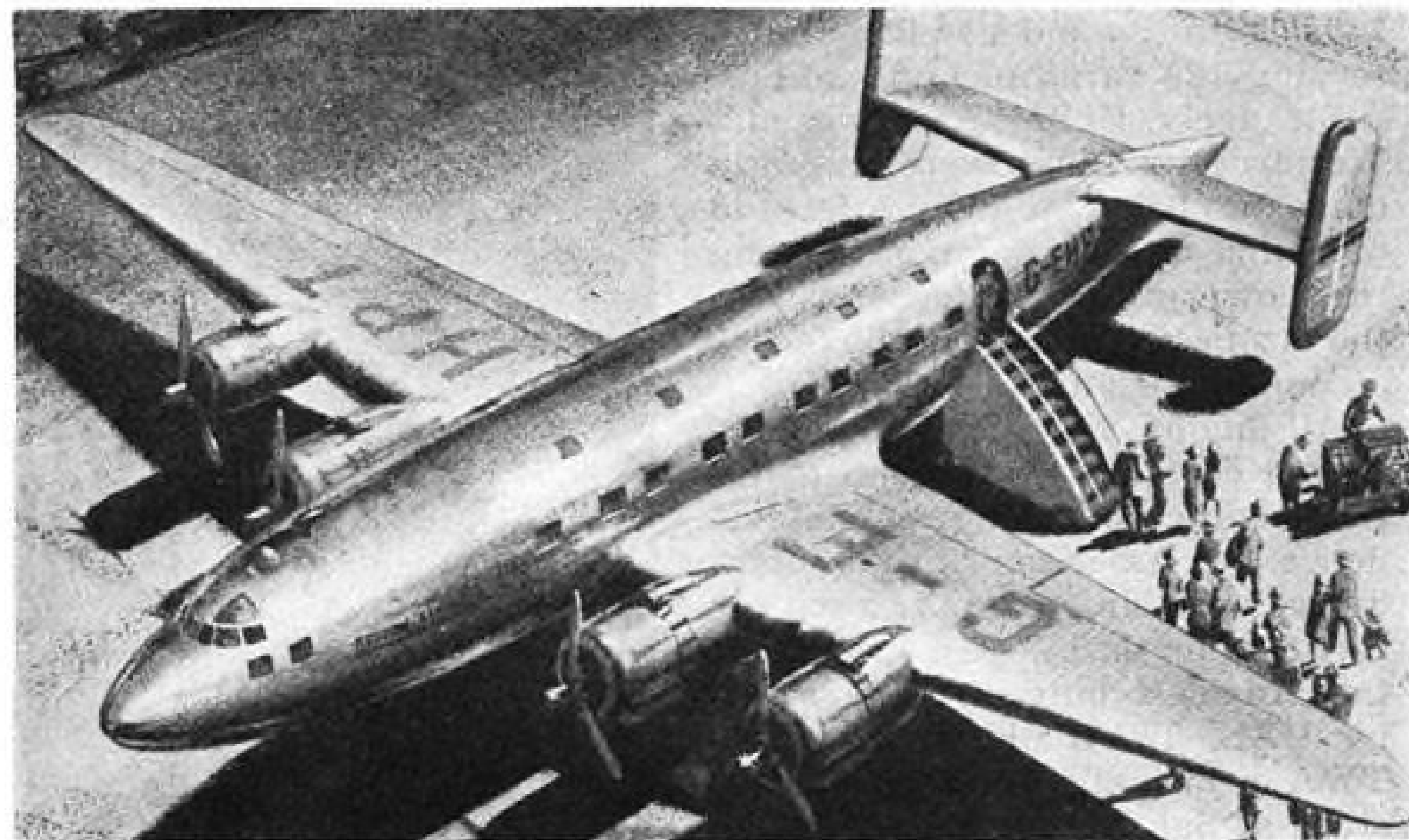
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"Monopoly is not good in any field unless highly controlled" and then declared his belief that there is "no room for two feeder companies in the operation of one trade area." Asked directly if he believed there will be room for other feeder operators in the five trade areas in which Southwest seeks certificates Ray said "No."

► **Southwest's Ambitions**—Asked if his company's philosophy of extending operations from one trade area into another indicated that Southwest "might go right on over the United States," Ray replied "Frankly, we'd like to. If given the franchises we certainly would see what we could do with them."

An indication of Southwest's ambitious planning was seen in the company's estimate of first year operating costs of \$5,809,335 in the flight of 12,132,235 revenue miles and an expected return of \$4,874,066 from passenger and cargo business. Unestimated mail pay was expected to balance the deficit and provide fair profit. Ray conceded that if the Lockheed passenger planes his company expects to buy are not ready at the required commencement of operations Southwest will be willing to accept certification for cargo and mail pickup



HANDLEY PAGE POST-WAR TRANSPORT:

The artist's drawing above, which has been insistently featured in recent advertising of Handley Page, British aircraft manufacturer, approximates in many details a description of the Handley Page Hermes commercial transport contained in a press report of the Society of British Aircraft Constructors, Ltd. According to the Society, construction on the prototype already is far along, and the plane may be flown within a few months.

service only during early operations. Southwest's estimate for first-year passenger revenues was \$4,602,324.

Handley Page Works On 35-Ton Airliner

The latest British entry in the race for post-war commercial airline equipment was announced last week by the Society of British Aircraft Constructors, Ltd., who disclosed that Handley Page was far along on the prototype of a 35-ton 50-passenger airliner known as the *Hermes*. The first *Hermes*, based in part on the successful Handley Page *Halifax* heavy bomber, will probably begin flight tests in a few months.

The *Hermes* is a conventional low wing all metal stressed skin four engine monoplane. The ship will be powered by four 14-cylinder Bristol Hercules engines developing a maximum of 6,600 hp. The Hercules is a radial air-cooled engine fitted with sleeve-type valves. Propellers will be de Havilland full feathering hydromatics.

► **34 Seats**—Present cabin designs envisage both passenger and cargo versions of the plane. In the former, a flexible internal cabin arrangement provides 34 seats for long haul daytime operation. Another plan calls for 32 seats, convertible to 16 berths for night travel. For short hauls, a cabin arrangement seating 50 passengers

is planned. A fourth de luxe Pullman type version features a "club saloon" for 20 passengers.

Other data include:
Range—2,000 miles.
Overall weight—70,000 lbs.
Freight capacity—16,000 pounds.
Pressurized cabin on passenger types only.

Maximum speed 340 mph.
Weak mixture maximum cruising speed 289 mph.

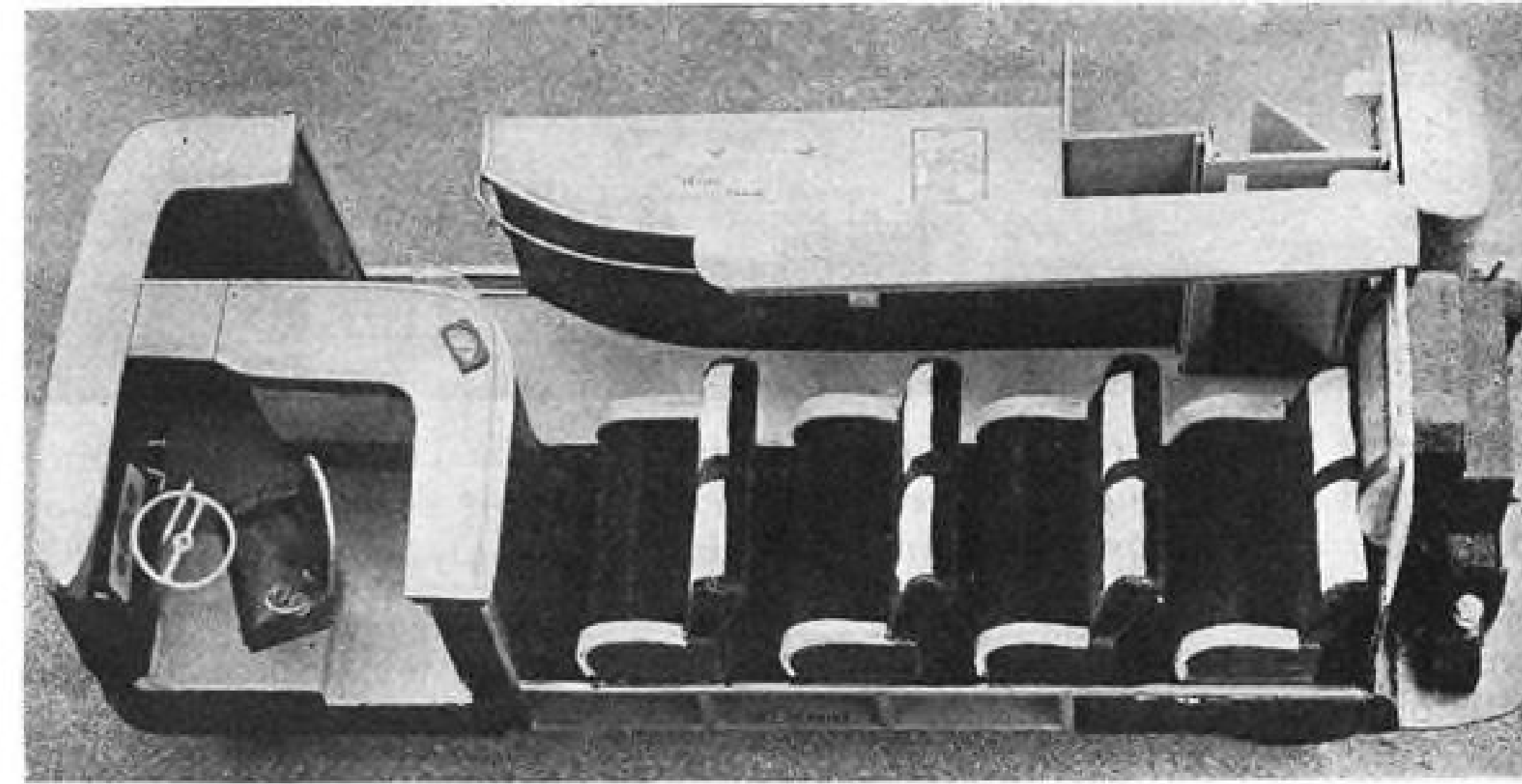
Long distance cruising speed 240 mph.

Cruising altitude 20,000 feet.
Cabin pressurized and heated.
De-icing equipment on wings, propellers, engines and tail area.
Cargo, mail and baggage space—640 cu. ft.

Other British manufacturers also are at work on commercial transport types. The Bristol Aeroplane Co. has under construction a plane known as yet only as Model 167.

► **Other Types**—The A. V. Roe Co., builders of the *Lancaster* heavy bomber and the *Avro York* transport, have under construction two other commercial types, the 32-ton *Tudor* airliner and another 60-ton ship as yet unnamed. The latter is reported to be a 125-passenger plane 110 feet long with a 150-foot wingspread, designed to cruise at 250 mph.

Other British manufacturers working on transport types are Vickers Armstrong, whose *Warwick* twin-engined ship is in use by the Royal Air Force, and the Short Co.



MOBILE FEEDER AIRLINE BUS STATION:

To slash the time feeder line planes must remain on the ground to discharge and take on passengers, Oliver L. Parks, president of Parks Air Transport, Inc., East St. Louis, Ill., has devised the combination bus unit shown in cutaway view above. The vehicle eliminates a downtown ticket office and several airport installations by combining the functions of taxicab, delivery truck, ticket sales counter, radio control tower, refreshment stand and rest room. In practice, the bus would drive along-side plane on the airport runway, eliminating taxiing time. Passengers handle their own baggage (31 pounds limit) and bus driver performs duties of airport traffic controller, quick repair man, ticket salesman, lunch counter clerk, mail and express handler and dispatcher.

NWA Negotiates For DC-4 Purchases

Company engineers also studying DC-6's and *Constellations* in post-war expansion plans, President Hunter tells stockholders.

In anticipation of post-war expansion, both domestic and international, Northwest Airlines is negotiating with Douglas Aircraft Co. for possible purchase of an unspecified number of DC-4 aircraft. Northwest's President Croil Hunter told company stockholders at a recent St. Paul, Minn., meeting that NWA engineers also are considering the DC-6 and *Constellation*.

Northwest is now operating 13 DC-3's, the equivalent of its pre-war fleet. Should the Civil Aeronautics Board approve the extension of the system from Minneapolis-St. Paul to New York, as company officials expect, the DC-3 fleet probably would not be able to handle the operation without considerable curtailment of services now offered in the Northwest. With the DC-4, the most likely post-war transport for first delivery, perhaps in 1945, Northwest may possibly complete a contract for several ships of this type.

► **Capital Adequate**—Northwest's present capital is considered adequate for opening the expected New York extension and for the

acquisition of some four-engined planes.

The line's net profit for the fiscal year ended June 30 was \$517,889 compared with \$300,092 for the 1942-43 period. Operating expenses rose 53 percent in the past year, chiefly because of a 43 percent increase in plane miles flown. The company operated during this period with a revenue passenger load factor of 85.17 percent and a performance factor of 96.73 percent.

► **Joint Research With Navy**—Hunter announced at the stockholder's meeting that Northwest was participating with the U. S. Navy in a program of experimentation for elimination of precipitation static, conducted in a half-million dollar hangar at Wold-Chamberlain Airport, Minneapolis. Military aircraft with static control equipment are now under construction according to Hunter.

At the meeting, Northwest's stockholders re-elected the Board of Directors, which in turn voted to retain all the present company officers.

► Changes in plans for Boston's Logan Airport, proposed trans-Atlantic air terminal, have reduced from four to three the number of sets of parallel runways which will be built. The runways will be 500 feet apart instead of 1000 as originally planned, in order to improve instrument landing characteristics of the field.



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HARRIS A-N standard shock mounts are made in two types, steel and dural (non-magnetic) and conform to the joint Army-Navy specifications AN-1-16 and drawing AN-8008.

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Made in the full range of load ratings in all standard sizes and types.

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of the Future



Adjacent to Lancaster Municipal Airport,
Lancaster, Pennsylvania—West Coast Branch,
Glendale, California

Colombia Air Cargo Potential is 13.1%

Country offers best prospects of any in South America, Commerce Dept. report shows.

The pattern of future air cargo trade with South America is taking form with release of the fourth and fifth of the Department of Commerce's studies of potential air shipments between the two continents. Offering the best prospects of any country yet surveyed is Colombia. Of a total trade valued at \$99,582,936 in 1939, 13.1 percent is potential air cargo.

A report on Venezuela, also recently issued, foresees 12.4 percent of that country's 1939 trade of \$85,003,164 as suitable for shipment. Previous estimates were 7.7 of trade of Brazil, 10.1 of Peru and 9.1 of Argentina.

▶ **Third in Trade With U. S.**—Colombia, nearest South American country to the U. S., has a trade with this country exceeded only by that of Brazil and Argentina. In addition, it possesses a well-organized internal air net and a nearly balanced trade, imports being approximately \$50,000,000 and



Additions Planned for Love Field Building: This is the present Administration Building at Love Field, Dallas. Plans call for addition of one-story and wings for commercial airline use, at a cost of \$750,000.

exports about \$48,000,000. But as with other countries studied, possible air shipments from the U. S. greatly exceed likely imports. It is predicted that commodities valued at \$10,755,901 could be flown to Colombia but only \$2,255,384 worth returned. Similar figures for Venezuela are \$10,479,074 and \$164,009.

The surveys indicate best possibilities for U. S. air exports are such as women's hosiery, tooth brushes, motion picture film, phonograph records. Air imports are likely to be, from Colombia, platinum grain and nuggets, panama hats, orchids and gold bullion; from Venezuela, orchids, tonka beans and reptile skins. The Venezuelan picture is darkened by the predominance of bananas, a low-value commodity, in its trade.

AVIATION SERVICE ENGINEER

Man with imagination and initiative who can delve into, plan, and advise relative to equipment design and other problems of sales and service at airports, large and small, is wanted by national petroleum organization.

Mechanical Engineer or equivalent in some engineering field requisite. Good appearance and personality needed for proper representation of company in contacts with top executives.

Knowledge of piping and pumping operations and refueling of planes by truck plus experience with Aviation Industry, preferably Airlines, Training Schools, or similar operations from port facilities standpoint, including design and installation desired. Civil Aviation or Military Ground Crew experience of value. Good future. Headquarters New York City.

In reply advise detail of experience, education, age, marital status, and salary expected. Include small snapshot (not returnable). Replies strictly confidential. Statement of availability required.

P-124, AVIATION NEWS
330 W. 42nd St., New York 18, N. Y.

Plan \$1,750,000 Port Outlay in Dallas

Million to be spent on new Redbird Field and \$750,000 on Love Field facilities.

Aviation facility improvements costing approximately \$1,750,000 are planned at Dallas, Tex., whose Love Field the Air Transport Command and commercial operations have made one of the busiest airports in the country.

Part of the money—about \$1,000,000,—will be spent on a new Redbird Airport for non-scheduled and private flying three miles southwest of Dallas. Eight hundred acres on the site already have been purchased. Plans call for two 3,000-foot lighted runways soon, with additions as needed.

▶ **\$750,000 for Love Field**—Another \$750,000 is to go toward improvement of the Love Field terminal setup. Administration Building space is to be tripled through addition of a third floor to the present \$250,000 structure, enlargement and remodeling of the control tower, and construction of

two two-story wings on each side of the building.

A new air mail, express and cargo station will stand near by and will be connected by tunnels with the main building. Later construction of a hotel is contemplated.

Non-Schedule Flight Hearing Date Set

Civil Aeronautics Board has announced that public hearings on all aspects of non-scheduled air transportation will probably begin Feb. 12, 1945, and has requested the fullest cooperation of all interested parties in preparation of detailed factual material.

The Board stressed its belief that the success of the investigation depends in large part on efforts of all parties to develop a comprehensive body of information relating to non-scheduled operations.

▶ **Exemption Order**—At present a general CAB exemption order waives the requirement of certificates for non-scheduled operators, but applications for authorization continue to swell the Board's docket.

CAB has given sufficient advance notice of the hearings in order that work on factual presentations may begin at once. All parties planning to participate have been requested to notify the Board by Dec. 10 as to the scope and extent of their presentation.

New Airway Outlet

A partial solution to one of the traffic problems at the Washington National Airport has been supplied by Civil Aeronautics Administrator T. P. Wright in an order providing an additional airway outlet for northbound traffic. The new airway segment, designated as Red Civil Airway No. 45, extends from the Washington radio range station to a point near An-

13 Left in Race

Out of 31 original applicants, 13 were left in the running this week for West Coast post-war feeder lines and new trunk routes. Dismissal applications of 12 applicants were granted before the San Francisco hearings opened. Four applications were dismissed before hearing for lack of exhibits. One applicant withdrew at the opening of the hearing.

Companies still active, and which may look for CAB decisions on their applications by early 1945, are: Coast Aviation Corp.; Los Angeles Airways, Inc.; Ryan School of Aeronautics; Southwest Airways; West Coast Airlines; Nevada Pacific Airlines; Roy F. Owen Co.; Albert L. Zimmerly; Northwest Airlines; Transcontinental & Western Air, Inc.; United Air Lines; Western Air Lines; and American Airlines.

napolis, Md., where it intersects the south leg of the Baltimore radio range.

Under certain conditions, particularly when it has been necessary to bring southbound traffic into the Washington airport at low altitudes, it has been impracticable to dispatch northbound traffic over the old Washington-Baltimore airway. The new arrangement provides an additional outlet permitting simultaneous northbound departures and southbound approaches. The order is effective Nov. 15.

CAB ACTION

- The Maritime Commission has petitioned the Civil Aeronautics Board for permission to intervene in the North Atlantic, South Atlantic and Pacific route proceedings. Air route applications filed by steamship operators are included in each case, but the Commission says it will not support any specific applicant. Rather, it will press its belief that permission to operate supplementary air services is a necessary adjunct to the post-war merchant marine.
- City of Reading, Pa., has asked permission to intervene in the U. S.-Canada case (Docket 609 et al.)
- American Export Airlines has applied to the Board for a mail rate determination covering its New York-Foynes operation.
- George S. Schwamm, doing business as the Petersburg Air Service, has been granted permission to intervene in a proceeding involving additional service in southeastern Alaska. Applicants are Ellis Air Transport and Ketchikan Air Service.
- CAB approved Eastern Air Lines' request for non-stop authorization between Evansville, Ind., and Chicago, Ill., on AM 10.
- An application filed by Charles R. Bentley, doing business as Southeast Airlines Feeder, has been dismissed by CAB at Bentley's request. The application had been consolidated with the Florida case.
- Board approved an agreement between PCA and Delta Air Corp. under terms of which PCA provides maintenance services for Delta's planes at Birmingham, Ala.
- Also approved was an agreement providing for air conditioning Delta's planes at Jackson, Miss., by Chicago and Southern.

- Board has ordered withheld from public disclosure an exhibit introduced by the Greater Miami Port Authority in the Latin American case (Docket 525 et al.). The exhibit contains secret information affecting the national defense.
- The application of Clarence W. Ludwig, formerly consolidated in the Florida case (Docket 489 et al.) has been dismissed by CAB for Ludwig's failure to exchange exhibits in the proceeding.
- The Board has set final dates for the South Atlantic and Pacific cases as follows: South Atlantic; exhibits Dec. 10; Hearing, Jan. 10. Pacific; exhibits, Jan. 12; hearing, Feb. 1.

TWA Claims Record In ATC Operations

Reports 137,238,263 passenger-miles flown over Atlantic to Britain and Africa during first nine months of 1944.

In its contract operations over the Atlantic to Great Britain and North Africa, Transcontinental & Western Air claims a record of 137,238,263 passenger-miles flown during the first nine months of 1944. According to TWA Vice President Otis F. Bryan, the line completed a total of 2,624 over-ocean flights for the Air Transport Command.

Operating C-54 *Skymasters*, the company rolled up 29,194,598 cargo ton-miles in the contract operation. During September the line carried more than 5,000 passengers. ▶ **Net Income Up**—For its domestic system, TWA's President Jack Frye announced that net earnings after taxes for the third quarter of 1944 were \$1,420,553, amounting to earnings of \$1.43 per share and up 63 percent over the net earnings for the same period in 1943, which totaled \$872,927, or \$.90 per share.

SHORTLINES

▶ Two new Venezuelan airports, one at San Antonio Tachira, near the Colombian border, and the other at Barrancas on the Orinoco River, were opened during October. Two others, one at Barcelona and a second at La Fria, are scheduled for opening within two or three months. ▶ British sources disclose that negotiations now under way with Russian authorities have as their object the early resumption of service between Great Britain, Stockholm and Helsinki by British Overseas Airways Corp. (BOAC). The route was operated by BOAC before the war. The line hopes to obtain permission to use Helsinki's modern airport at Malmoe, now a Red Air Force base. ▶ TWA reports that announcement of its application to CAB for international air routes has resulted in several hundred unsolicited applications for passage on the first over-ocean commercial flights. Many

business men are included in the group of would-be passengers, and TWA traffic men believe the interest indicates a large potential international travel market.

▶ Douglas Aircraft Co., Inc., asserts that Douglas *Skymasters* operated between San Francisco and Honolulu by the Naval Air Transport Service have been completing the regularly scheduled run in 12 hours, averaging 200 mph. The planes carry 8000 pounds of cargo on the trip. A six month study of fuel consumption discloses that the *Skymasters* use 177 gallons per hour—less than a gallon a mile.

▶ Delta Air Corp. reports that the carrier's system load factor for October was 90.7 percent. Planes returned to Delta by the Army made possible increases of 65 percent in passengers, 43 percent in mail, and 25 percent in express for October, 1944, over the same month last year.

Hughes-Frye Reports

Reports that TWA's Howard Hughes and Jack Frye were flying to or had arrived at Moscow, were creating quite a stir in the aviation industry last week. Timing of the reported visit, while the international aviation conference was in session in Chicago, and after Russia had withdrawn from the conference, lent additional interest. Three theories as to the purpose of the visit were discussed:

▶ As Keymen of TWA, which has been leading the domestic American Airlines in their effort to obtain international routes, Hughes and Frye might be seeking commitments on foreign routes, although it seemed unlikely they would attempt negotiations for their company in advance of U. S. State Department uni-lateral negotiations.

▶ More plausible was the theory that they were seeking additional markets for the high-speed, long-range Lockheed *Constellation* which TWA is sponsoring, and which would be well suited for traversing Russia's wide expanses.

▶ Still more credible in view of past history, was the story that they were arranging bases for a projected round-the-world *Constellation* flight, to break the three-day 19 hour 8 minute round-the-world record set by Hughes and four companions July 10-14, 1938.

Neither Hughes nor Frye could be reached in this country, and TWA representatives would not issue a flat denial of the reports, thereby adding further credence to the story.

Most Aviation Leaders Remain in Congress

THE DECISIVE ELECTION VICTORIES for Democrats in both House and Senate last week leave the leadership of Congress and the important committees dealing with aviation virtually in the same hands.

With Sen. Pat McCarran and Rep. Jennings Randolph re-elected, two of aviation's outstanding spokesmen appeared assured of their seats in the next Congress.

Rep. Clare Luce (Rep. Conn.), who chose aviation for her maiden speech in the House came out a victor, although trailing in early returns. She is expected to figure in the aviation picture during the coming session of Congress. Mrs. Luce's colleague from Connecticut, Rep. William J. Miller (R.), however was a loser. Miller, a member of the Woodrum Committee on Postwar Military Policy, has taken an active part in aviation matters in the present Congress and was behind the Nichols Resolution to establish a standing committee on aviation.

Sen. Mon C. Wallgren, chairman of the aviation subcommittee of the Senate committee investigating the war program (Truman Committee) and a member of the Senate Commerce Committee handling postwar international aviation policy, was elected Governor of Washington. Rep. Warren G. Magnuson, a high ranking member of the House Naval Affairs Committee who has been active in aviation matters in Congress, was elected to the Senate from the same state.

The major aviation casualty in the election was Rep. Melvin Maas (R. Minn.), ranking minority member of the House Naval Affairs Committee, and a nationally known marine air officer. Maas' defeat will move Rep. James Mott (R. Ore.) up to first place on the Republican side of naval affairs, with Rep. J. Sterling Cole (R. N. Y.), in second place.

Rep. Eugene Worley (D. Tex.), chairman of the subcommittee on overseas trade of the House Postwar Economic Policy Committee, expected to play an important part in the House in the formulation of postwar aviation policy, was re-elected, as were Chairman Schuyler Otis Bland (D. Va.) of the House Merchant Marine and Fisheries Committee and Rep. Richard Welch (R. Calif.), highest ranking Republican on the committee—two of the most aggressive champions of the steamship point of view on overseas aviation.

Two old-timers, Chairman Carl Vinson (D. Ga.) of the House Naval Affairs Committee and Chairman Clifton Woodrum of the House Postwar Military Policy Committee, will continue to head up their groups, expected to make decisions vital to aviation in the next Congress. Rep. Lyndon Johnson (D. Tex.), chairman of the aviation subcommittee of naval affairs will move up to third place on the majority side of the committee as a result of Magnuson's candidacy for the Senate. Rep. Patrick Drewey (D. Va.) will continue in second position.

The top stratum of the majority side of House Interstate and Foreign Commerce Committee will be the same next year, with Chairman Clarence F. Lea (D. Calif.), Rep. Robert Crosser (D. Ohio),

Rep. Alfred Bulwinkle (D. N. C.), and Rep. Virgil Chapman (D. Ky.) and Rep. Lyle Boren (D. Okla.), re-elected. The fifth ranking majority member of the committee, Rep. Martin J. Kennedy (D. N. Y.), a signer of the minority report against the Lea Bill, was defeated in the primaries. Other Democrats on the committee re-elected were Lindley Beckworth of Texas, Thomas D'Alesandro, Jr., of Maryland, Percy Priest of Tennessee, Oren Harris of Arkansas, and Richard Harless of Arizona.

Reps. Charles Wolverton, B. Carroll Reece and Pehr Holmes, Republican leaders on interstate and foreign commerce and sponsors of the revolt against the Lea Bill, were all re-elected. Rep. Clarence J. Brown (Ohio), and Rep. Charles Halleck (Indiana), two other Republicans on the committee, were also successful.

Rep. Carl Hinshaw (R. Calif.), a member of Interstate and Foreign Commerce, who pushed the Nichols Resolution for a standing aviation committee but later gave his support to the Lea Bill, was re-elected.

Although Chairman Andrew May (D.) of the House Military Affairs Committee was leading in his Kentucky race for re-election late last week, his margin was so small that question was being raised on the possibility of the committee's chairmanship going to Rep. Ewing Thomason (D. Tex.), second in line, in the next Congress. The defeat of Rep. John M. Costello (D. Cal.) in the primary and retirement of Rep. Matthew Merritt (D. N. Y.), because of redistricting in New York, will move Rep. Overton Brooks (D. La.) up to third ranking place on the majority side of military affairs and make the position of chairman of the aviation subcommittee available to him. Fourth ranking member of the committee next year, Rep. John Sparkman (D. Ala.), will fall heir to the aviation subcommittee chairmanship if it is passed over by Brooks.

On the Senate side of Capitol Hill, the only two members of the Senate Commerce Committee running for re-election in the final race, Sen. Guy Cordon (R. Ore.) and Sen. John H. Overton (D. La.), were victors, with Overton moving up to second place on the majority side of the committee as a result of the defeat in the primaries of Sen. Hattie Caraway of Arkansas and Bennett C. Clark of Missouri.

Chairmanship of the Senate Military Affairs Committee will go next year to Utah's Elbert Thomas, a successful candidate for re-election, as a result of the retirement of Sen. Robert R. Reynolds (D. N. C.) who did not run this year. Sheridan Downey (D. Calif.), also of Senate Military Affairs, was re-elected.

On Senate Naval Affairs Committee, Sen. Richard Russell of Georgia and Sen. Harry Flood Byrd of Virginia will step up to third and fourth ranking position, respectively, because of the defeat of Ellison Smith of South Carolina in the primary and the resignation of Homer Bone (D. Wash.) from the Senate. Sen. Millard Tydings (D. Md.), who ranks next to Chairman David I. Walsh (D. Mass.) on the committee won easily.

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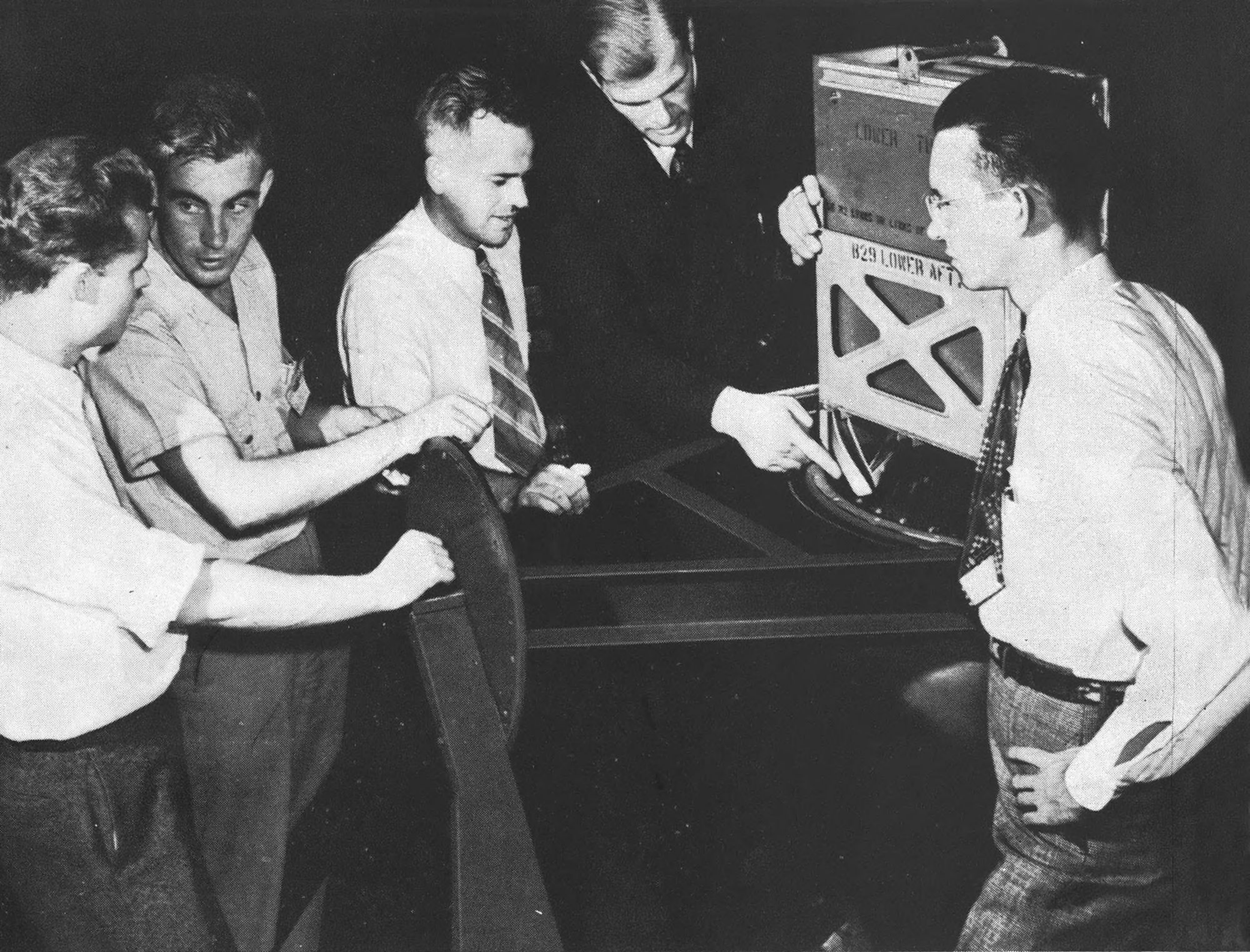
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The B-29 program has completely occupied the time of thousands of G-E people for well over a year. For the Superfortress, thousands of special motors have been built, new equipment has been developed—much of it based upon reports from G-E engineers like these who were, and are, at bases throughout the world. G-E men go where they're needed. They are giving outstanding service to members of the Armed Forces on every battlefield. *General Electric Company, Schenectady 5, N. Y.*



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