AVIOLO BUSS MOGRAW-HILL PUBLISHING COMPANY, INC. MOGRAW-HILL PUBLISHING COMPANY, INC.



First Pictures of Britain's Newest Airliner: Great Britain has lifted some of the secrecy surrounding its first new airliner, the Avro York, which may compete with U. S. transports after the war. One of the first models has reached Canada. It has four Rolls Royce Merlin engines, wing span of 102 ft., length of 78 ft., and can carry 50 passengers on short hops. It may be built in the Dominion.

Gorrell Sees Rails' Hand in Lea Report

United Fruit Asks Caribbean Air Routes

Steamship giant cites its enterprise in improving each new type of transport; seeks planes to replace lost ships...........Page 38

Luftwaffe Nosedive Seen Likely

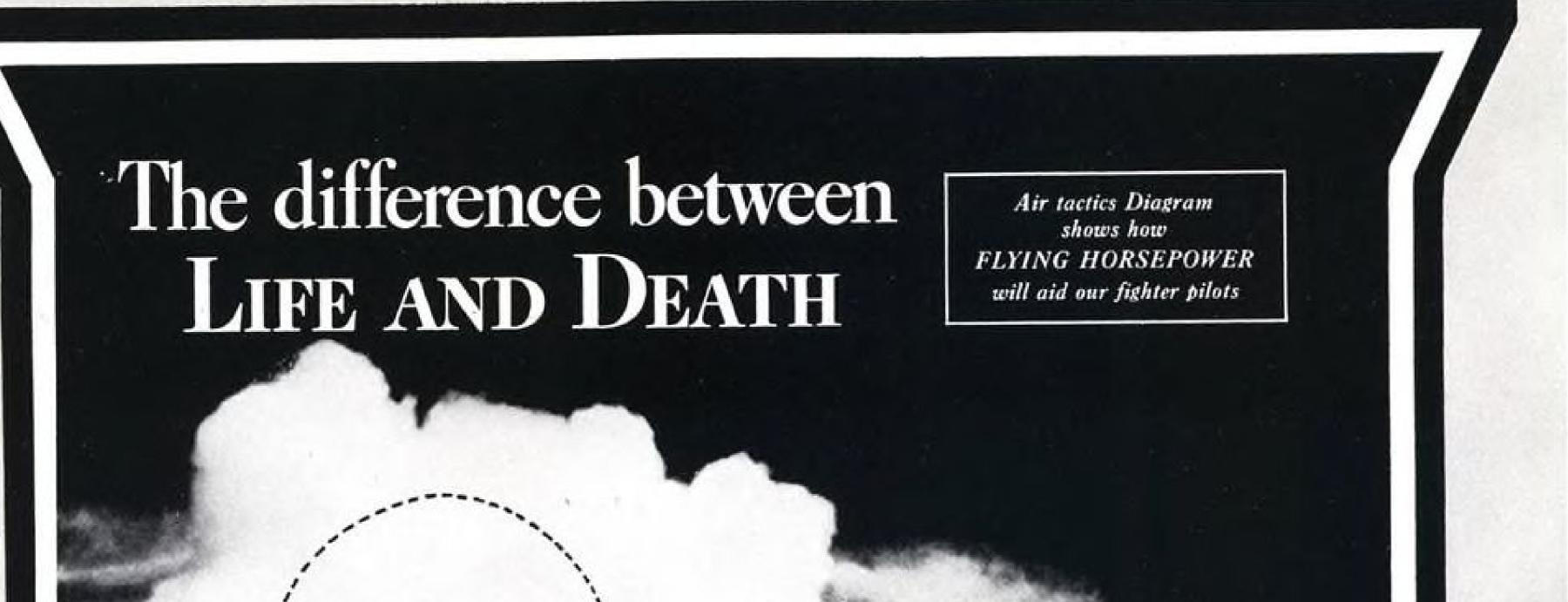
Military commentator says raids crippled German single engine fighter output; sees blows on twin-engine plants......Page 16

Converted War Transports Could Cut Costs

Air Service Command Meets Vast Needs

Conference of officers from all battlefronts reports enormous requirements are being met by ASC......Page 14

Overseas Travel To Exceed Cargo Revenue



Pup there, three miles above the Pacific — fighting an opponent who moves 500 feet a second...

He's a long way from the U.S.A. and white-coated Socony-Vacuum scientists—yet, those scientists have produced a fuel which will give him a great advantage in battle!

Socony-Vacuum's new TCC Process and the sensational new Bead Catalyst are the revolutionary refining developments which will make this super power possible—which will help many an American boy zoom up at an angle his enemy can't follow and come back spitting sudden death.

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Coming—in Aero Mobilgas House House Dozuett New Super Power for U. S. Planes

THE AVIATION NEWS

Washington Observer

BARUCH ASSIGNMENT—The appointment of Bernard M. Baruch to find an answer to the tough question of shifting industry from war to peacetime production has been generally approved in Washington-his views commanding great respect. There are those, however, who see in the assignment a move by the administration to steal indirectly the play from Congress on reconversion. A Baruch report on the problem probably would greatly influence any legislation on the matter and it is likely the report will reflect some high administration views. Thus, without asking for it directly, these views might well dominate any legislation on the matter. A strong report is expected from Baruch on reconversion, contract termination and related items, and later there may be another on disposal of surplus military stock such as aircraft and government-owned plants.

TO CLEAR THE AIR—With past Baruch reports as a yardstick, whatever he reports on the reconversion situation will serve a most useful purpose in clearing the atmosphere at a time when everybody is trying to crowd into the postwar planning picture. There are no fewer than five congressional committees concerning themselves with contract termination and similar problems—directly, and other groups indirectly. On the basis of current developments it appears that the committee to watch is the one headed by Senator George, of Georgia. It appears likely that many of the proposals from other groups may wind up there eventually.

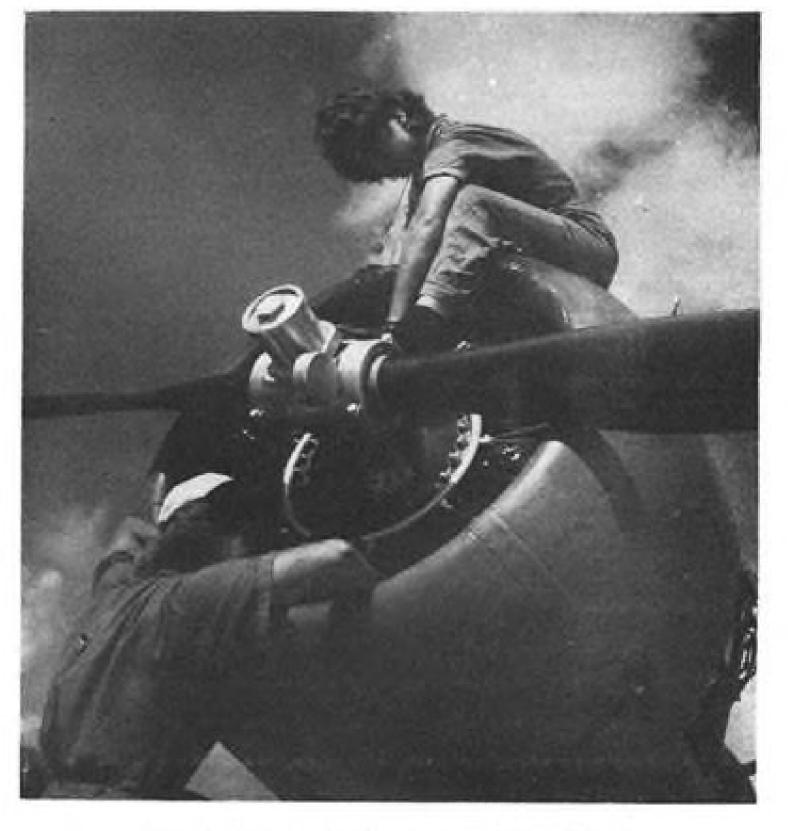
POSTWAR POTENTATE—Speaking of reconversion, it is generally rumored around Washington that War Production Board Chairman Donald M. Nelson would not be adverse to heading up whatever agency is set up for the purpose. His background with WPB should be valuable. The War Production Board is now running smoothly with most of the major problems licked and Nelson is said to be looking around for new worlds to conquer.

WILSON AND WPB—Rumors are rife again that Charles E. Wilson, WPB executive vice-chairman, is again getting the urge to return to General Electric. So far as his WPB assignment is concerned, Wilson has done a magnificent job. Scheduling, a tangled mess when Wilson took over, is now running smoothly. There is an easing of controlled materials and the trouble-shooting job Wilson did to begin with has developed into more or less an administra-

tive spot. There have been indications from time to time that Wilson feels he has done his Washington stint and would like to go home. The White House is reluctant to lose a man of Wilson's caliber and Wilson would not leave so long as there was a job to be done.

CONGRESSIONAL DOGHOUSE—There are increasing signs that the Army and Navy are edging toward the Congressional dog house, with many members indicating disapproval of procurement activities by the services, vast purchases of items subsequently not needed in such quantities and consequent surpluses and cutbacks which have developed in some categories. Some members of Congress even go so far as to hint that the constant warnings of the military of a long-hard war are partly inspired, at least, to cover up surpluses. Congressional resentment applies, too, to the manpower situation as witness the recent situation at Dallas where Army procurement agents took a going-over from some senators for their manpower requests.

LABOR TURNOVER—The increase of labor turnover in war and essential civilian industry



Feminine aviation metalsmiths at Jacksonville Naval Air Station.

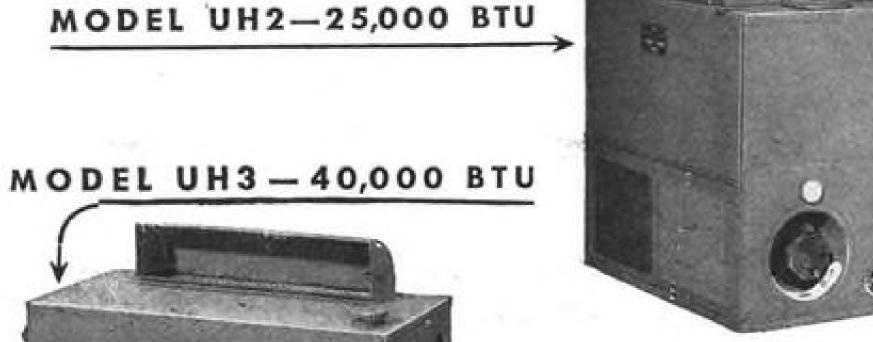
has reached a point where it is seriously impeding the war program, despite the attention given to the problem by management and gov-



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AVIATION NEWS

November 15, 1943

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Washington Observer

ernment alike. Officials say privately that this phase of the manpower situation is causing grave concern. While the War Manpower Commission has made some progress in combating undesirable turnover, the subject is one to which enlightened management can probably contribute most.

* * *

BID TO BUSINESS?—Add to increasing signs of government's revised attitude toward businessmen the new War Advisory Council of business men called to the White House for a discussion of a long list of specific problems including, presumably, such things as war contracts and terminations. With frank questions and answers on both sides, such discussions could be of great value. It might be well to watch the progress of these sessions as an indication of administration trend and policy in the difficult reconversion days to come.

* * *

ELECTIONS GIVE VOICE TO MUTES—The recent election returns which spelled Republican victories has caused some Republican members of Congress who have been discreetly silent on military and other expenditures to raise their voices in protest and certainly some conservative Democrats already are on the howl on this subject. The demand is strictly for a reduction in expenditures rather than an increase in taxes and there will be much looking into Army and Navy appropriations already authorized before any huge blanket sums are voted in addition.

* * *

SCRAP MACHINE TOOLS—The transaction whereby the Army in Detroit sold machine tools originally valued at about \$1,400,000 as scrap for \$76,000 has not been forgotten on Capitol Hill, although little has been said about it of late. You can look for some action in this case from Senator Homer Ferguson, of Michigan, a Truman Committee member who is doing a little quiet investigating on his own. The Army is said to be quietly repossessing an undisclosed but sizable portion of the tools, but this has not deterred Ferguson. He probably will have a statement shortly.

FOREIGN BASES AGAIN—The trip of House Military Affairs Committee members to the Caribbean area on an inspection trip is very likely to be extended to South America and possibly even to Africa with the result that we probably will hear a great deal more about our foreign air bases before we hear any less. The value of these bases to postwar aviation is just beginning to be realized by non-aviation Members of Congress and the convert is always the most vehement, so there should be plenty of action.

A CRISIS PASSES-A few months ago no discussion of aircraft production was complete without yowls of complaint because of the shortage of aluminum. And aluminum, which was then a prime headache among aircraft builders, is now marked off that list, with supplies for the fourth quarter totaling about 870,-000,000 lbs., or nearly 100,000,000 lbs. above the needs of the war program. It is understood that WPB actually had to wrestle with an oversupply problem some time ago when aluminum scrap was far in excess of requirements. It has not been generally publicized, but some applications for civilian use are now being studied. Stumbling block, of course, would be manpower, none of which can be diverted from war work.

* * *

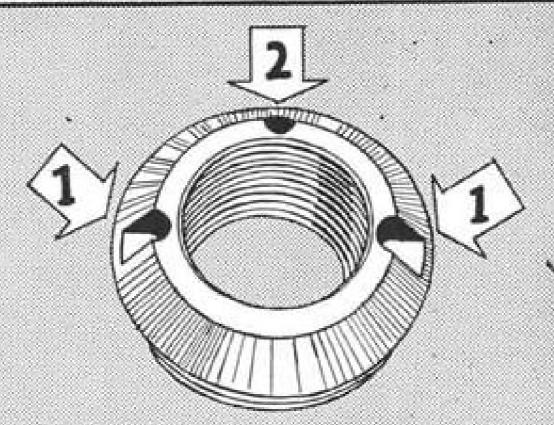
WCAW AND THE AWPC-Top flight aviation writers on the West Coast, seeking improved relations with heads of the aircraft industry and greater access to background material on aviation developments for better informed reporting and interpretation of the industry's affairs, have formed the West Coast Aviation Writers. The result: Airframe president of the Aircraft War Production Council invited WCAW to a meeting. Further result: A better understanding of mutual problems.

WMC DENIES DIVORCE—High War Manpower officials are privately confident that pending legislation to divorce Selective Service from the War Manpower Commission will not be approved. Their view is contrary to that of some Washington observers who believe Congress generally would like to have Maj. Gen. Lewis B. Hershey run the draft show. Behind this, of course, is the maneuvering which placed Selective Service under WMC control through an executive order, after Selective Service was created as a separate agency.

CENTRAL AGENCY SOUGHT—The increasing importance of immediate attention to settlement of war contracts has resulted in calls from Capitol Hill for a central agency to kandle this problem. Some Congressmen go so far as to say legislation creating such an agency should be in effect before Christmas. This seems unlikely, however, in view of the legislative program on hand and the desire of Congress to get away early next month for a Christmas holiday.

BEARING DELIVERIES NOT FROZEN—Reports circulating to the effect that anti-friction bearing deliveries have been frozen became so prevalent that the War Production Board issued a formal denial. The Tools Division of WPB has, however, recently taken steps to review the anti-friction bearing requirements of about 30 of the larger bearing consumers.

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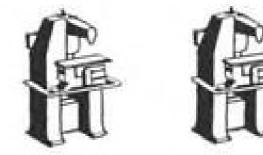
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FIRST OPERATION

3 STANDARD MACHINES







2 STANDARD MACHINES

SECOND OPERATION



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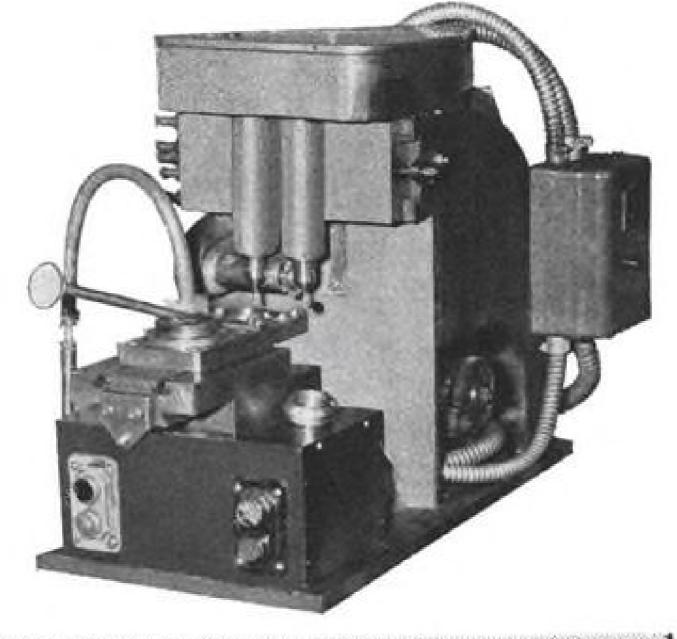
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VOLUME 1 · NUMBER 16



NOVEMBER 15, 1943

Aircraft Industry's Deliveries Meet Schedules for Vital Types

October production exceeds goals in various models, including heavy bombers, and some officials believe total rate of 9,000 a month will be reached by Jan. 1.

By SCOTT HERSHEY

The record-breaking October airplane unit production, important in itself, was more significant in the fact that in most categories, chiefly the most-wanted plane types, the output was close to and in some cases above schedule. The goal for heavy bombers was attained.

Two factors are reflected in this accomplishment of the aircraft industry, the upward trend of production on one hand and the Government's readjustments of schedules toward more realistic figures on the other. The October plane output of 8,363 represented an important step forward toward the peak production rate of 10,000 airplanes monthly and prompted speculation that output of 9,000 planes a month will be reached before year's end.

Not All Are Combat Ships-It is sometimes overlooked that all planes in the total are not combat types, that transports and trainers are included, although trainer production proportionately has been reduced. It includes, too, light liaison planes and other types.

As T. P. Wright, Director of the Aircraft Resources Control Office, pointed out in an interview with AVIATION NEWS some weeks ago, gliders are not included in the total announced figures.

▶ Glider Gains Seen—Glider production was reported up in October along with powered planes and if these figures are counted it is likely that total aircraft for the month would be very close to 9,000.

Important, too, was the statement of WPB Chairman Donald Nelson that in airframe weight the preliminary figures show a gain of nine percent over September. This is the largest output to date of heavy bombers in a single month, mostly Boeing Flying Fortresses and Con-

solidated Liberators, which Nelson's report said "made up the large bulk of the heavy bombers produced."

This implied that the recordbreaking output included a number of the new Boeing superbombers

One More Step

Another important step in evolutionary process toward a unified Air Force is seen by Washington aviation observers in a letter by Gen. Arnold to all AAF personnel indicating that the various "arms and services" will be converted to the Air Corps and brought into functionalized AAF organizations.

"The Chief of Staff has authorized by direction of the Secretary of War the elimination of arms and service branch distinctions within the Army Air Forces," General Arnold says.

"This authorization marks a most important milestone for the Army Air Forces and was given in order that we can build a completely integrated, efficiently functioning. harder hitting team—a team wherein the members have but one loyalty, one purpose, one distinguishing insignia.

"You are all members of this team, whether you pilot the planes, repair the guns, build the airfields, maintain the radios, drive the trucks, handle the supplies, or care for the sick and wounded. Your teamwork in the past has been the basic reason for our outstanding success against the enemy. Your efforts toward greater teamwork in the future will hasten the enemy's defeat and 'unconditional surrender."

which the Army has now officially identified as the B-29.

Nelson said "we are going to produce more and more Fortresses and Liberators as well as large numbers of super-bombers."

Many Fighters—Of the 8,363 total for October, production experts estimate that heavy bomber output is more than 10 percent of the total, with fighters one fourth of the total.

Nelson's report said that the figures indicate outstanding achievement in fighter output and that one top-preference fighter, delayed by design changes, showed an extra large gain for the month. Industry production men said the reference probably was to Lockheed, given a top labor priority on the West Coast, or to Bell in Buffalo, now the largest unit producer of fighters. Parts Shortage Seen—Greatest threats to a continuance of the record-breaking production through next year are manpower and some materials with ball bearings most critical at the moment. The raw material problem is least pressing currently. Plane and engine parts will be under manpower as obstacles to further production increases.

Inland Sale Price

Western paid \$363,688 or \$2.65 a share for 83 percent of stock, CAB reveals.

All parties concerned with the absorption of Inland Air Lines by Western Air Lines having agreed at pre-hearing conferences before the Civil Aeronautics Board that the major issue in the proceeding was the purchase price, the board ordered this price revealed.

Western Air Lines has agreed to pay \$363,688.65 or \$2.65 per share for 137,241 shares, or 83 percent of the outstanding stock of Inland. Present holders of this stock, all officers of Inland, are Richard Leferink, 87,984 shares; Marvin W. Landes, 38,216; G. G. Brooder, 5,051; and Dr. Allan McClellan, 5,990.

▶ Contingencies — Various contingencies, pending final approval of CAB, are set forth in the sales agreement, which further states that

shall be determined and settled prior to Dec. 14, 1943. Western also plans, according to the agreement, to offer to purchase holdings from all other stockholders of Inland on the same basis, as soon as practicable after the board's final approval.

Inland Air Lines' report, attached to the sales agreement, revealed profit for seven months ended July 31, 1943, of \$18,080.

Coast Plants Raise Manpower Sights

Airframe companies seek to meet recently increased Army schedules.

By SCHOLER BANGS

West coast airframe factories are raising their sights on manpower needs, anticipating upward revision of Army production schedules.

Their new goal—the eight major companies in West Coast Aircraft War Production Council-is a net increase of 20,000 direct labor workers to bring plants to the edge of capacity production.

weeks ago, meeting current military schedules for the first time in months, they estimated a need for a net gain of 13,000 workers. Em-

PLANE FUEL FROM COAL:

phasis on need for production line "direct workers" will give a new tone to western manpower recruit-

AWPC admits a surplus of "indirect labor" and in a Los Angeles Advertising Club speech T. C. Coleman, vice-president of Northrop Aircraft, Inc., said "It is becoming more difficult to recruit the proper number of direct, productive workers. Most of the applicants at aircraft plants want to be executives, clerks or expediters. America still has the white collar complex." Fifty-hour Week-Western reac-

by Mr. Wilson to do so." Company officials have no idea what production gains, if any, will be shown by the move. The action returns Northrop to its pre-Pearl Harbor work week, which was changed to three-shift production by Army request immediately follow-

ing declaration of war.

tion to Charles E. Wilson's appeal

for a ten-hour, five-day week con-

tinues to be one of opposition with

a single exception. Northrop at

Hawthorne swung all production de-

partments into the ten-hour day on

Nov. 10 "because we had been asked

Post-War Gains Will Contribute Bulk of Air Cargo, Burden Tells SAE

Aviation aide to commerce secretary declares future economic developments of country will determine extent of air freight industry's growth.

Current discussions on the future of air cargo frequently overlook the fact that our experience with air limited and, as pointed out by William A. M. Burden, special aviation assistant to the Secretary of Commerce, we shall have to grope our

market.

Burden says the great objective of well under way.

before it."

means different persons and companies are going to put emphasis on different aspects of the task of developing air cargo. It is essential, in Burden's opinion, that "we do not hesitate to try each and every available idea. It is equally essential that as many as possible should be tried out simultaneously."

Minimizes Post-War Drop — He said we are apt to forget the effect on air transport of the general course of business activity and economic well-being. He added that "of course, we may come down from wartime production heights, but I do not believe we'll go down very far or stay down very long."

way forward in developing air cargo

Direct Workers Needed — Two cargo on a really commercial scale is air cargo is not to be measured in terms of prewar tonnage at prewar rates, but rather its greatest market will be found to lie in the traffic born of future developments in our economy, many of which are now Competition — "But to get this

future traffic, air cargo must be in a position to bid for it," Burden told the Society of Automotive Engineers Meeting in Chicago. "Competition for existing traffic provides the market mechanism by which air cargo can prove itself as a safe, swift, flexible, and economical means of transport for an increasing number of shippers with goods of all kinds to sell. Once proved on a really large scale, a very great future lies

Burden said different opinions

Burden emphasized that any calculations on air cargo must be based on the assumption of much lower air cargo rates than have prevailed in the past and that, clearly, we cannot hope for any large volume of air cargo so long as transportation rates remain high.

Air Ton-Mile Rate-"I think we can hope to achieve a rate to the consumer of 10 to 20 cents per air ton-mile in the not too distant future—at least we ought to set that as a primary objective for the early post-war years."

While conceding that the consequences of a changing world on air cargo are not exactly calculable, Burden is convinced there will be more air cargo business resulting from these changes than from shifting the high-rate existing surface cargo into the air.

Oklahoma Conference Charts Air Needs

Present and post-war requirements outlined at First National Clinic.

Leaders in the manufacturing, operating and servicing organizations of the aviation industry, together with public officials carrying responsibilities in these fields, pooled their background and experience in an attack on the problem of shaping a national pattern for domestic aviation at a meeting in Oklahoma City last week.

NAA Is Sponsor—This First National Clinic of Domestic Aviation Planning was held under the auspices of the National Aeronautic Association and had the endorsement of President Roosevelt, William A. M. Burden, Special Aviation Assistant to the Secretary of Commerce; L. Welch Pogue, Chairman of the Civil Aeronautics Board, and other industry leaders.

Discussed were such subjects as the domestic air pattern for tomorrow, development of air policy for aviation facilities, the place of the municipality in the development program, the analysis of air cargo expectancy, the primary transport, personal aircraft, long range aircraft, fixed base operation, trade schools and aviation education, the helicopter and various related subjects.

▶ Post War Surplus Studied—Disby the government and disposition of war aviation plants were discussed along with contract terminations.

Possible development in local and



METAL REPAIR MATS INSTALLED IN THE ALEUTIANS:

Originally developed for landing strips, steel mats are now also in use in the Pacific war zones at air bases. Here Navy men are loading a bomb on the wing of a Vought-Sikorsky Kingfisher somewhere in the Aleutians. At left is a Catalina. Kingfishers fly inshore patrols in this area

feeder-line services and the question of how far the government will go in promotion and regulation of commercial and private flying also were discussed at length. O. M. Mosier, vice-president of American Airlines, was program chairman and Steadham Acker, manager of Municipal Airport at Birmingham, Ala., was program director.

Asks New Oil Engine

Canadian air freight official urges more efficient light transports.

In the nation which has developed the gasoline engine to amazing efficiency, a former Canadian float plane transport operator last week urged the design and development of "a new type of power plant" for aircraft which would burn oil.

Gasoline Type Too Costly—"The present day gasoline type engine, although effective for war work, is entirely too expensive for peacetime operations," said W. L. Brintnell, of Aircraft Repair, Ltd., before the SAE air cargo meeting.

"This new engine should burn position of surplus aircraft owned fuel oil and I believe if properly designed the cost can be brought down factors. to \$2 per pound per horsepower basis."

> Need Small Transports—He urged development of hundreds of more

efficient single-engine transports which will operate after the war to the world's hinterlands. These planes could use wheels, pontoons, or skis; would be designed for minimum maintenance, having good take-off and landing characteristics, with large doors and strong floors. They should fly at 120 degrees above zero or 70 degrees below without radical adjustments.

Can Land on Streams—In many undeveloped countries lakes and rivers will enable aircraft to maintain operations until airports are built.

Sees Helicopter As Mail Carrier

First practical peacetime use of helicopters will be in carrying air mail, Waldo Waterman, engineer for Stout Research Laboratories, Detroit, told the Society of Automotive Engineers' air cargo meeting last week.

Waterman and Richard Prewitt, chief engineer of Kellett Autogiro Corp., Philadelphia, discussed helicopter design trends and retarding

Limited Field—The helicopter's limited field for the private owner is due to its difficulty in flying. But it may serve as a passenger trans-

C. Hyde, wing commander of the District of Columbia-Maryland Civil Air Patrol, with Rep. Jennings Randolph of West Virginia (front, kneeling), as passenger and part-time pilot. Some members of the Senate Public Lands Committee and House Mines and Mining Committee met the plane.

This Fairchild 24 is believed to be the first airplane in the United States

to make a sustained flight powered by gasoline derived from coal. The

plane was piloted from Morgantown, W. Va., to Washington by Maj. Arthur

port from downtown areas to airports, in fleets of small craft rather than large multi-passenger airbuses.

Enlarging single rotor models appears difficult and there is still little knowledge of characteristics of double-rotor craft such as the Platt-LePage, he said. The PV-1, recently demonstrated in Washington, he described as one of the "most interesting and successful early developments," although Bell Aircraft Corp. has a helicopter which is doing early flight testing.

Northrop Dividend

Following an out - of - the woods report to stockholders in October, Northrop Aircraft, Inc., voted its first dividend Nov. 9., 40 cents, payable Dec. 10 on stock of record Nov. 15, covering 399,115 outstanding shares. Northrop stock was first offered in July, 1939, at \$6 per share.

Converted Transports Could Cut Cargo Costs, Boeing Engineer Says

Tells SAE group that military carriers, suitably modified, would permit lower air freight rates during transition to new designs.

In the midst of thousands of speculative words regarding new, specially designed cargo planes of the future, an outstanding engineer comes forward with the conclusion that not only can military transport equipment be converted to commercial use, but that air cargo rates can be reduced from present levels by the use of such equipment.

E. C. Wells, chief engineer, Boeing Aircraft, holds that present cargo rates can be reduced by the use of converted transport equipment, and agrees that still further gains are possible with aircraft especially designed for the purpose.

Says Bombers Could Be Modified -He goes even further and, contrary to popular aviation opinion, contends that the Consolidated Liberator and Boeing Flying Fortress bombers could be converted to commercial use by somewhat extensive modification.

Wells suggests that for this type of plane a completely new fuselage designed for commercial use would be necessary if passengers are to be carried, and even if cargo only is carried additional flooring and doors would have to be provided. Wells added that cutouts for military equipment, such as turrets, require heavy weight penalties that might be reduced by suitable modifications.

▶ Superchargers Useful—American heavy bombers, he noted, are equipped at the present time with turbo superchargers which would not prevent their use for commercial operations but would in general reduce payloads for short range, low altitude flights.

Wells expressed his views in a discussion before the Air Cargo En-

10

gineering meeting sponsored by the Chicago section of the Society of Automotive Engineers.

Convertibles Could Compete—"A modern airplane, specifically designed for economical operation and incorporating designed features and equipment dictated by the most upto-date practice, can compete on a cost basis with the reconverted transports," Wells said, "even when all depreciation expenses are eliminated, the cost of conversion is neglected, and no structural limitations are considered for the reconverted transports."

Wells said that with competition from new equipment, a certainty within one or two years after cessation of hostilities, "it is apparent that the airlines must establish with care their policies with regard to purchase, conversion, and depreciation of 'transition' type aircraft."

He noted that the political and military factors to be considered in the use of military equipment may outweigh the importance of the economies of their use.

Conversions Are Only Answer-"The transition of military aircraft production to peacetime production will require time, and the converted airplane is the only solution if additional equipment is to be made available to the operators during this period," he said.

Wells believes that the problem of adapting military combat types and strictly military cargo types to commercial use will be considerably greater than the problem of re-converting the former commercial the three ships. The original detransports.

Combat Types More Difficult— "The military types tend to have relatively high wing loadings and

compliance with the stalling speed requirements will affect the allowable operating weight for these types to a considerable degree greater than for the re-converted transport types."

Wells said probably the most useful type of transition airplane is the transport type, originally designed for commercial use and converted for military operations. This type of airplane, when made available to the airlines' use, could be reconverted for such use with relatively minor changes.

Discussing the cargo carrier type [such as the C-87] designed specifically for military cargo, Wells said this type can be converted for commercial use but that the converted model would probably be a high performance machine which would not meet the requirements of the Civil Air Regulations and would therefore not be comparable to a re-converted commercial transport.

Hughes Squelches Industry Rumors

Remains enthusiastic about cargo project, denies delays or friction with Kaiser.

By MARY PAULINE PERRY

Howard Hughes, top flight aeronautical engineer and designer, in an interview with AVIATION NEWS envisioned a great future for aviation, was plainly enthusiastic about the Kaiser-Hughes giant cargo plane program, and discussed the purchase of TACA by Transcontinental and Western Air, Inc.

Enthusiastic About Future-"The future of aviation is certainly beyond any estimates that have been made to date; the possibilities are infinite," he said.

Although he stated he is not now working on any postwar plane designs, once the war jobs he is doing are finished, it is expected in aviation circles that he will enter the commercial aircraft field. He is head of Hughes Aircraft Co., and a partner in the Kaiser-Hughes cargo plane program.

The Kaiser - Hughes program, which involves the building of three giant cargo ships, was started almost a year ago.

No Major Cargo Changes—Hughes made it clear that there have been no changes in design or material of sign, brought to Washington by Henry Kaiser, was a Hughes design and only such alterations as customarily become necessary in construction of a new design have been made, he claimed.

He declined to estimate when the first cargo ship would be ready for flight. However, Henry Kaiser said later that he had given WPB guarantees that the first of the planes would fly next year.

Kaiser-Hughes Rumors—A query on rumors that Hughes wanted to withdraw from his contract with Kaiser elicited Hughes' reply that it was not so. He stated he and Kaiser have never had an argument or misunderstanding of any kind.

In addition to his holdings in the aircraft construction field, Hughes owns about 47 percent of the stock of TWA. Although TWA recently bought a minority interest in the South American TACA airline, he said that at this time TWA planned no further expansion of operations outside continental United States. He said he owns stock in no other airlines.

To Retain TACA Management— Hughes further stated that there is no intended change in the management of TACA. He remarked that no better man could be in charge that Lowell Yerex, who has built the airline up to its present size from a very meager beginning.

During the interview, Hughes said that if he did go into the commercial aircraft field after the war he had no plans to build any form of helicopter.

Nelson Tour May Revise Plane Program

Mission of WPB chief described partly at press conference in Washington.

Important revisions in our war production program are expected from the recent tour made by WPB Chairman Donald Nelson to Britain, Russia and various combat areas.

While Nelson in a press conference declined to disclose the nature of the changes there were indications that they will center around aircraft, with the emphasis as always on accelerated output.

Praises ASC and ATC — Nelson said he was particularly impressed with the work of the Air Service Command which he said was repairing 80 percent of the planes within 24 hours, 10 percent within 48 hours, and 10 percent more are being moved to more permanent installations to be rebuilt and returned to the battlefronts. He also praised world-wide route system.

In Russan aircraft factories raw

material flows into one end of a plant and a finished airplane emerges from the other end with every part, even engines, built entirely under one roof, he said.

No Warehouses — The Russian method of scheduling material and component parts is also unique. He saw no warehouses and no stockpile of materials or parts in the plants.

The Russians are building planes of their own design except for transports. The transport most frequently seen in Russia is a version of the Douglas DC-3.

Airacobra Most Popular — Bell's P-39 Airacobra is still the most popular American product among the Reds.

Rumor New Job For Nelson—He conceded he had been on a special mission for the President and many Washington observers think he is being groomed for the reconversion job for the United Nations.

While in England Nelson visited fighter, medium bomber, heavy bomber commands, Air Headquarters and the Air Service Command. "I think we are now doing a good job of aircraft production," he said. He gained new confidence in American production when he saw what battle damage our planes could withstand. The British have learned many of the fundamental principles of mass production and he was favorably impressed with the output.

Ask Private Ownership

N. Y. State Chamber of Commerce urges competing world airlines.

Four recommendations for government action to protect postwar air transportation development have been made by the New York State Chamber of Commerce in a resolution unanimously adopted.

Sponsored by the chamber's committee on aviation, they proposed that the government: (1) go on record in support of principles of private ownership and operation of airlines, domestically and internationally, subject to government regulation; (2) encourage a world-wide commercial air transportation free of monopolies and "unbridled competition," capable of promoting domestic and foreign commerce and maintaining military value; (3) aid in arrangement for suitable civil and commercial airports and facilities at home and abroad, and (4) adopt a policy according foreign lines only those privileges granted by their CIO. reciprocal international agreements. Inc., Los Angeles, to provide equip-

WLB Airframe Panel Holds First Meeting

Summary of week's activities in U. S. Bureaus and War Agencies.

The airframe panel of the National War Labor Board held its first meeting in New York last week. It is a three-man panel, with jurisdiction over wage and salary disputes and also over non-wage issues when such are part of a wage dispute.

Thomas L. Norton, professor of economics at the University of Buffalo, is chairman. Garry Cotton, of Los Angeles, grand lodge representative of the International Assn. of Machinists-AFL, will sit on cases involving his union. In UAW-CIO cases, Ed Hall of Cleveland, international representative of UAW, will be the labor member. Alternate industry member is John Meade, labor relations representative of Bell Aircraft, Buffalo.

▶ Withdrawal — NWLB announced that Washington and Oregon had been withdrawn from the jurisdiction of the airframe panel and returned to the 12th regional board

▶ Bonus of \$4 an hour for a small group of flight-test inspectors at the Evansville, Ind., modification center of Republic Aviation Corp. was unanimously approved by NWLB. To compensate for hazards involved in accompanying test pilots on flights, the bonus brings average monthly earnings of these inspectors to about \$410.

Certified for building maintenance electricians at the Oklahoma City plant of Douglas Aircraft was International Brotherhood of Electrical Workers—AFL; for employees of the production planning and tool designing departments of the airplane division, Curtiss-Wright Corp., Louisville International Assn. of Machinists; and for production and maintenance employees of the St. Louis Aircraft Corp., United Steel Workers of America, Aircraft Division—CIO.

NLRB ordered an election within 30 days of Oct. 28 by tool makers and production and maintenance employees of Northern Aircraft Products Division, Aviation Corp., Toledo. The former will vote for Mechanics Educational Society of America, for UAW-CIO, or for neither. The latter will vote for or against representation by UAW-

the Air Transport Command's home governments to American- Defense Plant Corp. executed a owned airlines, on the basis of contract for \$35,000 with Avion,

ment at a plant in California. DPC also increased its contracts with Aeronca Aircraft Corp., Middletown, Ohio, and with Curtiss-Wright Corp. A total of \$35,000 goes to Aeronca for additional equipment at an Ohio plant raising the total commitment to about \$1,150,000. For additional facilities at a plant in Kentucky, Curtiss-Wright was awarded \$2,-400,000. This increase brings the over-all commitment to \$6,300,000. In each case, the company will operate the facilities, title remaining with DPC.

▶ Magnesium — Manufacturers of parts, accessories and end products requiring basic magnesium materials, were relieved of the necessity of filing magnesium inventory reports, War Production Board announced. Producers, fabricators and smelters of basic magnesium materials are unaffected by this amendment.

▶ Aluminum—A list of names and plant addresses of the largest producers of alumina, aluminum-fabricated products and aluminum castings and magnesium, magnesium-fabricated products and magnesium castings has been compiled Room 1501, Social Security Building, Washington, D. C.

Plant essentiality was clarified by

War Manpower Commission in a memorandum to regional directors. When war manufacturing activities are inseparable from those classified as deferrable activities, the entire establishment should be classed as essential, if approximately 75 percent of its activities are essential. However, when the essential activities of a plant are separate and distinct from those unclassified or non-deferrable, the establishment should be designed as essential only with reference to that part engaged in war production.

Coast Guard has amended regulations regarding reserve aviators and aviation student pilots to make them eligible for certain benefits, such as government insurance. Designation as aviator among the reserves, is made by the commandant.

Labor Areas—To help forestall the necessity for further extension of stringent labor area controls, the cooperation of prime contractors was asked in cutting down even more on placement of subcontracts in tight labor areas. In a letter to prime contractors, Charles E. Wilson, WPB executive vice-president, stressed the necessity for bringing by WPB. It may be obtained from labor supply and production requirements into balance and asked for suggestions on how to relieve pressure on critical labor areas.



UNITED'S SIX UNIFORMS FOR WOMEN:

With women now constituting 40 percent of United Air Lines personnel these days, as compared with 15 percent before the war, six different uniforms are now in use for feminine employees. Left to right, they are modeled by Eleanor M. Johnson, commissary department; Dorothy Efferts, stewardess; Corinne McNicoll, air cargo clerk; Jean Vance, passenger agent; Alice Wheeler, medical department nurse, and Jeanne Sparks, traffic representative.

Plants Must Speed Up To Meet Plane Record

Eight percent increase needed to equal 8,362 October peak, says

T. P. Wright, director of the Aircraft Resources Control Office, estimates some 8,300 to 8,500 airplanes will be produced in November, but pointed out that in order to pass the record-breaking October output of 8,362, daily production must be increased by eight percent.

He explained this by saying that in October there were effectively 27 working days since deliveries on the final day, a Sunday, were above the daily average. However, in November there will be in effect 25 working days. Although Thanksgiving and Armistice Day will not be recognized as holidays, delays will no doubt develop.

Heavy Bombers-In regard to heavy bombers, Wright said the industry is about nine months ahead of President Roosevelt's original schedule. Production originally was peaked to 500 heavy bombers a month by June, 1944, and later increased to 1,000 a month. This record, he said, was achieved in October of this year. During October, Arco's schedule for heavy bombers, always slightly higher than expectancy, was off by only nine planes.

Turning to a discussion of the vital manpower problem, Wright said the West Coast situation is not nearly so hopeless as it seemed two months ago. Although nearly all the plants need additional workers, the general situation has shown improvement, he said, under operation of the West Coast Manpower Pro-Draft deferments have helped, Wright said, and additional aid is forthcoming in the recovery by the industry of key personnel from the Army, a program now geting under way.

Los Angeles Aids Drive—He noted that Los Angeles has cooperated with the federal government and the aircraft industry with the realization that it is a critical area and that the Army and Navy could not place additional contracts in the area until the manpower problem was worked out. Community facilities have been improved, Wright said, and cooperation is being extended to aircraft plants generally and to their employees specifically.

At the same time, Wright emphasized, contracts are calling for accelerated production, which means there will be no easing in demand.

Gorrell Sees Hand of Railroaders In Minority Report on Lea Bill

Implies air competitors wrote House document asking that surface carriers be allowed to enter aviation through subsidiaries.

Col. Edgar S. Gorrell, president of the Air Transport Association, lashed out at a House Committee group last week with the strong implication that the railroads wrote the minority report it filed on the Lea bill to amend the Civil Aeronautics Act in which it suggested that surface carriers be allowed to enter air transportation through subsidiaries.

This minority move, he said, came after long hearings on the Lea measure (H. R. 3420), during which there was "not a single word in support of any change in the provisions of the law respecting the entry of surface carriers into air transportation. The subject was never publicly debated, and not a single member of the committee asked a single question bearing on the point."

> Planning Speech—His criticism was voiced in an Oklahoma City speech before the First National Clinic of Domestic Aviation Planning. He did not mention by name the nine signers of the minority report, one of whom—Representative Reece, Tennessee Republican—has introduced legislation (H. R. 3491) which would allow surface carriers under the Interstate Commerce Act to enter the air transportation business, not as such, but through separate, although controlled or affiliated, corporations.

The ATA head's discussion of this feature of the Lea bill was set aside until after he had gone at length into questions of federal vs. state air regulation, in which he favors the former, airport development and zoning, and engine and fuel development.

> Urges Independence—But when he did come to it, he caled for a "ringing declaration of independence of civil aviation from domination by surface carriers," as a principle Lea's measure would reaffirm.

Two months ago, Gorrell said, there were reports that the railroads would seek removal of legal restrictions on "railroad entrance into and control of air, motor and water transportation," and were drafting an amendment accordingly. A month later, when the bill was rethe change.

should have been made at all," he declared, "without any consideration of the question in the hearings, is surprising enough. But it is even more surprising that the minority, in its report, makes the sweeping statement that all forms of transportation should be equally eligible to engage in any form of transportation. Thus, without hearings even on the limited subject of air transportation, the minority sets forth, as its settled position, advocacy of the whole program adopted in the railroads' resolution of which the public was advised only through the

Labeling "fallacious" the argument that the railroads through control of other forms of transportation could obtain greater nationwide transportation coordination, the ATA head insisted that existing airline service has developed on a coordinated basis and "as new airlines enter the field and existing airlines expand, there is no question but that the essential coordination of service will be maintained." He pointed to the work of Air Cargo, Inc., as an example of coordination between air and surface carriers.

▶ Urges Quick Passage—"To provide a nationwide coordinated service," Gorrell said, "it is not necessary that we break down the timetested and traditional policies which prevent one form of transportation from dominating and controlling another."

In his all-out plea for immediate passage of the Lea bill, which was introduced Jan. 11 and reported in revised form, after several delays, on Oct. 20, he deplored a growing threat to "domestic freedom of the air" through elaboration of state regulations. Even a mild reflection in the air of the confused motor highway situation, which he drew on as a parallel, would destroy freedom of the air for domestic civil aviation, Gorrell said.

Unified Regulation—The Lea bill, he told his audience, would deal with this problem satisfactorily, through unification of state regulation. "In substance, what the Lea bill now does is simply to guarantee by a minority of the committee to another without the risk of fall-

SHORTLINES

▶ Braniff carried more mail and express farther during the third quarter of this year than the same three months in 1942. Mail was 1,475,890 lbs., more than double the 685,642 in the 1942 period. Express was 429,524 lbs. as against 211,899. Mail pound miles were up 183 percent and express pound miles 148 percent. Revenue passenger miles were 64 percent over the third quarter a year ago.

Pennsylvania-Central's non-mail route between Pittsburgh and Baltimore has been merged with its AM-14 by CAB, permitting inclusion of Baltimore as an intermediate mail point. PCA previously carried persons and property, but not mail, over an unnumbered route between Baltimore and Pittsburgh, under a "grandfather" certificate. The certificate covering non-mail service was revoked.

At a pre-hearing conference on TWA's application to include Morgantown, W. Va., on its Washington-Dayton route, three other applicants—All American Aviation, Greyhound Corp., and Blue Ridge Airlines - appeared but said they would not intervene. CAB Examiner Barron Fredericks set Dec. 3 as the tentative hearing date on the application.

Continental Air Lines made a plea at a pre-hearing conference to have its hearing on mail rates held in Denver rather than Washington, pointing out that transportation of its evidence and files to Washington would be more difficult than transportation of examiners to Denver. The plea is being given consideration by the board.

ing into some legal trap such as so often confronts the operator of an automobile or a truck on the highways in the course of an interstate journey."

The question as to commercial aviation simmers down to one of avoiding unnecessary, complicated and pyramiding regulation, but the bill does not contemplate that the states shall not play a part. "It simply provides that Congress is to be a kind of umpire through which duplication, waste and conflict can be avoided."

Development Program—He sees the measure as clearing the way for a needed program of airport development in consultation with the States, and the proper first step in cooperative development of airport zoning standards. He described enported, the minority recommended a privilege which should be the gine and fuel research as "of even birthright of every American flyer, more pressing importance than is Coordination—"That this proposal the privilege to fly from one state the research needed to perfect dreams about the helicopter."

TELLING THE WORLD

In its new series of business paper advertisements, Sperry Gyroscope Co. will use full-page illustrated ballads about "Elmer," the automatic pilot. Five verses sing the praises of Elmer, who never gets tired. The ballads have been written by Harry C. Rubicam, of Young & Rubicam, Inc.

Fleet Aircraft, Ltd., Fort Erie, Ont., has appointed McConnell, Eastman & Co., Montreal, to handle its advertising. Magazines, aviation and financial programs are on their schedule.

Fortress has been published by Garden City (N. Y.) Publishing Co. It contains full-color drawings and operational sketches and has a foreword by Brig. Gen. La Verne G. Saunders, deputy chief of the air staff.

Hugh Knowlton director of research and postwar planning for expansion both nationally and internationally. He was formerly a partner of Kuhn, Loeb & Co., and more recently, vice-president in charge of the communications division of the U. S. Commercial Co., a subsidiary of Reconstruction Finance Corp. Recently Eastern applied for 14 new routes, ten to Latin America and Canada and four for supplementary domestic carrier service.

Five employees of General Aircraft Corp., Long Island, will have their names stenciled on the interior of each troop-carrying glider that comes out of the shop. Preceded by the words "For meritorious service in building this ship," the five will be chosen by drawing from names of employees who have had a hand in construction of the gliders. Each employee will receive a replica tag with the number of the ship bearing his name.

Taking their cue from Time's pony edition for transoceanic mailing, The Volunteer, house organ of Consolidated Vultee Aircraft, has brought out a new lightweight miniature for mailing to former employees now in the services.

Corp. has produced an elaborate brochure about the company, its executive personnel, its operations, its products, the companies it serves and its postwar aims. Replete with pictures and using three colors, it gives a comprehensive picture of the company's planes and hydraulic actuating mechanisms and the engineering and precision vital and essential for their production.

Expanded ASC Catches Up with Needs of Vast Aircraft Forces Abroad

Officers say no plane in North African theater was grounded for lack of fuel, despite enormous requirements.

By ALEX McSURELY

New details of already tremendous and a still increasing flow of United States aircraft supplies to combat theaters around the globe have been disclosed at Air Service Command headquarters at Patterson Field, near Dayton.

Maj. Gen. Walter H. Frank, commanding general of the Air Service Command, recently completed a four-day meeting of key Army Air Forces supply officers flown in from combat zones for conferences on future requirements.

American planes in the North African theater consumed millions of gallons of fuel and lubricants—the exact figure a restricted item—in no case was a plane grounded for lack of fuel.

As a result of battle experience, there has been a large scale revision



ASC SUCCEEDS LUFTWAFFE:

These Air Service Command technicians, "in" a bomb-battered hangar in Italy which formerly housed planes of the Nazi Luftwaffe, give a U.S. bomber a final tune-up before it goes on a mission from the air field now held by the AAF.

downward in supply tables for some items, including surfaces, landing gears, oxygen equipment. It is estimated that savings up to \$500,000,-000 already have been made as a result of order cancellations due to these revisions. In most cases, the Army has found that they can salvage enough gears, surfaces, oxygen bottles and other items from damaged planes without further large scale shipments.

face shipments due to submarines or other causes currently are negligible, with more ships available than needed at the moment.

The ASC training and supply program is geared to continued expansion and changes of the AAF, with new groups being trained and new supply tables being prepared for serving and supplying new types as they go into use.

▶ Engines Most Needed—The ASC inventory has jumped to around 500,000 items from the 400,000 reported in a recent Office of War Information report on the ASC. Items most needed at the moment are engines.

Many Italian facilities have been taken over for warehouse and shop use by service squadrons as the advance through Italy continues. Many of these facilities were not destroyed by the retreating Nazis and others have been rebuilt or repaired. During September not one heavy bomber was grounded at Guadalcanal for want of spare parts. Fox Hole Diggers—Equipment to dig fox holes on a mass production basis is now being supplied to American troops in the Pacific.

An increased supply flow to Australia has answered earlier complaints that other bases along the route were diverting aviation supplies earmarked for Australia.

Chile Expands Force

Plans for expansion of Chile's air force, dependent largely on the rate at which the South American republic can get tactical equipment from the United States, were re-

Stowaway Ban

A bill making it a misdemeanor to stow away in an airplane was introduced the other day by Rep. Lindley Beckworth of Texas. When curiosity led to inquiries, Mr. Beckworth said he had tossed H. R. 3471 into the hopper upon request, and requested to be put down for no comment.

Further investigation was called for. The answer was found at the far end of a marble hall. A Pan American employee in Hawaii, in a hurry to go home, and not being duly authorized as a passenger, got himself inside a mail bag, thence into the mail compartment of a Clipper, which carried him to what Hawaiians call the "mainland." When the law got him it could charge only that he didn't change his registration address.

ported by Lt. Gen. Manuel Tovarias, chief of the Chilean air force, in an interview at Wright Field, Dayton, last week.

Chile's air force expansion is being patterned largely after the program of the U. S. Army Air Force, in training, procurement and maintenance. Already early phases of the expansion have gotten under way with the building of barracks, construction of new air bases, and calling men into service for training. Training planes already have been sent from the United States, he said.

Sen. Brewster Asks U. S. Air Policy

Warns present base entry permits will end six months after close of war.

Senator Ralph O. Brewster, of Maine, a Truman Committee member who was among the five senators who circled the globe in an investigation of war theaters, has reported to the Truman Committee that the most impressive lesson of his trip is the revolution brought about by air transport.

He noted that America has built and is operating hundreds of airfields all around the world, costing hundreds of millions of dollars.

Sees End of Air Rights—"We have no right of access at the present time to any of these airports—built by our money outside the Western Hemisphere—six months after the

war comes to an end," Brewster said. "This seems to be a situation that invites early attention, in view of the certain significance of air transport in the world that is to be."

Brewster said some current discussions have proceeded on the hypothesis that the only question involved was that of military air bases and added that this is very far from being the case.

▶ Problems—Military aviation problems undoubtedly will be worked out in conjunction with the others concerned in the United Nations and appropriate decisions reached regarding the allocation of responsibility in the keeping of the pace and the use of the various facilities that are necessary to girdle the globe.

"This," said Senator Brewster, "is very far from reaching the root of the problem, since military aviation and expansion must necessarily progress with a commercial base."

that the facility to build planes is a constantly evolving art with almost undreamed of possibilities in the decades immediately ahead must rest in substantial measure on the progress and development of commercial aviation. In this field, America has a tremendous start as a result of the extent to which commercial air travel had developed before the war.

In the field of transoceanic aviation, one American company had been a leader in the world with operating rights in more than 60 foreign countries and coping successfully with the keen competition of the far more closely supported governmental monopolies of overseas airlines in other countries."

Points to British Policy—Brewster said Britain is continuing the policy of "monopoly in overseas aviation with the great British Overseas Airways amply financed from government funds and placing at its head one of the ablest administrators and keenest minds in the British Empire in the person of Lord Knollys, formerly governor of Bermuda and now devoting his great talent to the future of Britain in commercial aviation around the world."

Asked Senator Brewster: "Since when is it treason for America to take thought as to its position in this field? Is it improper or un-American to suggest that the hundreds of millions of dollars invested by America in airfields in all parts of the world may perhaps be permitted to serve in some measure the interests of America in the air argosies of peace?"

"DIM-OUT AREAS" INSIDE YOUR PLANT?



Reflecting floors made with Atlas White cement would materially increase illumination on this vertical work surface.

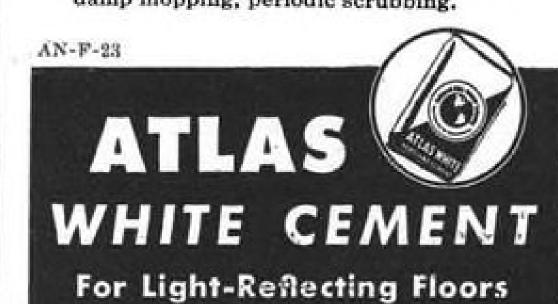
The proven value of considering the floor as a contributing factor to effective lighting is an outgrowth of wartime airplane production.

Lighting tests made by General Electric engineers in a bomber plant showed that a Light-Reflecting Floor, made with Atlas White cement, reflected 61% more light than an adjacent gray cement floor under identical lighting conditions, which were on the order of 35 foot-candles. This resulted in an increase of 61% in the illumination on underwing surfaces and of 20% on vertical work surfaces, where a large part of normal industrial work is done. Shadows and dark areas were reduced, and seeing was made easier, more comfortable and more efficient, by reducing the contrast in brightness between the surrounding areas and the visual task.

For complete information about Light-Reflecting Floors, for war and post-war construction or conversion, write for a copy of the 24-page booklet, "Light from Floors." Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

HOW ABOUT MAINTENANCE?

Experience shows white cement floors are easy to clean, easy to keep clean, and retain their reflection advantage. Maintenance is simple—frequent sweeping, occasional damp mopping, periodic scrubbing.



THE AIR WAR

COMMENTARY

Allied Bombing of Fighter Plants May Bring Luftwaffe Nosedive

Heavy raids have crippled single-engined output and commentator forecasts blows at twin-motored fighter and engine plants with new 15th Air Force and more heavy British-based bombers joining fray.

When the Eighth Air Force began its daylight precision bombing campaign in August, 1942, there was much shaking of heads. Even those who wanted it to succeed so as to round out the day-and-night combination with RAF's bomber command were dubious. We know now, however, that back in those early days of experiment at least one set of people were taking no chances. It was that very month which saw a group of aircraft factories established far to the east in Poland (Posen) and East Prussia (Marienburg), well beyond the range of the most optimistic ambitions of America's Flying Fortresses and Liberators based in England. The battletested Fockewulf 190 single-engine fighter was to be produced and assembled in this area, with a peak output of 200 fighters per month by the autumn of 1943.

Drive on Fighter Production-Despite the fact that one of the main objectives of the Eighth Air Force was the destruction of the Luftwaffe, many factors conspired to postpone the main attacks on the fighter plants until late July, 1943. Among these factors was the draining off of heavy bomber strength to North Africa; another was the high priority through the spring and early summer of U-boat production and repair bases. If the casual observer regards the big daylight attacks on the Nazi war industrial machine as a sort of opportunism based on forces available, state of the weather, etc., the following pattern should be pondered.

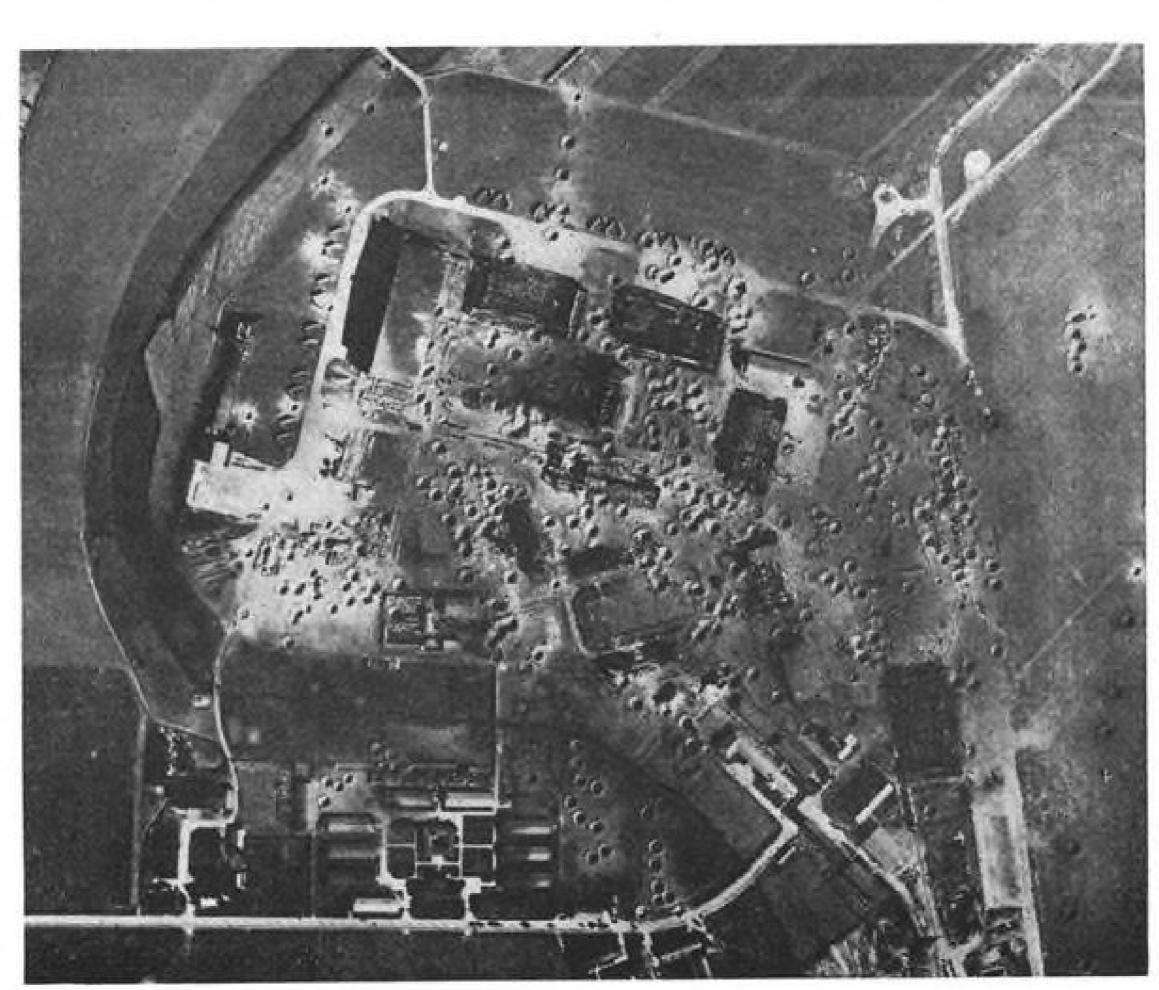
Busy Week for the Eighth—After important attacks on aluminum and magnesium in Norway on July 24, shipyards at Kiel on the 25th, a huge tire factory at Hanover on the 26th, the main campaign on the German fighter factories got under

way (some had been struck earlier, such as the Heinkel plant at Bremen). First on the list was the Ago-Flugzeugwerke at Oschersleben on July 28 (approximately 60 FW-190's per month), where despite heavy clouds considerable damage was done. The next day the Arado Flugzeugwerke at Tutow (Warnemunde) was tackled (another 60 FW-190's per month), and the damage was so serious that there has been little production there since, and the plant may be abandoned, according to latest authoritative reports.

On July 30 and August 1 the Fieseler Flugzeugbau at Kassel (estimated 30 FW-190's per month), had its turn, and some damage was inflicted. (The RAF hit this important industrial center twice in October, dropping a total of over 3,000 tons of bombs, and wiping it off the map as a war potential, including the Fieseler plant and an aircraft engine factory).

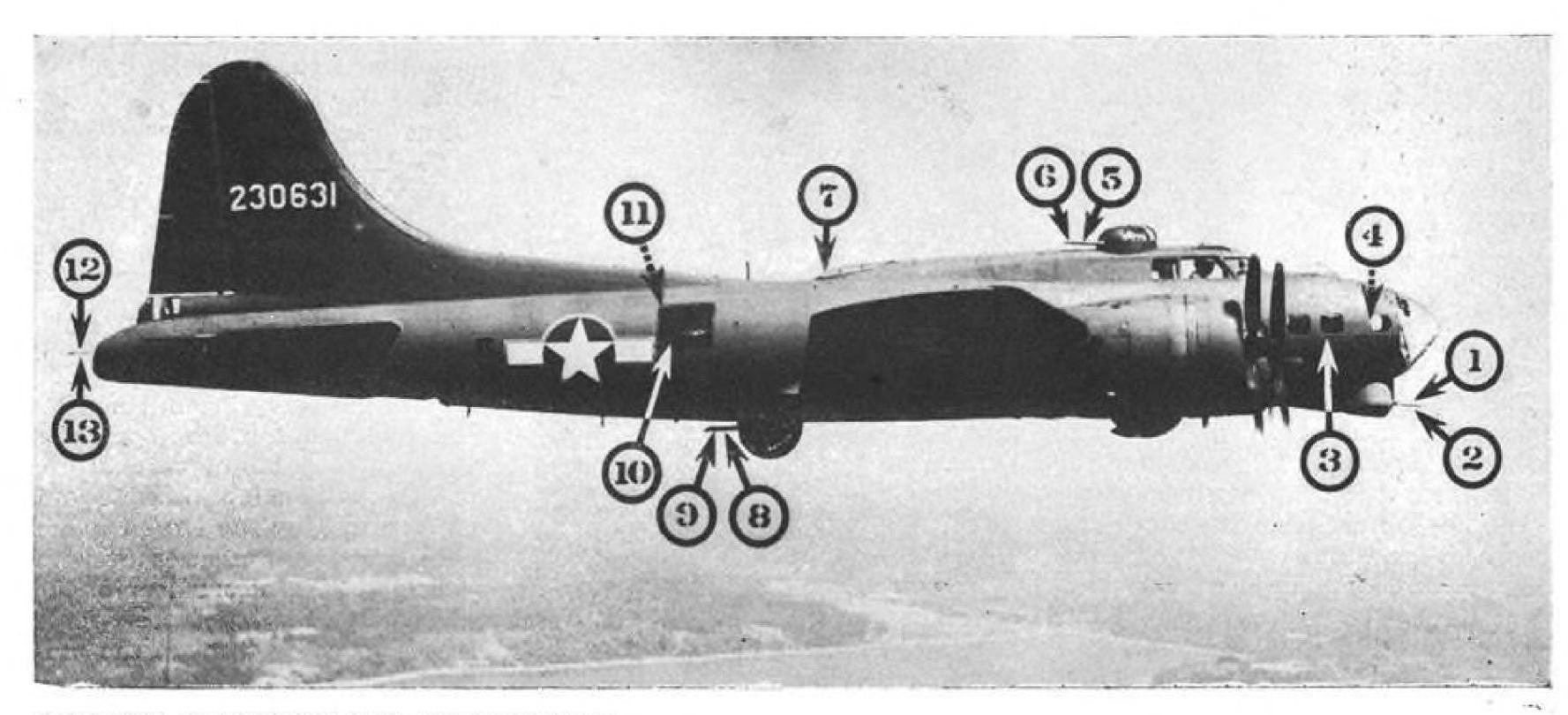
Further Blows in October—This

series of attacks in late July aimed at the production of some 150 FW-190's per month, the group around Marienburg, East Prussia, accounting for roughly 100 more at this time. The main assembly factory at Marienburg was one of the principal targets on the long range attack of Oct. 9, and Gen. Arnold has pronounced this probably the most successful precision attack of the war to date. Air Chief Marshal Sir Charles Portal described it "the most perfect example in history of the accurate distribution of bombs over a target." Every building of the Marienburg layout was damaged, many utterly destroyed. The plant will be out of production for some months, if not altogether abandoned. Another very heavily defended target on this 1800-mile, 4pronged attack was the important



"FINEST EXAMPLE OF DAYLIGHT PRECISION BOMBING":

This official photo was taken by reconnaissance planes soon after a raid by strong formations of U. S. heavy bombers on Oct. 9 on the Focke-Wulf 190 factory at Marienburg, East Prussia. Gen. Arnold called this the finest example of daylight precision bombing. The plant was "entirely devastated.



SECRET OF FORTRESS FIREPOWER:

Here, for the first time, firepower of the Boeing B-17G Flying Fortress is shown graphically. Guns 1 and 2, in the new deadly chin turret, and guns 3 and 4 are used by bombardier and navigator for frontal attacks. Guns 5 and 6 are operated by the first engineer in the power turret; gun 7, a top gun located midway in the fuselage, is operated by the first radio operator; guns

8 and 9 are used by the second radio operator in the ball turret against underneath attacks. Guns 10 and 11, in the waist positions, are used by the second engineer and the first radio operator to ward off lateral attacks. Guns 12 and 13 are used by the photographer and tail gunner to fight off enemy attackers coming in from the rear.

Focke-Wulf parts factory at Anklam, Pomerania, 90 mi. north of Berlin.

Messerschmitt Gets the Works--Germany's other standard single-engine fighter is the perennial Messerschmitt 109. The newest model of this seven-year-old fighter is the ME-109 G and variations, equipped with the new Daimler-Benz 603 engine, which turns up better than 1500 hp. This is still the Luftwaffe's best, right up in there with the Lightning, Thunderbolt, Mustang and Spitfire.

and Spitfire. In the 1,000-per-month program of single-engine fighters, roughly two-thirds of them were to be ME-109's, and one-third FW's. The 109's are turned out in Regensburg, Wiener Neustadt and Leipzig, all being a considerable distance from bases in England. On Aug. 17 as a part of their first anniversary celebration of their initial daylight raid the Eighth Air Force sent out some 150 Fortresses against the huge Messerschmitt factory in Regensburg, dropping about 300 tons of bombs and destroying more than 60 percent of the works, which had a peak monthly capacity of 250 ME-190's. Gen. Anderson, bomber chief of the Eighth, stated that the current production was about 200 per month. Through this devastating attack the August output at Regensburg was

off between 30 and 40 percent.

Hit Vienna from the South-A healthy sock at ME-109 production had already been taken on Aug. 13 when sizable formations of Liberators of the Ninth Air Force made a 2,000-mi. round trip flight from bases in Libya to drop their loads on the Wiener Neustadter Flugzeugwerke, 27 miles south of old Vienna, where between 200 and 250 Messerschmitt fighters are turned out each month. Heavy damage was inflicted, and August production may have dropped as much as 40 percent. A return engagement was staged on Oct. 1 when B-24's from Tunisia severely damaged the Henschel Flugzeug-Werke at Wiener Neustadt (which makes ME-109 airframes), in an 1800-mi. round tripper. Finally, as a kick-off for the newly organized Fifteenth Air Force under Lieut. Gen. Carl A. ("Tooey") Spaatz—especially set up for long range strategic bombing-an even larger attack on Wiener Neustadt was made, including both Fortresses and Liberators, and the results were reported as by far the best of the three attacks, the main assembly plant being demolished. The round trip was reported as about 1,400 miles, indicating that the big bombers may have stopped off at some of the newly improved airfields in Sicily or Southern Italy rather than

making the full return trip to Tunisia. The air circle around the Reich is getting smaller and tighter. Leipzig at Last—The other important ME-109 factory is the Erla-Maschinenwerke at Leipzig, where some 150 are turned out each month. On Oct. 20 the RAF gave this important industrial and transportation center near the Czech border its first large-scale blasting of the war and the first at all for nearly three years. This vital cog in the Nazi war machine is sure to be high on the priority list of the new Fifteenth Air Force. The best way to visualize what these air assaults on German fighter production mean is to imagine how we should feel and how badly our plans would be thrown out of kilter if long range Focke-Wulf 200's and Heinkel 177's should bomb and badly damage the big factories in Buffalo where Curtiss Warhawks and P-47 Thunderbolts and Bell Airacobras are being produced, and the plants in Connecticut and Long Island turning out Vought Corsairs, Grumman Hellcats and Republic Thunderbolts, sharply cutting down our output of these vitally required fighter planes.

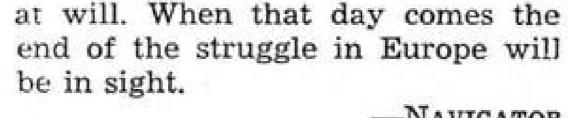
The Deadly Spiral—With mounting combat losses (nearly 1,000 for October on the Western air front alone), coupled with falling produc-

tion (Gen. Arnold reported a decline in Germany's September fighter production, the first in more than a year), the Luftwaffe may be headed for a nosedive or tailspin or something equally disastrous within the next few months.

Factories producing twin-engine fighters mounting rocket-firing weapons, long range cannon and mortars are also due for attention, as well as aircraft engine factories. The constant pounding of important fighter bases in occupied France and the low countries will continue the challenge to fight or be smashed up. The new threat from the south will spread the thinned out fighter defenses thinner than ever. The present air battles are terrific, but our bombers are getting through.

With increased long range fighter protection and sufficient equipment to pull off two or more important missions simultaneously on widely dispersed targets, the enemy fighter opposition is being weakened still further.

The day will come when we can bomb any part of Germany almost



-NAVIGATOR

Knox Praises NACA

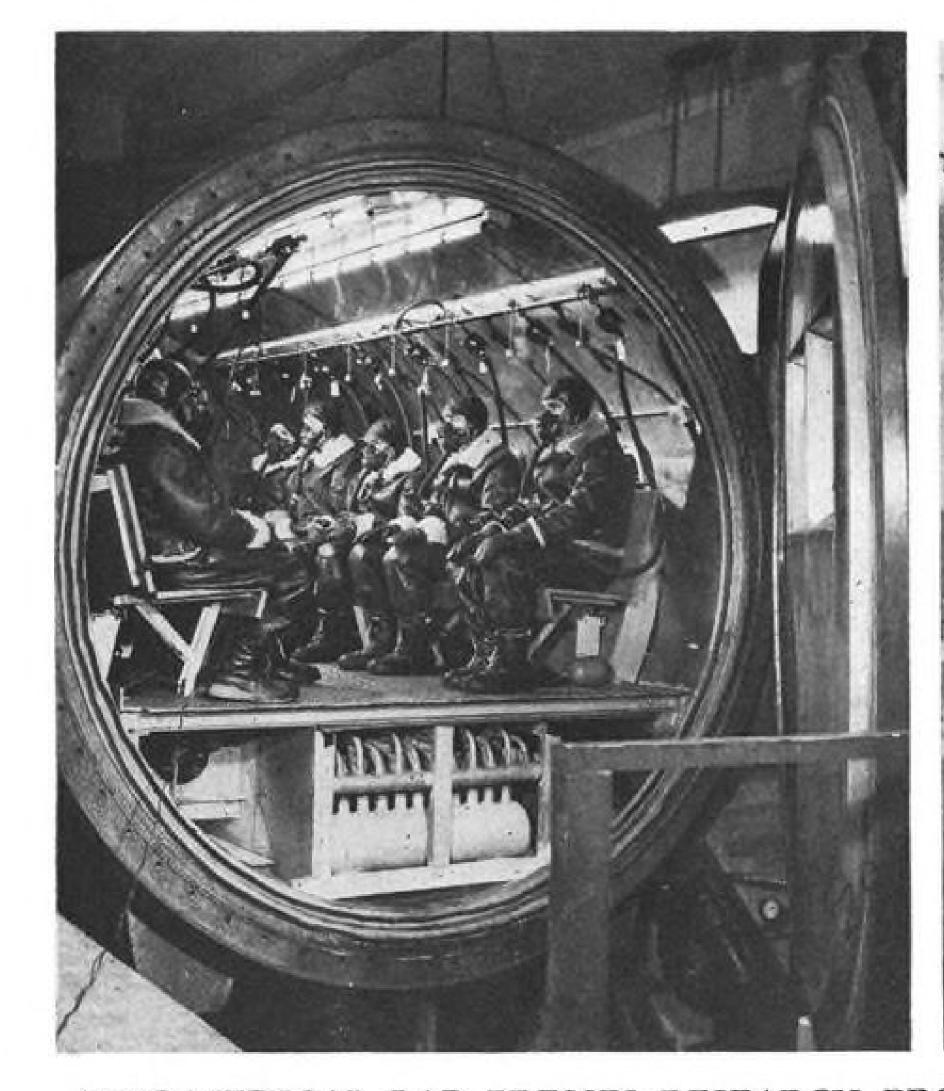
Paying tribute to the work already contributed by the National Advisory Committee for Aeronautics in the development of modern fighting and bombing planes, Secretary of the Navy Frank Knox last week said that the development of an aircraft capable of vertical dive bombing was made possible only from research by the NACA, which determined the pressures over the lifting and control surfaces of airplanes and how those forces changed in going through the pullout at the end of a vertical dive.

Praises Wing Studies—Knox also gave NACA credit for development of basic fundamentals such as NACA wing sections, cooling methods and high lift devices, which he said had made possible the Corsair. Wildcat and Hellcat as well as most cther aircraft flown by the Navy.



PLASTIC "MAN" AIDS AAF:

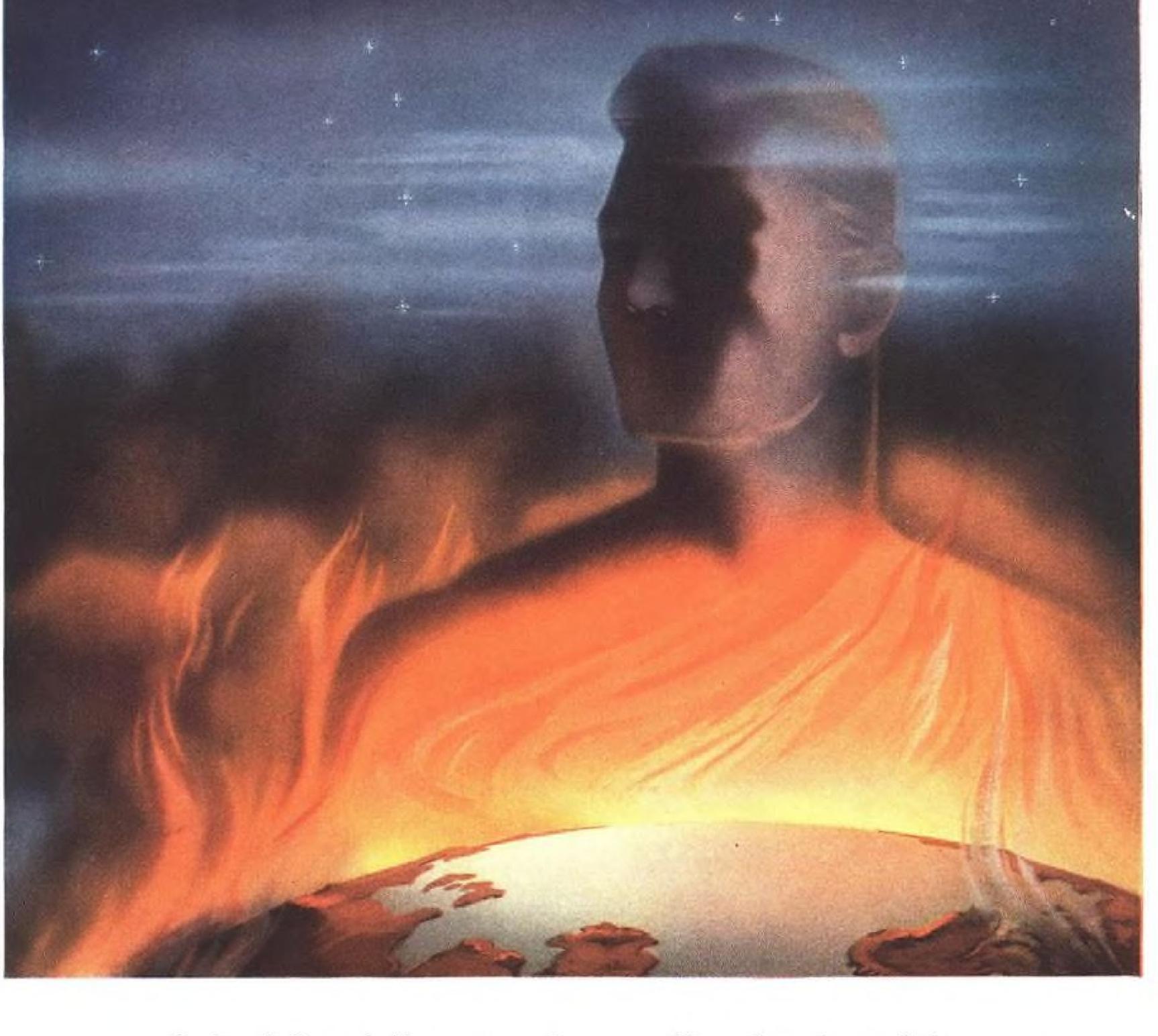
This plastic "man" being fitted with a winter flying jacket is one of several mannequins used by the Aero-Medical Laboratory of the Army Air Forces at Wright Field for fitting clothing and equipment and for determining proper construction of airplane cockpits and ball turrets to accommodate various physiques.





AERO-MEDICAL LAB PRESSES RESEARCH PROJECTS:

Pictured here are scenes from the Army Air Forces Aero-Medical Laboratory at Wright Field, where scores of projects are under way constantly to improve flight conditions for personnel. At left is the cold weather chamber with its huge vault-like door. Here, wearing oxygen masks and cold weather flying gear, airmen react to various high-altitude conditions. Shown at right is a soldier simulating actual physical exertion of a flyer as he pedals a wheel while wearing an oxygen mask. An officer checks the regulator to determine the mixture of oxygen and other gases being expelled by the apparatus. He also can determine whether the airman is receiving enough oxygen from the present regulator.



Out of Great Emergencies . . . New Leaders Arise

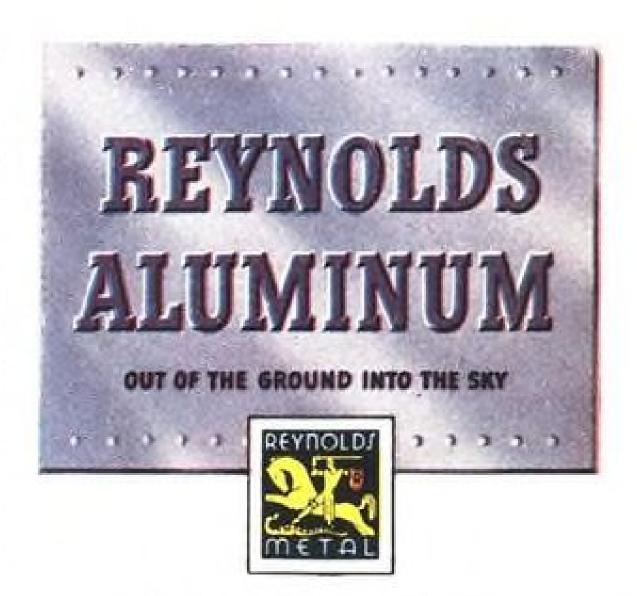
A MONG FREE MEN, always, new leaders A arise to meet the challenge of great emergencies. These are the men who deny the "don'ts" and the "can'ts" of conservative years . . . who dare the impossible.

There were several such "impossibilities" in the aluminum industry, before Pearl Harbor. It was "impossible" that America's war needs could ever exceed what was then considered a huge national production capacity ... or that imports of foreign bauxite could be stopped ... or that our bauxite could be turned into purest aluminum.

But far back in 1940, a single company challenged all three of those "impossibilities." Reynolds, then the world's largest aluminum foil producer, built a huge new plant in Alabama...began mining domestic ore... and deliberately prepared to process lowgrade bauxite. Today, this is the only plant in the U.S. where bauxite comes in at one end, and aluminum sheet rolls out the other!

As war came, the huge rewards of this pioneering became apparent even to the most skeptical. But Reynolds kept on breaking precedents. From earth to aluminum sheet was one step. They dared the next step . . . earth to sheet to finished aircraft parts. Now Reynolds feeds endless streams of airplane parts to assembly lines throughout America!

And there is even more to this story than the quantity production of aluminum ingot, aluminum sheet and finished aircraft parts. The wings of our victorious airmadas demand quality as well as quantity... they must be made ever lighter and stronger. Reynolds engineers are preparing to announce new miracles of metallurgy. Further "impossibilities" will be conquered . . . in Reynolds' steady progress toward Leadership in Aluminum.



REYNOLDS METALS COMPANY GENERAL OFFICES, RICHMOND, VA. 38 PLANTS IN 13 STATES

AMERICA'S NEW SOURCE OF ALUMINUM



AIRCRAFT PRODUCTION

Surplus Engines, Propellers May Equip Post-War Commercial Planes

Even though many warcraft won't be adaptable to peace operation, huge stocks of accessories will be, industry engineers say.

By BLAINE STUBBLEFIELD

The extent to which surplus warplanes can be used commercially
after the war is controversial, but
there is no doubt about engines, propellers, instruments, valves, pumps,
electrical devices and a long list of
accessories and manufacturers' supplies down to the nut and bolt categories.

This important equipment for some reason has not received the publicity that airframes have been accorded in discussion of post-war surplus materials but manufacturers are frankly worried about the situation.

▶ Use of Warplanes—Although most of the comment has revolved about the usefulness of warplanes, overstocks of equipment which could be installed in new post-war commercial planes might glut the market for many months after the war.

Disinterested engineers say there is no reason why military aircraft engines cannot be used commercially. The entire range of desirable commercial sizes will be available. Their military power ratings, which are very high, would be cut back for safety and economy in airline use, but that would be paper work.

Private Planes—Many trainer type engines would be suitable for powering private planes. Use of General Motors' Allisons and Packard's Rolls-Royce Merlins would be limited, probably to in-wing installation.

In the last four months of 1941, more than 20,000 engines were delivered, about half of them tactical types and the rest trainers. The proportion of trainers drops back to a third or a quarter of the total, which reads in six figures annually for 1942 and 1943. If the war goes on through 1944 at the present rate, and if engine output is not reduced, from 300,000 to a half million of them will have been delivered. No one can say how many new and

usable units would be on hand at the close of hostilities, but it would be enough to supply American aviation, even the world, for a long time.

Program Awaited—Even if some persons, in or out of authority, have definite ideas as to what to do about this staggering invoice of airplane power, it doesn't mean anything until government and industry have agreed on a program. At least two

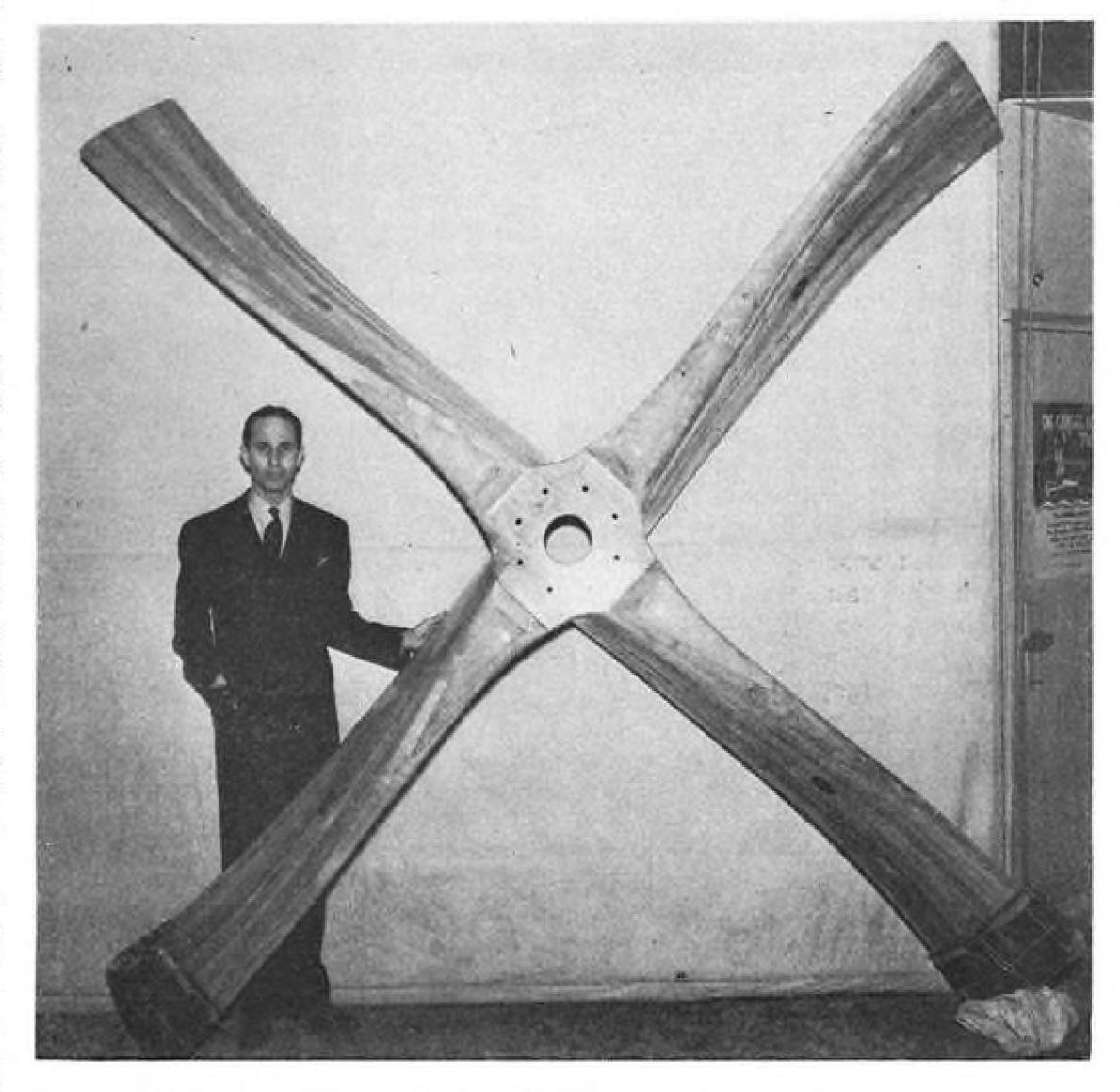
bills have been introduced providing for disposition of surplus war equipment. One was HR 2959, by Rep. Clarence Lea, of California, setting up a director under the Civil Aeronautics Board to dispose of surplus airplanes. Dr. Edward P. Warner, vice-chairman, declared against it, and the chances are it will die in a pigeon-hole.

The other is S 1478, by Sen. James E. Murray, Montana, providing for disposition of war materials across the board. It probably will fail because it puts all cats and dogs in one sack, and because it gives one administrator too much authority.

Propellers—The post-war picture

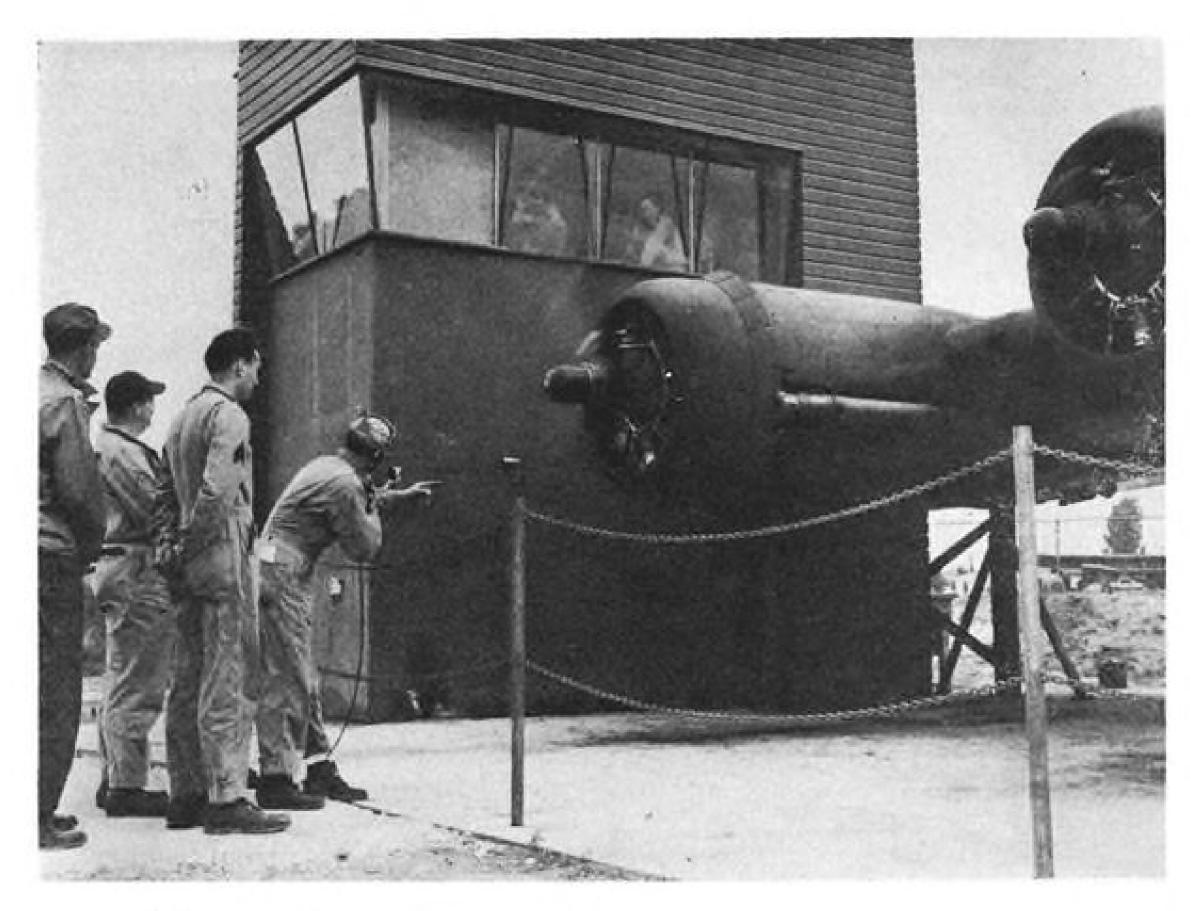
for propellers is substantially the same as for engines, except that some blades specially shaped for rapid climb and other special military functions might be serviceable with some change, or not used at all. But there will be an enormous supply available for commercial use or other disposal, depending on the will of Congress.

Same story holds for many parts and accessories. Vast inventories,



GIANT TEST CLUB PROPELLER:

Gwinn-Stone, Inc., is now delivering giant four-bladed test club propellers to leading aircraft engine companies and the Army Air Forces. The model shown, of 32 laminations, has been kiln-dried and processed under special moisture control. The blade has nine air foil sections. Shown is William B. Stone, vice-president of the company.



BOEING CALLS IT THE B-161/2:

This part-house, part Flying Fortress is the engine run house at Boeing. It is used to help train ground crews and also as a finishing school for pilots who already wear wings. The "cabin" resembles a complete Fortress cockpit with all instruments. In addition to a place for pilot and co-pilot there are seats for ten others. The attached wing is complete with engines, propellers, all installations, controls and instruments.

widely interchangeable, of the highest quality, will have to be dealt with.

Post-War Effect—One point of view is that we are fortunate to come out of the war with these large supplies of peace goods. The other is that if they are thrown on the market, manufacturers and their employees will be out of luck. Producers of ships, some types of trucks, machine tools, refrigerators, furniture and scores of other lines are all in the same boat with the aircraft industries.

Engine, propeller and accessory supplies might last for years, engineers say, unless new designs make goods in stock obsolete, rendering them worthless. Such improvements are not now in view.

What happened after World War I is no guide to follow this time. There was no aircraft industry then, except the war mushroom, which expected to fold up with the armistice. The operations industry started with surplus engines and planes as its only source of supply.

▶ Engines—American engines then were liquid-cooled. Many thousands boats, at \$100 to \$500 each. Conceivably, a few of the beautiful liquid-cooled engines of this war

could be used in high-powered boats and small vessels. It is difficult to think of anything to do with a big radial engine except fly with it-or melt it down for scrap.

Little can be said now about the debatable post-war use of military airplanes. Some operators have said they don't want to convert Army's cargo and troop planes. They may change their minds if and when they see the price tags. Their other choice will be new planes of substantially the same design for three five or more years. At least two A-1 opinions have DC-3's flying around for several years after peace day.

Plane Schedules Met By West Coast Firms

Coast needs 13,000 men to maintain level, says production council chief.

For the first time in five months, West Coast airframe plants were able in October to meet military production schedules. Whether they will be able to continue "on schedule" reports will depend, they beof Liberties and OX-5's went into lieve, on solution of their manpower problem.

"We still are short 13,000 workers," said Claude Ryan, president of

West Coast's Aircraft War Production Council in a conference of Council members and West Coast Aviation Writers.

Improvement-While Boeing in Seattle has experienced a decided net gain in manpower, the California manpower improvement in the past few weeks has been slight —one-fifth of one percent.

Even the California gain has cheered southwestern factory heads, for the previous report showed worker "quits" exceeded "hires."

Five-day Week Studied-Western factories have not yet determined the extent to which they can adopt, with hope of increasing production, the ten-hour five-day week requested by Charles E. Wilson, executive vice chairman of the War Production Board.

They do not believe that jumping from a 48- to a 50-hr. week necessarily will improve production to the extent that they can forget the 13,000 more workers they declare they must have by Dec. 31 to meet military demands.

▶ Machine Equipment — Factories with an abundance of machine equipment might use the ten-hour day to advantage. Others, with less machine equipment, now keeping machines busy 22½ hr. a day through three shifts, obviously will suffer "machine time losses"-and production losses—under the Wilson proposal.

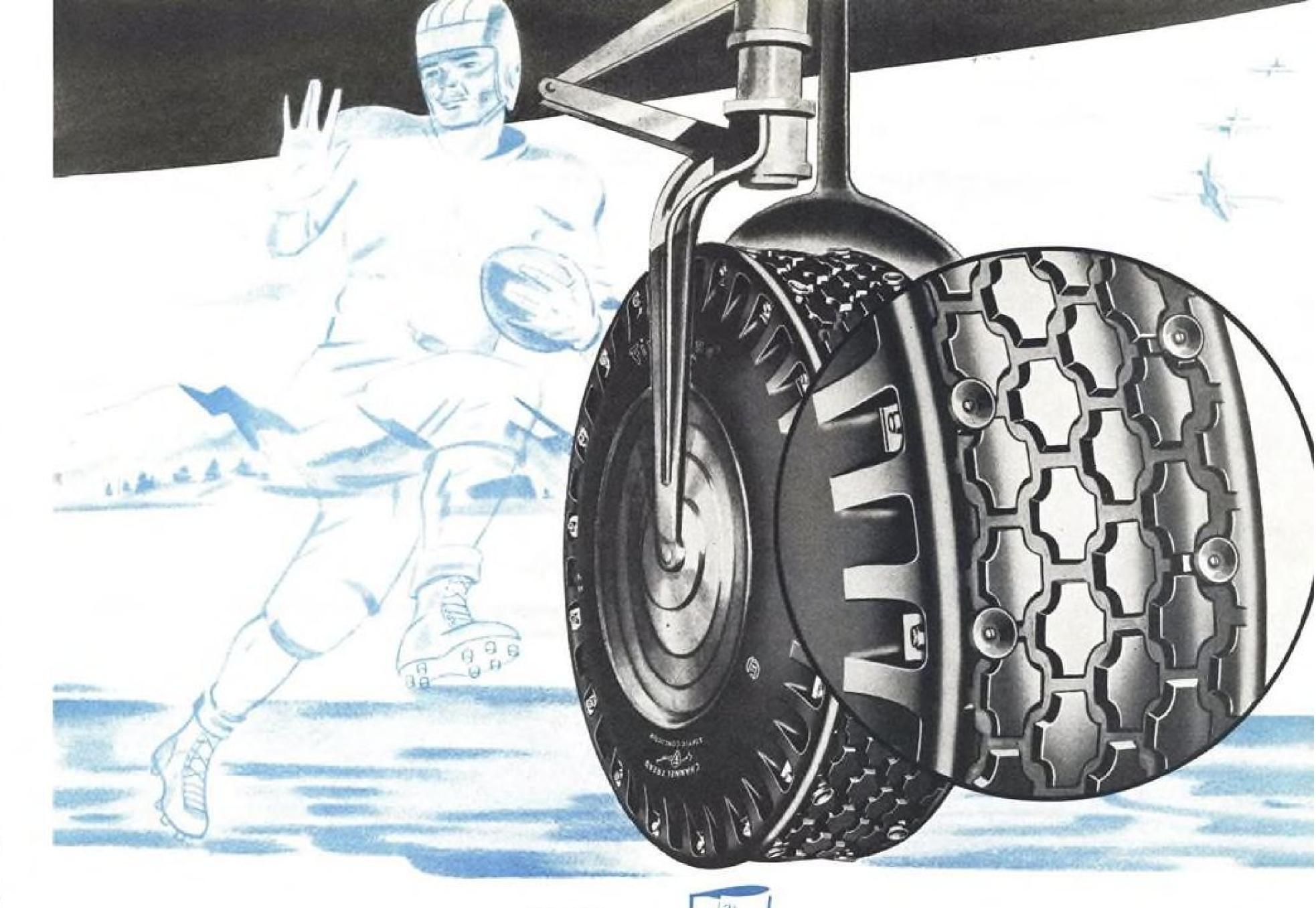
Western reaction to the 50-hr. week proposal has been unique in that the west's Aircraft War Production Council considers it too complex to handle as a body. AWPC as a group will not respond to Wilson's request. Factory members will consider it on the basis of its practical application to the individual factory.

Better Sound-Proofing

New Vibeston, made of asbestos, reduces plane noise and vibration, U. S. Rubber Co. says.

Development of a new sounddeadening material which engineers believe will go far to alleviate conditions that threaten airplane crews with impairment of hearing has been announced by Herbert E Smith, president of United States Rubber Co.

The new product, known as Vibeston, is made of asbestos and other non-strategic materials. It serves both to deaden sound and lessen vibration. Smith said the only other known material comparable for this purpose in planes is mica, the major



CLEATS FOR FROZEN FIELDS

HERE'S another outstanding Firestone contribution to flying safety - the Firestone CLEATED Channel Tread Tire! Already widely acclaimed for making possible landings and take-offs on soft, muddy fields, the Firestone Channel Tread Tire now adds to its accomplishments safety in high speed landings on dangerous, icy surfaces. Sturdy, built-in, steel disks with sharp facings dig in and take hold immediately on impact of landing to provide positive traction on the smoothest ice.

Of added importance, these skidpreventing cleats may be inserted or removed in a matter of minutes. Tests

under the most severe operating conditions prove definitely that the Firestone Cleated Channel Tread Tire provides performance superior to any other ice tire.

This is only one of a long list of Firestone contributions to aviation. And whether your problem is one of development, design or volume production — whether your requirements are made of rubber, metal or plastic - a Firestone engineering representative is available on request.

Listen to the Voice of Firestone with Richard Crooks and the Firestone Symphony Orchestra, Monday evenings over N. B. C.

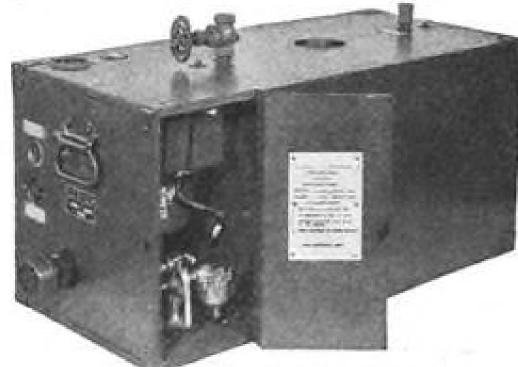


HUNTER HEATERS MADE FOR RAPID WATER HEATING

Automatic Gasoline Burning Models Designed for Mobile Service Units

CLEVELAND, OHIO—A gasoline burning water heater that will supply water at high temperature, and that is capable of automatically maintaining a continuous supply, has been perfected by Hunter and Company of this city, makers of Hunter Universal Gasoline space heaters.

One is a portable unit with a ten-gallon pressure tank that is suitable for connection to any permanent or emergency water supply. It is completely automatic. The other is a five-gallon unit with a gravity type tank, designed to heat small quantities of water in a hurry. This heater is meant to be permanently installed in any kind of mobile service unit where there is frequent need for hot water. It fastens to a wall, and may be filled through an opening in the top, or connected to a hand pump or to a pressure water system.



Hunter Automatic Water Heater

In both models, the heating element is a Hunter Universal Gasoline Burner, with "Sealed in Steel" flame, adapted as an immersion unit. The steel tube burner, with its terrific heating capacity, is immersed deep in the liquid to be heated. Unusual results are obtained in speed of heating and flexibility of automatic control. The same principle has been used by Hunter in special applications in storage or shipping tanks to protect oil or other fluids against cold.

These advantages, combined with the fact that the Hunter burner operates on any kind of gasoline, from truck fuel to highest octane, give Hunter Water Heaters an almost unlimited range of usefulness in mobile photographic, laboratory or hospital units, in field service units of all kinds . . . anywhere it is desirable to have an extremely simple and effective means to supply hot water.

More complete details about Hunter Water Heaters and their application may be obtained from Hunter and Company, 1540 E. 17th St., Cleveland, Ohio.

(Advertisement)

1,000th Cornell

Employees of Fleet Aircraft, Ltd., Fort Erie, Ont., in celebration of the completion of the 1,000th aircraft of the Canadian Cornell type, are working extratime and donating money to present an extra plane to the RCAF. It is the 1,000th aircraft built in a year; the 1,942nd craft built since the plant opened in 1930; the 1,638th plane delivered since the war began.

supply of which has been cut off by the war.

▶ 50 Percent Lighter—"Vibeston's usefulness, however, extends far beyond that of mica," Smith said, "because it is as much as 50 percent lighter than mica, and consequently larger areas of planes can be insulated. Moreover, many planes which heretofore had to sacrifice all noise dampeners and vibration deadeners in the interest of lightness can protect the hearing of their crews through the use of the new material."

Smith said mass production of Vibetson is now in progress and its use will be confined to war purposes for the duration.

Spare Parts Make Up One Douglas Out of 19

Coast plant reports production of 3,500,000 lb. of parts monthly.

fly from the flight ramp at Douglas Aircraft Co., one more bomber goes off in packages, according to R. L. Porter, parts contract administrator. Three and a half million pounds of spare parts monthly, excluding engines, leave Douglas' Santa Monica plant alone, for the AAF.

▶ Weatherproofed — Packed in weatherproof containers, approximately 8,500 separate replacement items, from washer to inner wing, ground tools and landing equipment are shipped off for the A-20 Boston Bomber, providing for a year's maintenance. Transport Aircraft such as the C-54 Skymaster carry spare parts for two-year service, about 10,000 items in addition to ground tools and handling equipment.

Porter pointed out that before the replacements were constructed on order.

4,200 New Employees Ease Boeing Shortage

Johnson predicts production will be ahead of schedule by year's end.

Boeing Aircraft Co., which was beset with one of the tightest labor markets in the country a few months ago, reports net gain of 4,200 employees in September and Cctober.

P. G. Johnson, Boeing president, said action of the War Labor Board Sept. 4, authorizing installation of a job valuation program and greater differentials for night shift work, brought wage increases to some 85 percent of Boeing personnel and resulted in an overnight step-up in recruitment.

▶ Aids Plane Output—The increased employment during September and October was an important factor in production of Flying Fortresses, which set an all-time record for October.

"It is possible now to predict," said Johnson, "that our production will continue to increase and by the year end will have overtaken the goal set by the War Department for accelerated monthly deliveries."

Need Continues—Boeing officials said there will continue to be a need for a large number of additional employees in order to meet future schedules, however, and to enlarge the personnel of the Renton plant and to fill normal replacement needs. Present requirements are largely for riveters' assistants.

Boeing production, after a long period of steady acceleration, reached a peak in May, 1943, and remained fairly constant at that level through June, July, August and September.

▶ Subassembly Plants—Future production will reflect the company's new branch plants' program comprising six newly established satellite factories in western Washington to handle subassembly work.

The recent employment upswing at Boeing to which wage increases contributed materially, also was influenced by an intensive community-wide Chamber of Commerce drive and climaxed by an Army-sponsored outdoor war spectacle attended by more than 60,000 persons. In addition, Boeing hiring teams operated in the mid-west and south and signed more than 2,500 workers for Seattle. Fifteen hundreds of these were on the job by Nov. 1 and are included in the net increase of 4,200.

Geuting Sees Big Problems Ahead For Personal Plane Manufacturers

Head of Aero Chamber committee says easily operated, safe and economical lightplanes can be produced but declares industry faces challenge in meeting all requirements.

Problems confronting the small or light airplane manufacturer—much discussed and much written about—are clearly defined in a disclosure of the background of the formation of the Personal Aircraft Committee of the Aeronautical Chamber of Commerce.

Fallacies in some reasoning and realistic factors involved have been outlined by Joseph T. Geuting, Jr., chairman of the committee and vice-president of General Aircraft Corp., speaking for more than 50 manufacturers.

▶ Problems—He points out that many persons would have you believe that the problems of the so-called personal aircraft manufacturer are going to be relatively easy to solve; that a ready-made market will exist; that the facilities of this branch of the industry will convert most easily; that the types of aircraft involved will be most easily readied and produced.

Job To Do—"Management, labor and capital must work together to produce a product which the public can buy economically, learn to operate easily, fly with the greatest possible safety, and at a low cost permile.

"It isn't so simple," he added, "but we can accomplish it and thus build a business with almost unlimited possibilities. We can do it—and scientific development is certainly making it possible within the near future, if not now. The manufacturer will have a product which the distributor and dealer organizations can sell, which the service organizations can serve and which the public can buy and operate."

Start from Scratch—Geuting discussed statistics on post-war aviation, noting that they can be either helpful or deceiving, depending on their application and interpretation, and said the unknown factors in available statistics greatly outweigh the known factors. Personal aircraft business before the war was so small "we may well say we are going to start from scratch and that we have a large and most intriguing potential."

▶ Big Expansion—Geuting pointed out that wartime expansion by manufacturers of the smaller and lighter planes has been proportionately as great as that of the builders of big bombers, fighters and transport planes.

NAA Speaker—Geuting spoke before the National Clinic of Domestic Aviation Planning, sponsored by the National Aeronautic Association at Oklahoma City.

Asks More Airfields—He called for cooperation with the government in development of adequate landing facilities for all types of aircraft, particularly those in personal use, and in attaining "constructive regulatory rules which experience will show are in the best public interest."

▶ Can't Depend on Glamour—He pointed out that aircraft for personal use will have to compete with the particular appeals of various forms of transportation and said that "the glamour of flying has sales appeal but we cannot make a business out of glamour."

of transportation," he added. "Personal aircraft in peacetime must have utility, and utility means much more than just the aircraft. It means many and convenient landing facilities, simple, easily understood and unhampering regulations, and practical weather and navigational aids."

Opportunities Unprecedented—The opportunity for the manufacture and sale of personal aircraft and the development of many related industries will be without precedent.

"Airplanes are just another form

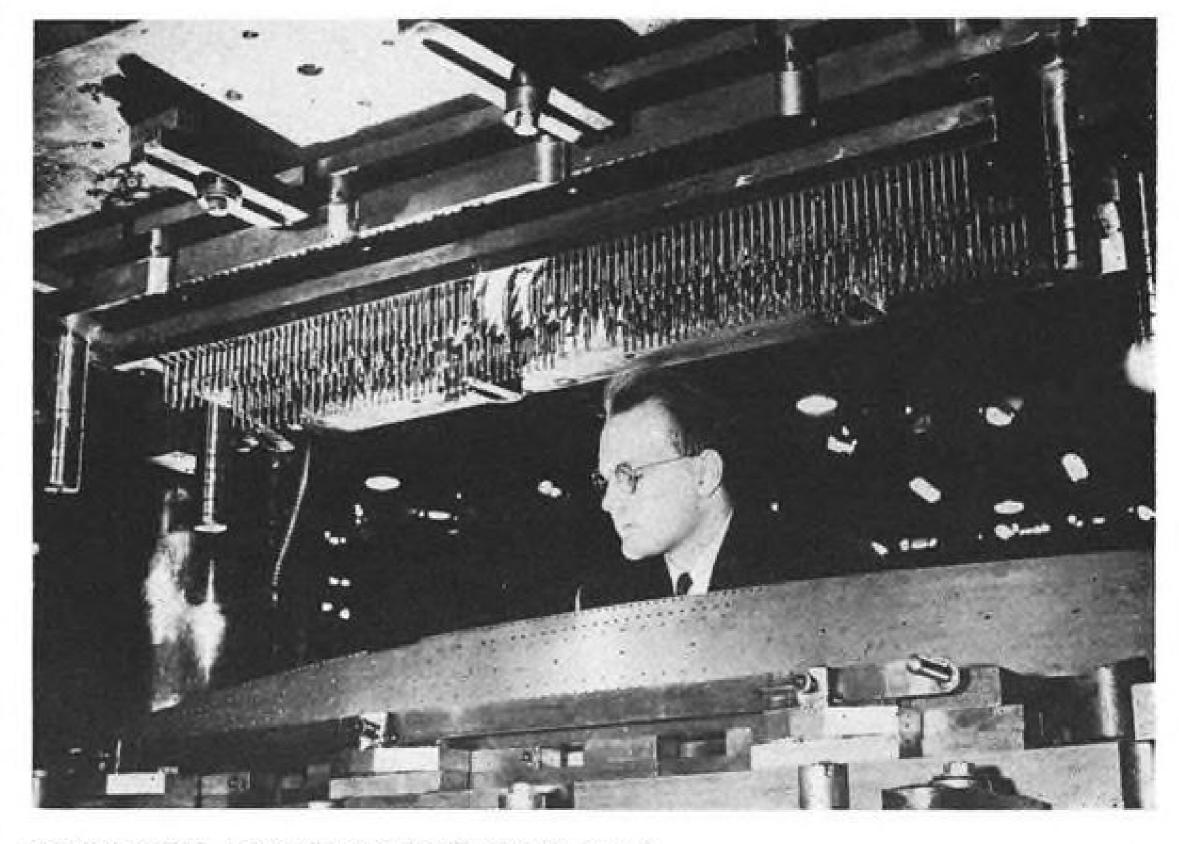
"But there also looms on the postwar horizon," he said, "the opportunity to fail miserably and to disappoint the millions who will be patiently awaiting the coming age of flight."

AC Builds Bombsight

Spark plug company starts volume production on new mechanism.

Manufacture of a British-designed bombsight is now in volume production by the AC Spark Plug division of General Motors for use on British constructed and lend-lease bombers.

George Mann, Jr., general manager, said the bombsight is especially valuable for night operations and low altitude bombing, as it permits maximum maneuverability of the



BOEING'S NEW PORCUPINE DIE:

This giant hydraulic press is capable of punching 388 riveting holes in a single stroke. It is a new Boeing-developed die turning out parts ready for riveting 30 times faster than previous methods. Parts made by the die are riveted together to form the bomb bay catwalk of the Flying Fortress. Shown is John Crabill, of Boeing's tooling department, who developed the porcupine.



Aircraft Power Plants

Fundamentals, concepts, facts, and working data which provide a good background of information on aircraft engine design, testing, installation, operation, maintenance. Discussing current engine construction, both American and foreign, it covers basic operating principles and testing, includes complete treatment of installation, design and testing and detailed discussion of propeller theory, construction, and installation. By Arthur P. Fraas, Instructor in Aircraft Engines, New York University. 482 pages, \$4.50.

Aircraft Hydraulics

A complete book on hydraulically controlled power operations in aircraft, bringing together material to enable you to design any type of hydraulic unit. Covers the whole hydraulic system of a modern airplane from standpoint of basic principles and general rules of aircraft hydraulic engineering. The actual design of hydraulic systems, design procedure, design units—both common and special purpose—are covered thoroughly. By Harold W. Adams, Douglas Aircraft Company. 150 pages,

Aircraft Electrical Engineering

Provides full background of information necessary for developing entire electrical system for modern aircrast-from working out efficient arrangement of equipment and controls to solving radio interference and aircraft lighting problems. Covers factors that effect designing and installing electrical systems in airplanes, explains purpose and functions of equipment, and provides current information on new developments in electrical devices, methods and procedures. By Randolph Matson, Project Engineer, Douglas Aircraft Co., 372 pages, \$3.50.

Stress Analysis for Airplane Drafts-

Taking as basis a large number of problems from existing airplane designs, this book reviews principles of applied m:chanics-familiar to draftsmen in many fields-and shows how to use these principles in gaining an important understanding of stress analysis, sufficient to evolve an approximately correct design and to solve a great number of everyday airplane structural problems. By E. J. Greenwood and J. R. Silverman, United Aircraft Corp. 291 pages, 177 illustrations, \$3.00.

Mathematics of Flight

Brings you not only all essential mathematics required for aviation training, but also fundamentals of aerodynamics from a mathematical viewpoint. Contains selected topics in algebra, geometry and trigonometry needed by pilots. Nontechnical explanations and many clear illustrations. A complete home-study course. By James Naidick, Manhattan High School of Aviation Trades. 409 pages, 397 illustrations, \$2.75.

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| the | id me the books checked below for 10 days ex- ination on approval. In 10 days I will pay for books, plus few cents postage, or return then tpaid. (Postage paid on cash orders.) |
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aircraft. All variables, wind, ground speed, etc., are instantaneously made by the computer and transmitted to the sighting head.

▶ Complex Mechanism — A highly complex mechanism, the bombsight has 4,200 parts and in addition tolerances are rigidly held to from .0002 to .0008, depending on the function of the part.

The firm accepted the job of putting the bombsight into mass production and received the first order for five experimental models early in 1942. The first was completed and delivered six months later.

Chamber Meets Dec. 2

Annual meeting of the members of the Aeronautical Chamber of Commerce of America will be held in Washington at the Hotel Statler Thursday, Dec. 2.

It is expected that the membership will settle many of the problems involved in the Chamber Reorganization, with particular reference to enlargment of the economic development department as outlined by the meeting of the Economic Development Committee, S. W. Voorhes, of Lockheed, is chairman.

Members are still seeking an executive to head the Chamber.

Chinese Plane Plant

Sixty-five Chinese boys are working at Douglas Aircraft's Santa Monica plant. Preparing for the all-Chinese factory, this group is being taught the intricacies of assembling the control surfaces of the A-20.

New Aluminum Plant

Chevrolet starts production at Anderson, Ind., forge unit.

Production has started at Chevrolet's new aluminum forge plant at Anderson, Ind., fourth such unit in the division's manufacturing system.

M. E. Coyle, general manager and vice-president of General Motors Corp., said the new plant, formerly a wire mill, will raise Chevrolet's aluminum aircraft forgings capacity to a new peak.

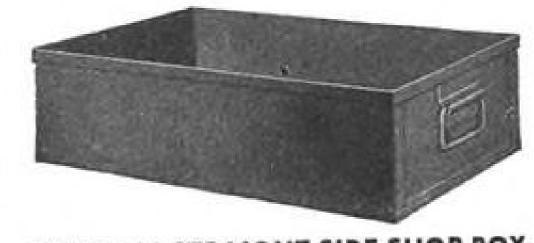
During the past year, millions of pounds of aluminum forgings a month have been delivered by Chevrolet to aircraft manufacturers and to its own plants producing Pratt & Whitney engines.

BRIEFING

- War Department announced the Second Bomber Command at Spokane, Wash., and Twentieth Bomber Command at El Paso, Tex., have been absorbed by the Second Air Force at Colorado Springs, Colo. The move reduces administrative overhead and frees more men for overseas duty.
- B. P. Lester, Rohr Aircraft Corp. vice-president, believes California in general and subcontractors in particular will be hardest hit in post-war adjustments in the aircraft industry.
- Hayes Manufacturing Corp. has received a subcontract for wing and tail subassemblies for Bell Aircraft Corp. and is negotiating a further contract with Bell.
- Lieut. Gen. William S. Knudsen. war production chief for the War De-

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AMERICAN

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partment, has completed a 28,000 mi. inspection trip through the Southwest Pacific, made in a special Liberator Express transport. He averaged almost 1,000 mi. daily for 30 days.

- ▶ Royal Air Force is using Vultee Vengeance dive-bombers on the Burma front, first time RAF has employed dive-bombers and a senior Royal Air Force Officer said it had proved a valuable weapon in the jungle. The Vengeance is produced for RAF by both Vultee and Northrop.
- A new production system in the Handley-Page Aircraft Co. has reduced the number of days needed for construction of the 25-ton Halifax bomber from twelve to seven. The present bomber is a strengthened and improved version of the Halifax (product of 15,000 drawings) which first rolled off the assembly line during the days of England's 1940 blitz.
- The troopship Gen. William Mitchell, named for the aviation pioneer, was launched at Kearny, N. J., last week. Fifth transport of this new type, the ship was christened by Billy Mitchell's widow, Mrs. Thomas H. Byrd.
- Air Force in India, has been named assistant chief of staff, Intelligence, Army Air Forces. He succeeds Brig. Gen. Edgar P. Sorensen, who has been given an unannounced assignment. Gen. Bissell served as commanding general of the Tenth Air Force from Aug. 18, 1942, until Aug. 19, 1943, and commanded all troops in the Asiatic theater of operations from Aug. 18, 1942, to Dec. 1, 1942. He is rated as a command pilot, combat observer, and technical observer.
- ▶ Growth of Naval aviation is pointed upward, according to Rear Admiral Ralph E. Davison, assistant chief, Bureau of Aeronautics, who said that in 1940 the Navy had fewer than 1,800 airplanes and in July that year received only 25 new ones. In July, 1943, he said, the Navy took delivery of 2,000 of the most modern airplanes.
- ▶ W. T. Piper, president of Piper Aircraft Corp., told women pilot trainees at a graduation ceremony at Sweetwater, Tex., training base that "women and light airplanes started off together in this war; the Army Air Forces could see no need for either. Now the Cub Grasshopper has proved its liaison value in every theater of war and the Women's Airforce Service Pilots (WASPS) trained in Texas have won the admiration of all by their fine noncombat flying record." Five former Piper employees were in the graduating class.
- A high-speed production line for repairing damaged airplanes has been set up in England by Maj. William Arnold, one-time big league automobile race driver and winner of the 1930 Indianapolis Memorial Day race.

PERSONNEL

Stephen Fitzgerald has been named director of Public Relations for Bell Aircraft Corp., succeeding Fred Neely who resigned recently because of ill health. Fitzgerald's headquarters will be Buffalo, with a Washington office and representative to serve the capital. Fitzgerald resigned as assistant director of the Office of War Information's Domestic Branch to take his new post.

Prior to joining the government in 1940, Fitzgerald was on the staff of the Baltimore Evening Sun. In 1939-40 he took leave to accept a Nieman Fellowship at Harvard. He joined the government under the Office for Emergency Management as an information specialist on priorities. Later he was director of information for the War Production Board before going to the Office of War Information.

Maj. Gen. Clayton L. Bissell, for- Paul A. Scherer (photo) has been apmer commanding general of the Tenth pointed chief of the engineering and



transition office of the National Defense Research Committee, of which Harvard's president James B. Conant is chairman. Scherer has been granted indefinite leave of absence from his position as re-

search executive for AiResearch Manufacturing Co., Los Angeles. The committee is a unit of the Office of Scientific Research & Development established by executive order of the President three years ago. Because of

its potential influence on postwar engineering developments, this assignment will be closely watched by the aviation industry.

Ed. B. Johnson (left), district traffic manager at Kansas City for TWA, has been advanced to assistant to the Mid-





West regional manager. New assistant to the Western region manager is Clancy W. Dayhoff (right), manager of the public information department in that region.

Reuben H. Fleet (photo), who organized Consolidated Aircraft Corp. after



resigning from the Army in 1923 with the rank of major, has been elected president of the Institute of Aeronautical Sciences. Fleet was president of Consolidated until 1941, when he sold his interest to

Vultee Aircraft. He has continued with Consolidated-Vultee as a consultant. His predecessor at the Institute



CONVAIR FOREMEN MEET:

A meeting of the Foreman's Club of the Fort Worth division of Consolidated Vultee Aircraft brought two important company executives from San Diego. Here, George J. Newman (center), Fort Worth's division manager, hears a tale from president Harry Woodhead (right), as board chairman Tom M. Girdler listens in.

Fred Neely, formerly Washington representative for Bell Aircraft and widely known aviation writer, underwent an operation recently at Johns Hopkins Hospital, Baltimore, where he is convalescing.

John G. Dyer, traffic representative for Transcontinental & Western Air, at



Indianapolis, has been promoted to district traffic manager, succeeding Howard Goodrich, Jr., who has been recently transferred to the Kansas City office as traffic training supervisor.

Lawrence H. Cooper, former director of field operations of Consolidated Vultee Aircraft at San Diego, has been appointed manager of the Elizabeth City, N. C., division. He has been with Consolidated Vultee since 1943 and was once with the American Petroleum Co. as an engineer in charge of aviation lubricants and sales. He succeeds D. C. Beatty, resigned.

New commanding general of the Caribbean wing of the Air Transport Command is Brig. Gen. Edward Harrison Alexander, since February, 1942, in charge of ATC operations in the Far East, Before that, he was executive officer of the ferry command. He succeeds Brig. Gen. Vincent J. Meloy, whose new assignment has not been disclosed.

William J. Lawson, former Texas secretary of state, has been appointed special representative for Braniff Airways, with headquarters at Dallas. He will spend most of his time traveling to cities on proposed new routes for which the airline has applied to CAB.

Once turned down by the AAF, Chesley G. Peterson, who joined the RAF as a pilot, has been made a colonel. At 23, he is probably the youngest colonel in the U. S. Army, having been transferred to the 8th Air Force when it was established in England. His record over Western Europe includes nine German planes shot down, seven probably destroyed and five damaged.

H. Hauffaire, former personnel director of Aerco Corp., Hollydale, Calif., has been appointed to the company's newly created post of director of industrial relations. He is succeeded by Charles Young. Charles Crowther recently was named plant superintendent.

Robert B. Riordan, has been named supervisor of TWA's traffic training staff. He has been traffic manager at Wichita and is succeeded there by Joseph F. O'Keefe.

Two appointments were announced at the Nassau plant of Sperry Gyroscope Co. Walter Welsby-Worth was named manufacturing engineering information leader; J. J. Stunzi was appointed assistant plant production control superintendent.

David Beecroft, for the past 15 years with Bendix Aviation Corp., died Nov. 5 in South Bend, Ind. He had served Bendix in various executive capacities. At one time he was a member of the board of directors and assistant secretary. For many years before entering the aviation field, Beecroft was a pioneer in the automobile industry. He had been editorial director of Motor Age, Motor World, Automotive Industries and other publications, and was a past president of the Society of Automotive Engineers.

A newly organized plastics and chemical sales division of Goodyear Tire & Rubber will be headed up by Herman R. Thies, assistant manager of the Goodyear Research Laboratory, with

the company for 13 years. Other members of the new division are Robert D. Vickers, R. S. Sanders and Eileen Marshall.

Northeast Airlines announce three promotions, effective simultaneously: John T. Griffith becomes operations manager for both the Atlantic and commercial divisions of the airline; Howard D. Ingalls is named vice-president in charge of engineering and maintenance, and John A. Reece is appointed director of Northeast Airlines pilot training division at Burlington, Vt. Griffith joined Northeast in 1939 as chief pilot. Ingalls joined the line in 1941 as maintenance superintendent. In 1938, when he was maintenance superintendent for American Airlines he won Aviation's Maintenance Award. a coveted prize, on the basis of keeping more airplanes and more engines functioning than any other air transport organization in the world. Reece. formerly was affiliated with Continental Airlines at Denver.

J. Reay Jones (left), assistant personnel director of Transcontinental & Western Air, has been named assistant to V. P. Conroy, traffic vice-president. He





has been with TWA for twelve years. Concurrently appointed sales manager was Clyde S. Fullerton (center), director of traffic training, previously district manager at Los Angeles. He is succeeded by Louis P. Marechal (right), field representative on the training staff, once district manager at Philadelphia.

The new secretary-engineer of the Maryland State Aviation Commission is Maj. Paul V. Burwell, commissioned by the Maryland National Guard. Also appointed to the Commission was William Kenneth Ebel, vice-president of Glenn L. Martin Co., in charge of engineering.

A newly created post of assistant to the Central Region manager of TWA goes to Vernon L. Gunn, district traffic manager at Dayton, formerly in the same capacity at Amarillo, Tex.

Carl Cover, former executive vicepresident of Douglas Aircraft and an
engineering test pilot, has been promoted to lieutenant colonel and is serving at Wright Field as officer in charge
of all modification. He succeeded
Col. B. L. Boatner, now assistant chief
of the production division.



Robert James Minshall

At 17, Robert James Minshall a junior in High School, made his first solo flight. It was in a hydroplane on Puget Sound.

Now at 45, he is president and general manager of Pesco Products Co. (formerly Pump Engineering Service Corp.), Cleveland, and also of McCullough Engineering Co., Milwaukee, both divisions of Borg-Warner Corp. These almost 30 years in aviation have made him a veteran as ages are reckoned in this business, and behind his six feet of height and 200 lb. of brawn is a powerful amount of youthful energy and friendliness.

Worked for Boeing—Minshall started to work with Boeing Airplane Co. in 1918 on a part-time basis while attending the University of Washington. Starting as a blueprint clerk, he worked up to vice-president in charge of engineering and a member of the board of directors. In 1941, he left to join Pesco.

Several important aircraft developments are credited to Minshall. He helped design the first flying boat used in international air mail service. He supervised the engineering of the Boeing 247 in 1930, which featured the revolutionary low-wing catilever construction and retractable landing gear. He directed development of the B-17 in 1933, first American four-engine plane.

His awards include the Wright Brothers Medal in 1937 for outstanding contributions to commercial aviation and, in 1940, the Musick Memorial Trophy presented by the government of New Zealand for his "contribution to the safety of air travel with special reference to ocean avigation." Minshall is a member of Tau Beta Phi and Sigma Xi, honorary engineering societies, a Fellow of the Institute of Aeronautical Sciences and a member of the Society of Automotive Engineers.

Pesco Products Co. is a major producer of aircraft pumps. McCullough Engineering, a relative newcomer to the aircraft and automotive field, manufactures superchargers of the centrifugal type for aircraft engines and cabins.

FINANCIAL

Investment Service Takes Cautious View of Airline Stock Prospects

Moody's recommends two selected issues but investors are advised to be conservative; CAB developments are not included in survey.

By ROGER WILCO

The airlines received special treatment in a recent issue of Moody's Stock Survey.

Investors are cautioned "not to proceed hastily from an industry outlook of spectacular expansion to purchase of any stock representing an air transport company. The process of growth of air line service, national and international, will spread over a fair period of time. Risks attending stock investment in the early period of development of a new and growing industry are always sizable."

bliscusses Future—The position of the industry is discussed in very general terms. The investment service sees no scientific or mathematical basis on which to estimate the future growth of the volume of air passenger and freight traffic. The great advantage accorded air transportation is speed. This is represented as being opposed by several factors: higher costs, greater "fear of accidents" and the immediate inability to develop a well-integrated feeder system.

The speed and cost elements have, of course, been recognized in their proper perspective by all sound aviation observers. Nor is there anything new in Moody's belief that "profit margins are likely to shrink due to rate reductions, voluntary and under government pressure, but both passenger traffic and volume of freight shipments should increase at more than compensating rates. . . . " ▶ Brief Mention of Foreign Routes— The competitive position of the group, in both the domestic and international field, come in for a brief mention in the analysis.

The investment service concludes its review with the observation that: "Price stability in this type of holding is . . . not to be expected. Such factors as the development of competition, domestic as well as international,

the trend of costs, the need of technical development, the degree of governmental control and the allocation of new routes will play their part in producing probably wide price swings in air transport stocks over the period ahead. But the certainty of large scale growth in service and facilities and the competitive position of the companies whose stocks we have selected for purchase suggest that the eventual results of current investment in this industry will be satisfactory."

Two Stocks Suggested-With the usual qualifications found in investment practice, the two stocks reconimended are Eastern and Pan American. Nothing specific is said of any of the other airlines. Much is made of Eastern's New York-Miami route. It is asserted that Eastern's present routes give it good protection against possible competition for north-south traffic on the east coast. Nothing is said in the analysis about the CAB examiner's report of Mar. 30, 1943, recommending that National Airlines' service be extended from Jacksonville. Florida, to New York City. Should the full board approve this recommendation, Eastern will be faced with active competition all along the Atlantic seaboard and will lose its existing favorable position.

Speaking of Eastern, J. S. Bache & Co., a N. Y. Stock Exchange firm, in a market report, also takes a favorable view of Eastern and estimates that the carrier's profits this year may reach \$5.40 a share, which would be the highest for any year since incorporation. This projection merely doubles the results for the six months ended June 30 when the company earned \$2.73 per share. No adjustment is made for the seasonal characteristics of Eastern's operations nor of its higher costs. These factors and income tax adjustments make the \$5.40 estimate a highly optimistic one.

RYAN AWARDS SERVICE PINS:

Two ten-year pins and two three-year service awards went to four executives of Ryan Aeronautical Co., San Diego, recently. Recipients lined up with president T. Claude Ryan (center) are (left to right): Will Vander-meer, chief project engineer; Millard C. Boyd, chief development engineer, received ten-year pins; Ryan; G. E. Barton, factory manager; and Eddic Molloy, vice-president in charge of manufacturing, received three-year pins.

PAA Studied—In suggesting Pan American Airways, Moody's says that the company's "competitive position appears strong since the outlook is for a good deal more international competition for trans-North Atlantic than for trans-South Atlantic and trans-Pacific traffic."

This statement is subject to considerable question when viewed in the light of pending applications for international routes indicated by domestic and foreign carriers. Further, these air services across both the Atlantic and Pacific are being proposed by interests who have access to the resources necessary to do the job. Of course, their ultimate success in entering the field is far from assured, but the threat exists and can hardly be ignored.

Forecasting Is a Problem—Forecasting future investment trends is never an easy task—particularly for an industry as unpredictable and volatile as air transportation. On Oct. 19, 1942, Moody's said:

"Income from airline equities as a group does not promise to be of significant importance as an inducement . . . over the more immediate future. . . . A diversified list of airline stocks qualifies for retention on the basis of the excellent long-range (post-war) outlook for the industry, but the present is not regarded as an opportune time to enter this industry with new funds."

Shortly thereafter, airline stocks experienced one of the sharpest appreciation gains in their history.

Not alone in its adverse prognostications. Other investment advisory services took the same tack and were equally wrong.

All this merely proves that there is no assurance of picking a sure thing in the market, least of all among the airlines. But it is amidst periods of great uncertainty that substantial profits are made and serve as a compensating consideration to the high risks inherent in the investment status of the group.

Financial Reports

tion statement filed with SEC covers proposed sale of 45,000 shares or \$4,500,000 of cumulative preferred stock, subject to approval of holders of the prior preference and common shares at a meeting called for Nov. 15 at Cleveland.

Proceeds would be used to retire the present outstanding convertible prior preference stock and to pro-

vide additional working capital with a view to peacetime requirements. There are 25,660 shares of the prior preference stock outstanding.

▶ Packard Motor Car Co. reports consolidated net profit of \$3,049,274 after charges and provision of \$15,-088,000 for income and excess profits taxes after deduction of \$1,476,590 for postwar tax refund for nine months ended Sept. 30.

The net is equal to 20 cents a share on 15,000,000 shares of capital stock. This compares with a net profit of \$3,272,376 or 21 cents a share for the nine months ended Sept. 30, 1942, when federal tax provisions amounted to \$6,276,000.

Sales and billings for the first nine months of this year totaled \$251,-874,429 as compared with \$145,577,-628 in the same period in '43.

▶ Borg-Warner Corp. and subsidiaries report for nine months ended Sept. 30 showed net profit of \$7,-348,588 after depreciation and provision for \$40,629,444 for federal and Canadian income and excess profits taxes—subject to audit and year-end adjustments.

The net is equal to \$3.15 a share on 2,333,730 shares of capital stock outstanding. Current assets as of Sept. 30 were listed as \$101,176,133 and current liabilities after deducting \$29,955,423 of U. S. Treasury tax notes from the income tax liability were \$64,390,391.

Delta Airlines for the year to June 30 reported net income of \$403,997, or \$2.04 a common share against \$358,602, or \$1.81 a share in the preceding fiscal year.

Northrop Aircraft, income for the year to July 31 reported net income of \$1,249,535 as compared with \$3,-044,741 for the same period in '43.

National Airlines Stock Data Shown

Annual report lists holdings by directors and salary figures.

Annual report of National Airlines, Inc., of Jacksonville, Fla., for the fiscal year ended June 30, 1943, shows G. T. Baker, president of the company owns 40.16 percent of its common stock, representing 108,442 shares, as of Sept. 30, 1943.

Lehman Brothers, New York, was the next largest owner of common stock with 28,104 shares, or 10.41 percent.

Other Shareholders—The balance of 133,454 shares was owned as follows: H. S. Parker, Jr., vice-president, 12,250 shares; William K. Jacobs, Jr., director, 1,700; E. J. Kertholders—the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the stage of active service against the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the stage of active service against the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the stage of active service against the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the stage of active service against the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day-bombing qualities yet concentrated in any day bomber which has yet reached the first power full combination of day bomber which has yet reached the first power full combination of day bomber which has yet reached the first power full combination of day bomber which has yet reached the first power full combination of day bomber which has yet reached the first power full combination of day bomber which has yet reach

shaw, vice-president, 500 shares owned jointly with G. T. Baker; D. G. Bash, treasurer and director, 1,000 shares owned jointly with G. T. Baker; H. R. Playford, director, 1,600; Paul Poynter, director, 100; J. A. Waterman, director, 254; R. P. Foreman, secretary, 25 shares.

The report showed the highest salaries paid during the year were: G. T. Baker, \$19,066; E. J. Kershaw, \$11,799, and Joseph Bailey, \$10,765.

Masefield Revises Stand on U. S. Planes

Arch critic at beginning of war pays tribute to American precision bombing.

Peter Masefield, editor of The Aeroplane, British aviation magazine, who at the beginning of the war led British press criticism of American air power, pays high tribute to the quality and performance of our aircraft in the current issue of Consolidated Vultee's magazine Plane Talk.

His reversal of opinion follows a tour of aircraft plants in the United States and a close acquaintance with American warplanes in combat.

Dovetail—"At one time," Masefield says, "we in England did not realize the potentialities of American preciso-pattern bombing by day, just as many people in America have not realized what could be achieved by night area-bombing as practiced by the RAF. Now that we have experience of each in combination side-by-side we realize that the two dovetail as though originally designed to go together."

Masefield said that as months went by, after the arrival of the first American planes in Britain, "American airpower fulfilled its promise. It began to show its quality in action." He mentioned that by the time our planes began to flow across the Atlantic in some numbers, the battle against the German submarine had begun to take a more serious turn and "once again American airpower came to the rescue." ▶ Lauds Liberator — Masefield said that "having had the pleasure and encouragement of watching these planes with their greatly increased armament flowing from the factories at San Diego, Fort Worth, Dallas and Willow Run, I am convinced that they represent the most powerful combination of day-bombing day bomber which has yet reached the stage of active service against

TRANSPORT

Overseas Travel Revenue To Exceed Cargo by Big Margin, Study Shows

Air Transport Association's research chief, cites possible annual traffic flow of 50,000 to 75,000 tons each way three to five years after the war.

By MERLIN MICKEL

Development of overseas air cargo traffic after the war will warrant the required effort despite bleak international trade prospects attributable to rehabilitation needs, the unbalance of the nation's export-import trade, and rate differentials between air and surface carriers.

This is the studied, conservative conclusion set forth in a preliminary survey by Dr. Lewis C. Sorrell, research and planning director at the Air Transport Association. Representing his views only, and authenticated with his own tables, the study has been sent to a picked list of aviation executives by the ATA, with the comment that it has not been examined by the association or its members.

Pother Reports Planned—Similar reports on passengers and mail are to follow. He has gone thoroughly into foreign trade data, detailing commodities and countries of origin or destination, rates, weights and charges, listing hundreds of items in a score of tables. They range from books, boots and shoes through clothing, drugs, jewelry, musical instruments, live animals, food (fruit juices to pistachio nuts) and other items to watches and vacuum cleaners and X-ray equipment.

"Allowing for the imponderables in the international situation which will affect the time required for the attainment of expectations," he writes, "there is a potential overseas air cargo traffic that is worth the effort required to develop it. It may amount to 50,000 to 75,000 tons of valuable commodities per year each way, in both the import and export trades, when sufficient order has been restored to permit the usual course of world trade. That period of time is conceived to be within three to five years after the termination of the conflict.

"While the revenues obtainable from overseas air cargo will probably be far below those resulting



Dr. Lewis C. Sorrell

from the passenger business they will not be negligible, and they can be increased. This estimate includes no allowance for military air traffic which may accrue to the airlines, nor any for such rehabilitation traffic as governments may assign to the airlines more or less regardless of cost."

▶ Work for Air Cargo, Inc.—Dr. Sorrell suggests four supplementary steps to give his preliminary and provisional study needed verification, the first three of which would be performed by Air Cargo, Inc., airlines-sponsored agency to study freight transportation by air.

He proposes that trained investigators spend several months in obtaining from producers, importers and exporters data on the various commodities so painstakingly listed in his tables. He urges determination of types of service and kind of rate structures—such as express rates or classified freight rates—that should be developed, and advocates, simultaneous with the field studies, investigation of insurance requirements and methods of shipping and customs documentation, organizing pickup and delivery service in the

foreign field, and sales promotion at home and abroad.

Some Investigators Now at Work—Some of these three steps, it is understood, have been initiated already by Air Cargo. Dr. Sorrell suggests a year and a half as the time limit for presentation of a program. To avoid duplication, investigators could cover domestic as well as foreign cargo, the data to be divided in a central office.

For his fourth point, he feels consideration should be given to what the airlines might rightfully request in post-war rehabilitation traffic, as a basis for making representations in the proper quarters at the right time."

▶ Speed Prime Factor—Inevitably, the study indicates, speed will be the determining factor in comparison of air transport with surface competitors. Sellers of air cargo service must seek to capitalize on the direct effect of speed on the value of transport service to the user, plus such indirect effects that speed may produce upon marketing and distributive practices and costs.

The air cargo carrier has an advantage of from 6 or 10 to 1 on speed, but the ocean carrier's cost advantage, on the other hand, is 50 or 75 to 1, "even with airplanes promised for 1950, and with costs of 10 to 15 cents per ton-mile." Thus "the major question that confronts the carrier of air cargo is, how much of a premium will the shipper pay for the high speed inherent in air service? And on what portion of the cargo will he be willing to pay it?" Furthermore, the speed advantage of the airline and cost advantage of the steamship both tend to increase with distance. Continuous Flow Vital-Explaining that "commerce depends primarily upon a flow of goods rather than high speed of movement," Dr. Sorrell warns that shippers are more interested in dependability and low cost than high speed and

Cargo Record

United Air Lines reports that in the first two weeks of its new coast-to-coast all-cargo service, record air mail loads have been established, as high as 260,000 letters and 6,500 lb. of mail to a plane. Each ship assigned to the service is carrying about 160,000 letters on United's trans-continental route, not including those to intermediate points.



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tion for leading news media. air preparation for war.

AVIATION NEWS . November 15, 1943



25 yrs, of technical journalism, aviation radio specialist,





tance of women in air transport, as workers, as passengers,

high rates. Historically, the shipper "has not faced the alternatives of low speed-low cost, high speedhigh cost service. Rather he has been obtaining faster service at lower cost. . . . Air transport must develop commodity traffic by seeking out goods that can use that speed, can bear the expense thereof, and whose shippers are willing to incur that cost."

Potential increases in international trading volume will benefit air carrying, "which is regarded as better suited to retail than to wholesale transport." But Dr. Sorrell cautions that revolutions in distribution usually are gradual, and are likely to be slower on an international basis "than in dynamic countries like the United States." Transport enterprises should be aware of such changes and how they may be capitalized, but should not now count too much on their occurrence in estimating cargo expectations.

Less Handling-He foresees possible benefit to air transport from avoidance of cargo rehandling and transfers and cost reduction on packing requirements, suggesting that "certainly air cargo should be able to move from New York direct to London without rehandling in transit, whereas the fastest steamship services have involved transfer at Southampton, and added charges for the land haul to London."

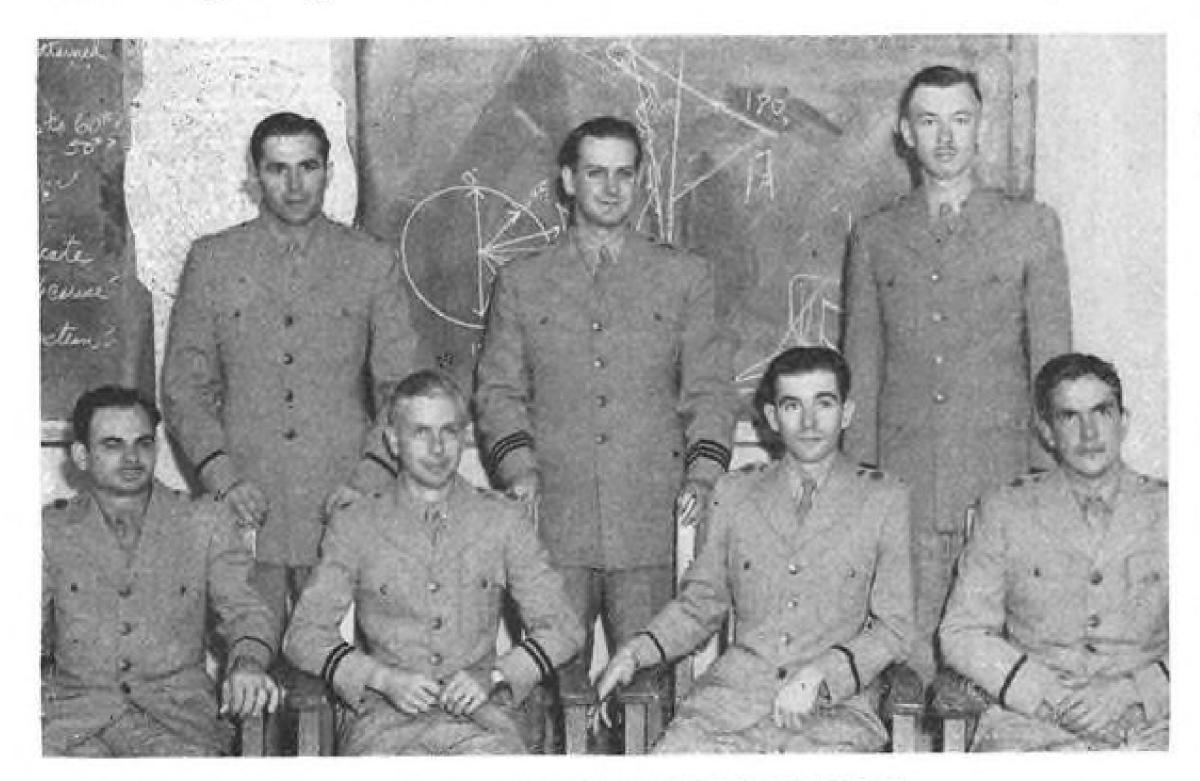
Again, research into stowage methods for air transport may start a wave of packing economies simi-

lar to that in the United States after the first World War, and some of these may be special to air transportation and unsuitable for ocean conveyance. But it is not clear how far international air carriers will be able to penetrate to interior cities in other countries for cargo pickup and discharge.

Therefore, he concludes, these two factors, while they do affect shipper choice of instrumentalities and may be significant if rate levels are not too disparate, "are not sufficient to overcome greatly divergent levels of freight rates."

Air Costs Must Come Down-"Unless and until airline costs reach levels much closer to those now enjoyed by surface modes of transport, the market advantages of 200 miles per hour cannot tip the scales in favor of air carriage for anything more than a small percentage of the total traffic," and "the higher the (commodity) value, the smaller is the proportion which even high freight rates are of the total cost of the article, and the greater the ability of the goods to bear rates which the airlines must expect to charge." Thus "the methodical exploitation of airline cargo markets should begin with the best prospects, which are most likely to be found in the upper register of commodity values."

Luxury Goods—"The international commerce in goods which commercial air transport is best suited to serve—at least so long as its costs remain in the 15-20 cents per ton-



CONTINENTAL'S ATC PILOT INSTRUCTORS:

These men are instructor personnel of Continental Air Lines' ground national despair. It is simply a school for Air Transport Command pilot trainees. Left to right, they are (standing) John P. Mizicko, Chief Instructor Donald R. Wilson, Preston A. Doerfler and (seated) Louis Elson, Philip E. Riddell, Charles O. Peacock and Charles N. Collier.

Football Scores

American Airlines is making less disgruntled its passengers who have had to miss their Saturday football games to keep plane trip schedules.

At every AA landing on its cross-country run, the latest football scores are distributed in bulletins prepared by the airline and kept up-to-minute with the help of National Broadcasting Co.

Yet to come is the standard installation on board airliners of individual radio reception to add to passenger relaxation. Its appearance as a common passenger service will await return of peacetime flight. Some day it may be accompanied by television.

mile range—are not the necessities of life, but the luxuries; not the goods which starving, homeless millions must have after the war, and which are needed to rebuild ruined cities, but those postponable satisfactions which belong to a more comfortable, civilized, and urbane state of society.

"It may be that food and rehabilitation programs, and the agencies that administer them, will allocate some of this traffic to the air carrier. . . . The airlines should be alert to this situation; possibly they may be able to find a rightful place in the effort."

The directional unbalance of our export-import trade will be an increasing problem.

Done Way Traffic?—"United States must export to Europe goods to be carried by railroads, ships, and planes, and import I.O.U.'s which during their tenure—and they will not be repaid-provide cargoes for no form of transportation.

"South America, South Africa, and Australasia for a time may turn to the United States to secure these valuable articles of commerce which they cannot obtain from Europe. But inasmuch as they produce little we can take in return—except agricultural products which collide with our own agriculture — and which airplanes cannot economically carry, the problem of directional unbalance is increased rather than diminished.

"This is not the counsel of interstatement of imponderables and expectables that international air transport must face in the immediate post-war era."

Branch Sees Gains In 1st Peace Year

Main routes will show double 1941 airline traffic, CAB member says.

Twice as many schedules over heavy traffic air routes as were operated in 1941 and an increase in the number of schedules flown over practically all routes—within a year following the end of the war-are forecast by Harllee Branch, member of the Civil Aeronautics Board.

> Speaks at Oklahoma City—Branch, speaking before the First National Clinic of Domestic Aviation Planning at Oklahoma City, said that not only may we expect a greater increase in passenger, mail and express operations, but the inauguration of cargo services on a nationwide scale is assured.

"The view that we must approach post-war planning with sober and sane thinking is shared by most responsible leaders of the industry," he said.

Commenting on recent CAB hearings designed to aid the board in determining plans and policies for a nationwide system of secondary routes, Branch said it seems to be generally agreed that local airlines which connect with trunk airlines will perform a greater public service than airlines which have no such connections, for in that way local lines will feed the trunks and vice

Pickups Practical—The hearings developed, he said, that pickup and delivery devices can be operated on conventional type airplanes with accommodations for a number of passengers and substantial cargoes of mail and express and that it would seem that in the future both conventional types of pickup planes and helicopters could serve local routes.

"It seems safe to predict that there will be numerous charter air transportation services," Branch said. "These will be non-scheduled services and the operators will be equipped with planes and experienced personnel to serve the public need for special air trips of substantial distances."

Discusses Mergers—He noted that the question had been raised as to whether there shall be mergers of financially weak airlines, serving thinly populated territory, with financially strong airlines serving thickly populated territory and discussed arguments on both sides.

Branch said that CAB must see to it that any change in the present pattern will be in public interest and that "it took a position against



WESTERN PASSENGER CHIEFS STUDY MERGER PLAN:

Top men in Western Air Lines' reorganized passenger service met in Los Angeles to study maps showing new cities added to WAL routes by purchase of Inland Air Lines. Newly promoted department members are (seated, left to right) William Kerrigan, assistant superintendent of passenger service, and Russell J. Smith, passenger superintendent. Standing are Phil Pierce, chief passenger agent; Charles Coddington, assistant superintendent of passenger service in charge of training personnel; A. Letcher Seamens, Los Angeles district passenger superintendent, and William Johnson, Los Angeles chief passenger agent.

a regional monopoly in the United-Western Air merger case, and it is required by the Civil Aeronautics act to see that sound competition exists between air carriers."

Should Learn from Railroad Experience — To the question of whether any limit should be imposed on the number of air carriers operating in both the domestic and international fields, Branch said the question might answer itself with a reference to the Civil Aeronautics Act which requires the board to "foster sound, economic conditions in the air transportation services." He said Congress, in giving the board this directive, undoubtedly desired to avoid in air transportation anything similar to the economic tragedy of the short line rail-

Regarding government ownership or control of airlines, Branch said it was his opinion that public sentiment generally is against such a proposition and added, however, that if airlines depend too heavily upon government subsidy they may expect, sooner or later, that there will arise a demand that "if the government pays—then the government must control."

Supports CAB Policy-The question of ownership of the airlines has another factor in the active efforts

of the railroad, steamships, bus and truck companies to get into air transportation. Branch said the board has determined that the provisions of the Civil Aeronautics Act rigidly restrict the participation of the older forms of transportation in the air transport field and this determination is amply supported by well-established Congressional

CAB ACTION

- CAB authorized Transcontinental & Western Air to include Lancaster, Pa., on its transcontinental route AM 2, between Reading and Harrisburg, Pa.
- · Denied was the petition of National Airlines, Jacksonville, requesting reconsideration of CAB's order deferring action on applications of Seaboard Airways (Docket 435), Eastern Air Lines (444), National Airlines (417), and that portion of Pennsylvania-Central's application (653), requesting authority to conduct operations between Rocky Mount, N. C., and Jacksonville, Fla., via Wilmington, N. C., Georgetown and Charleston, S. C. Savannah and Brunswick, Ga. National has further asked for the speedy disposal of these applications, which was also
- CAB assigned new docket numbers to several applications which involved, among others, the cities of Tulsa, Wichita Falls, Oklahoma City, Fort Smith, Little Rock, Memphis and Birmingham, and consolidated these portions into one proceeding for hearing. Parties involved are American Airlines, Braniff Airways, Chicago & Southern Air Lines, Continental Air Lines, Delta Air Corp., Eastern Air Lines and the City of Birmingham,
- Application of TWA as amended (303) for service between Indianapolis and the terminal points Detroit and Cleveland

and application of Mid-Continent Air-lines for service between Kansas City and St. Louis were consolidated with the consolidated proceedings (docket nos. 303, 460, 427, 429, 591, 119, 988 and 1080) which involve also Chicago & Southern Air Lines, Eastern, American and United. CAB denied motion of Eastern Air Lines that the portion of its application (1067) involving Evansville, Ind., be consolidated with this group and refused to re-consider its order which denied consolidation of the Memphis-Corpus Christi segment of Eastern's application (591).

· Further consolidation for single hearing was ordered by CAB on applications for routes between Denver and Los Angeles. Companies involved are Western TWA, United, and Continental.

Canadian Pacific Pushes Plans For World Routes, Despite Obstacles

Steamship and aircraft operator banking on change in government policy to permit participation in postwar flying.

By JAMES MONTAGNES

Undeterred by the Canadian government's restrictive one-line attitude toward international air transport, Canadian Pacific Air Lines is pinning hope on a change in that policy and going ahead with plans for a bid in the postwar international field, however bitter the contest may be.

CPA is a subsidiary of Canadian Pacific Railway, and is a wartime aviation baby operating domestic Canadian air service throughout the in CPR's submission to the Canadian House of Commons Reconstruction and Re-establishment Committee at Ottawa discloses the aim.

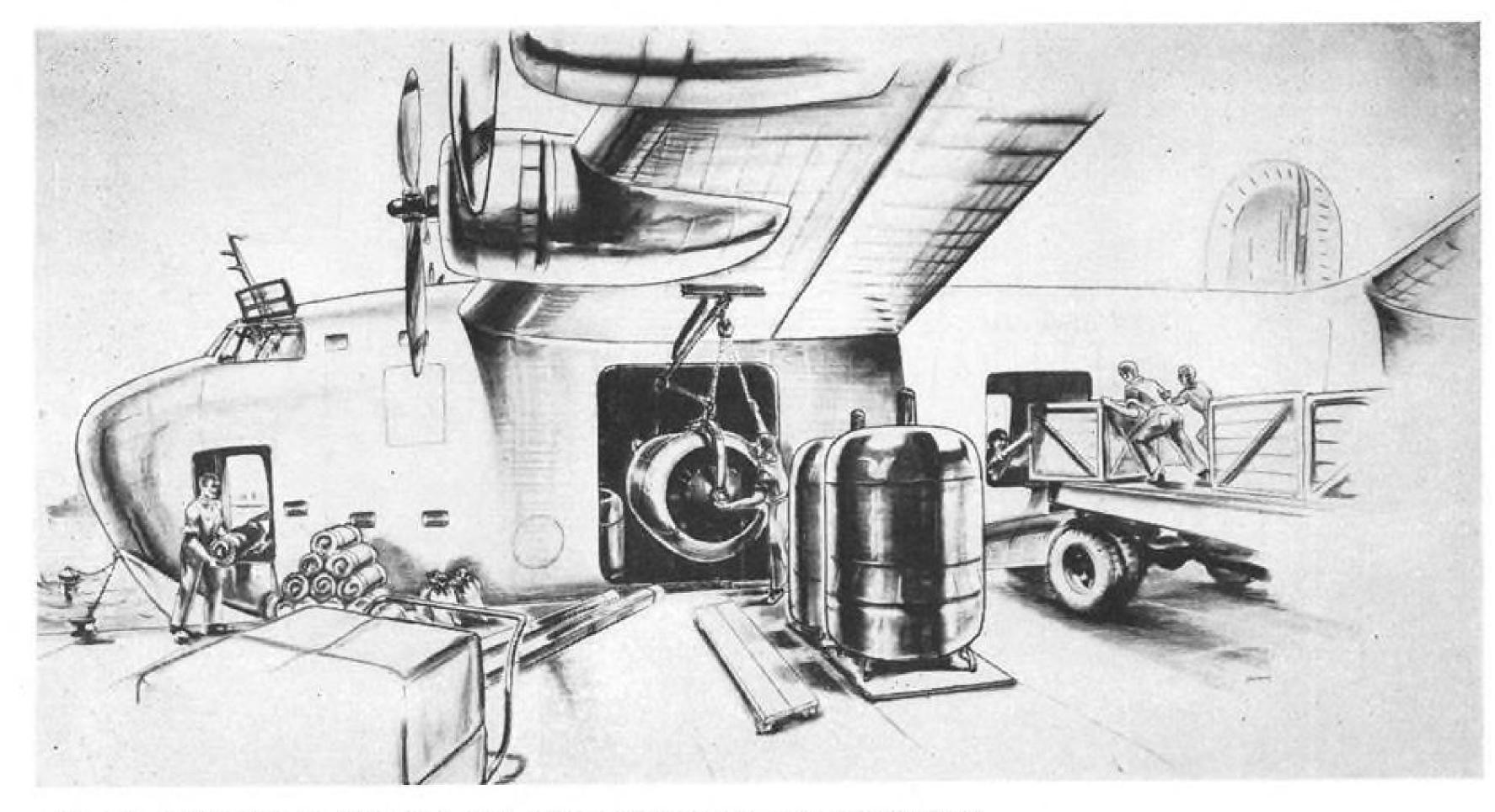
To Expand to Maximum—"It is the intention of the company," CPR said, "to expand its air operations both within Canada and abroad as far and as fast as opportunities offer, consistent with government policy."

Of importance in this connection were recent developments in British steamship circles. The General Council for British shipping is seek-Dominion's northland. A brief line ing expressions from members in- Trans-Canada Air Lines to operate terested in postwar air traffic for international air service from Can-

presentation to the British government. Five companies in South American services have announced they will form a separate company to operate air routes between the United Kingdom, the Continent and South America, and there are indications that the North Atlantic steamship group and possibly the West African Oriental and Coastal groups also will follow the council's lead. Canadian Pacific Steamships is a member of the British Steamship Group.

Pioneered Air Ferrying—CPR, in its report to the committee, pointed out that it pioneered the service which later became the Royal Air Force Ferry Command, and has obtained invaluable experience in trans-ocean air operations. It expects to participate in plans to expand air transport of first class mail, and forecast a new type of tourist and holiday traffic by air. It described itself as "the leading Canadian carrier of commercial air car-

Government Policy Restrictive— Canadian government policy now allows only the publicly owned



FREIGHTERS: NAVY INSTALLS DOORS IN "CORONADO"

The Navy, having found the Coronado PB2Y3 patrol bomber adaptable to cargo, is installing new large cargo doors on the port side of all these aircraft. A Navy spokesman said the installations are being made through modification to avoid production delay. As shown in the drawing, complete engine units can be loaded through the bigger doors. In addition to four of these heavy units below the wing, the plane can

carry several tons of cargo in other compartments. The drawings at right is a cutaway of the interior in cargo use. With a range of over 3,500 miles and a cruising speed of 160 mph, the Coronado built by Consolidated Vultee at San Diego, also is used at times as combination cargo-passenger ship. Seats for 41 passengers can be installed, but the Navy reports that no Coronado is being used for passengers exclusively.

ada. This policy for the postwar period was outlined by Prime Minister Mackenzie King early this summer. While this basic view may not be altered by the present liberal administration or even if a socialistic co-operative commonwealth federation comes into power in the 1945 election (the CCF has been making big strides in the provincial elections this year), it still is possible that the CPR may be called on to help establish some of the international routes.

Rail Policy May Be Precedent-The pooling of railway services by the Canadian National Railways (which operates TCA) and the CPR on a number of heavy traffic runs in eastern Canada since the early days of the depression—and still in operation—was given some weight as a precedent. Some observers, however, pointed out that the situations were not analogous-that the two railroad lines already were established when the pooling occurred and that separate operation was uneconomic, while there is no such existing duplication in international air route policy.

Another precedent was seen in the fact that when TCA was started the CPR was asked to share in the setup, but turned the offer down. It is felt in some circles that there may be a dividing of routes operating from the Atlantic and Pacific coasts in some such shared plan. CPA, because of its current north-south Canadian routes into the Arctic regions, may come in for northern international routes to Asia.

May Operate from Other Bases— And it is speculated in aviation circles that if the CPR cannot come in for a share of the international routes from Canadian soil, its financial set-up likely would allow it to operate air routes from England in competition with other steamship lines which will go into the global air transport field.

Whatever government announced policy may be in the matter, the fact remains that Canadian Pacific is one of the most powerful industrial empires in Canada. As such, it is bound to have some influence on the Canadian Parliament. And it is to Parliament that Canadian National and TCA, government-owned as they are, must look for funds for any expansion program. It would seem, therefore, that CPR's side of the bitter fight many expect to develop will not be ignored.

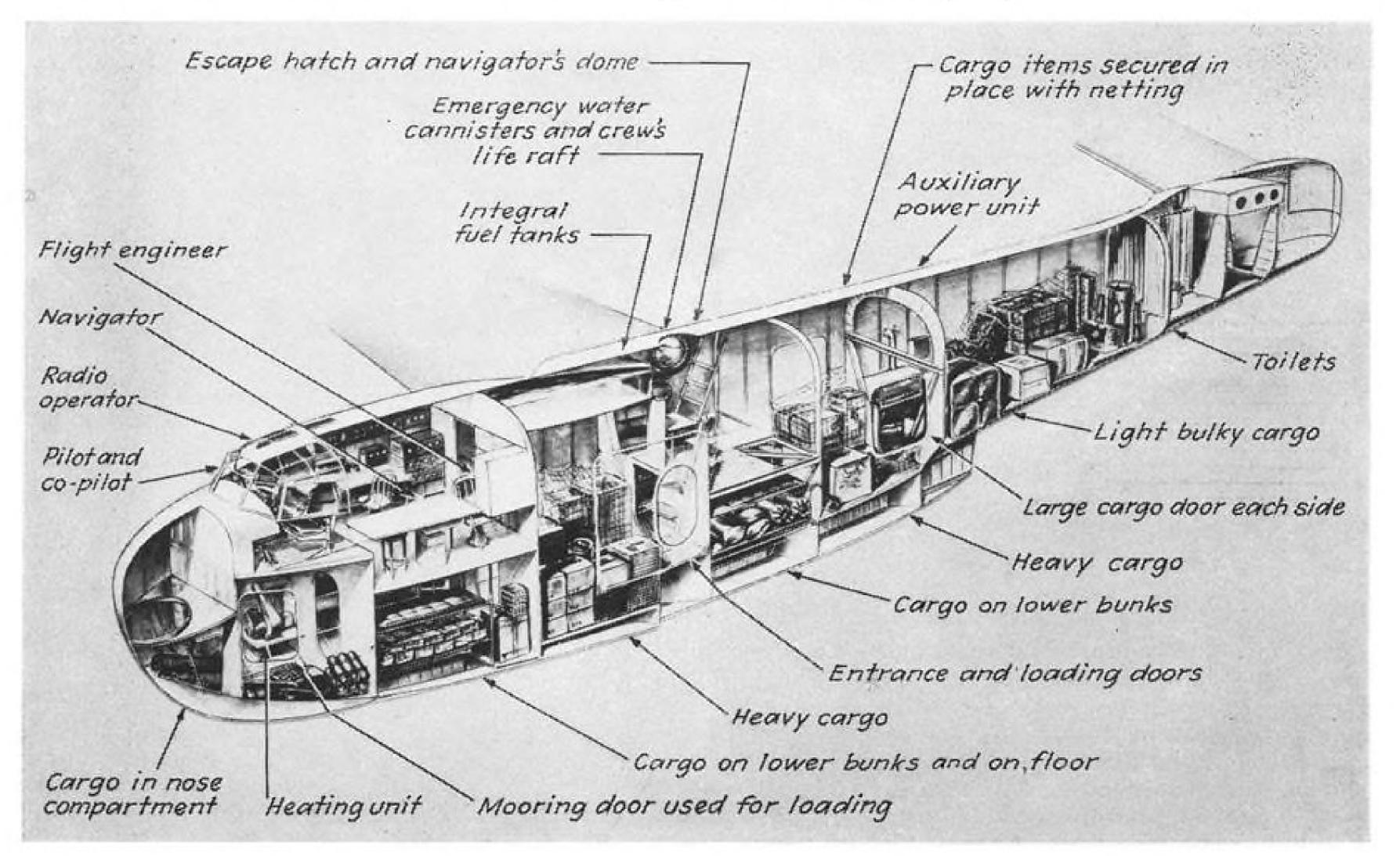
Consolidated Independents—CPA began air transport operations early in 1942 with consolidation of the ten main north-south operators throughout Canada into one organization. At the end of August, 1942, it had 79 aircraft, ranging from such veterans as the Junkers 52 to Lockheed Lodestars on the Yukon run. At the end of August this year, it had 96 aircraft. Policy won't allow official naming of the new aircraft obtained, but they are understood to

include Lodestars and Douglas DC2's on loan from the United States government.

Operations started with men and women already in the service of the ten companies purchased. There were 630 at the end of August, 1942, and a year later their number had more than doubled to 1,384. If personnel at elementary flying training schools operated in conjunction with the RCAF is counted, the number now is over 7,000. Comparison of August, 1942, with August, 1943, show that mileage for the month increased from 438,360 to 739,651; hours flown from 4,619 to 5,738; passengers carried from 5,333 to 8,-158; mail poundage from 87,986 to 156,359, and freight and express from 853,523 to 1,155,485.

More Canadian Routes Sought— While it bides its time on the international air service problem, CPA is understood to have applied for new domestic routes from North Battleford to Regina, Sask., and for local service with numerous stops between Toronto and Montreal, between which TCA runs five flights daily with a stop at Ottawa.

As far as can be learned, CPR has not yet filed any international route application, and just how it will enter the postwar global air transport race it has not yet revealed. But CPA officials frankly feel that some modification is due in the government's monopolistic state air line



United Fruit Co. Asks Air Routes In South for "Integrated Service"

Transportation giant cites past enterprise in improving each new type of carriage, says planes are necessary to replace lost shipping.

Unless it is permitted to establish and maintain a regular and dependable air service in the Caribbean area, United Fruit Co. cannot furnish a complete and integrated coordinated transportation service, the company says in a long-anticipated application to the Civil Aeronautics Board for permission to operate planes in the Caribbean.

Planning to use multi-motor planes, of an undesignated capacity, United Fruit wants to serve most of the points at which its ships call. Routes—Three routes are specified: 1) between New Orleans and Balboa, Canal Zone, with a permissive stop at Swan Island; 2) between the same termini, with stops at any one or more of the following intermediate stops: Merida, Mexico; Belize, British Honduras; Managua, Nicaragua; San Jose, Limon, Quepos, Golfito, Costa Rica; Almirante and Armuelles, Panama; 3) New Orleans to Guatemala City via Merida, Belize, Puerto Barrios, Puerto Cortez, La Lima, Tela and Ciba, Honduras.

▶ Development—In its application, United Fruit gave extensive details of its contribution to and development of the natural resources and agriculture of the countries it serves

through its ships and rail and air subsidiaries.

It spoke of the millions of dollars invested in these enterprises and construction of railways, machine shops, ice and light plants, construction, maintenance and operation of radiotelephone and telegraph systems, of air fields, hotels, guest houses, mess halls and weather and meteorological observation stations on land and sea.

Linked to Air Service—United Fruit also pointed out that many of these present facilities as well as personnel and office space could be used in air service. It stated that airfields existed at most of the points designated in the application, and that the company will install at its own expense such air navigation facilities as may be needed. Calling attention to the history of the company as a pioneer in the development of passenger travel from the time it started with sail boats and schooners, United Fruit stated it has adopted each new and improved type of ocean transportation as it came along.

Many of United's boats have been commandeered by the Government, and some have been lost, so it may be years before the remaining ships

are returned to the company, and adequate steamship service to this area restored. However, if this restricted steamship service is supplemented by efficient airlines, public necessity and convenience will be greatly served, says United Fruit. Puerto-Rico Route - With prehearing conferences on the Latin American-Caribbean area applications scheduled for Nov. 16, another company with interests in this section also filed with CAB. Caribbean-Atlantic Airlines, Inc., San Juan. Puerto Rico, which now operates between San Juan and Christiansted, St. Croix, Virgin Islands, applied for a route between San Juan and Ciudad Trujillo, Dominican Repub-

They further asked that their application be construed as "for any new route or routes . . . which would link Puerto Rico with any point within the Continental U.S., Mexico, Central America, South America, or any of the other Caribbean Islands."

Other applicants last week included Braniff Airways, which asked to carry persons, property and mail on Route 9 from Kansas City to Memphis, via Springfield, Mo. Both express and local schedules on this route were proposed.

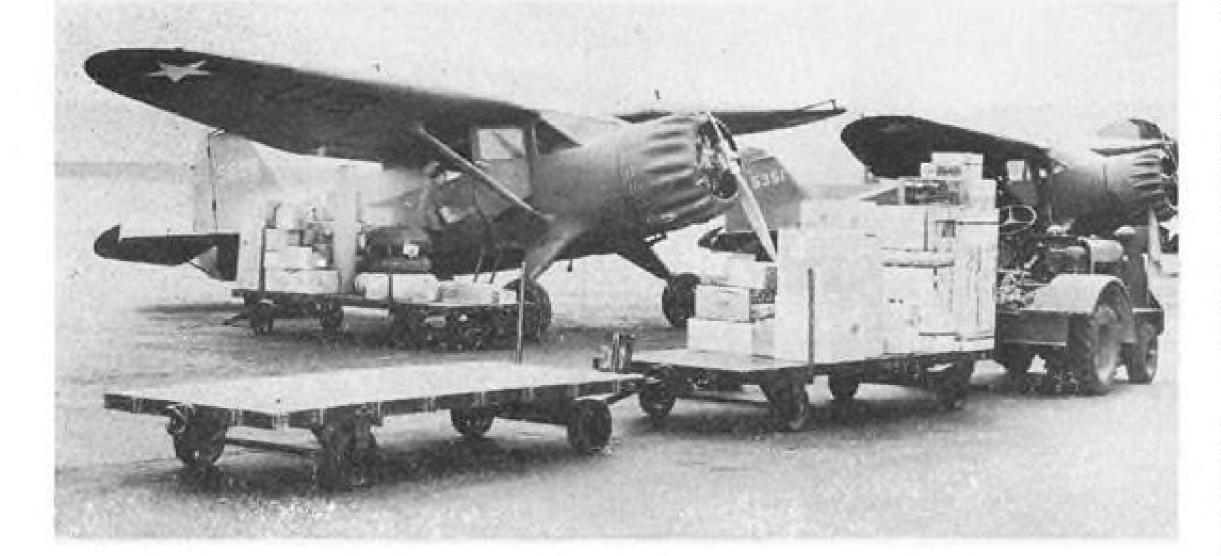
A sight-seeing application was filed by Salt Lake Transit, Inc., Salt Lake City, to carry passengers and baggage on trips to the Grand Canyon, various lakes and national parks around Salt Lake City, in helicopters. The company would also like to provide scheduled service on a route in Utah, Wyoming and Arizona.

Helicopter service from Seattle to Astoria, Ore., was requested by Landon Lawson Clevinger of Centralia, Wash. Pointing out that this section of the Northwest has never been served by air, and that other means of transportation are circuitous or involve lengthy waits at ferries because of the many bays and inlets around Puget Sound or necessitate much ferry service, the applicant would make many stops on this route in places such as Puyallup, Steilacoom, Montesano, Hoquiam and others.

Two routes for freight transportation were sought by Barney and Sadie Garelick of Los Angeles. Planning to use Consolidated "Liberators," the operators, whose trade name is given as New York-Los Angeles Airways, want to carry general commodities and first and second class freight with one flight daily over both a Northern and Southern route.

Black Hills Transportation Co., Rapid City, S D., which previously applied for air service between Great Falls, Mont., and Chicago, filed an amendment changing the name to Chicago Black Hills and Western Air Lines, Inc.

Mid-Continent Airlines amended its previous application (Docket 988) for service between St. Louis and Detroit, to include Ann Arbor, Mich., and Lafayette. Ind., with the stipulations that Lafayette and Indianapolis would not be served on the same flight nor would Ann Arbor and Toledo. Other intermediate points on this proposed route are Decatur and Danville, Ill., and Ft. Wayne, Ind.



CANADIAN FREIGHTERS FLY AAF FEEDER LINE:

Canadian-built Noorduyn Norseman high - winged transports, 100-strong, are being used by the Army Air Forces' Air Service Command for feeder services between sub-depots and small stations to bring shipments to larger stations for transfer to big ATC transports. This plane, which made its reputation in the Canadian northlands, has a 550-hp Pratt & Whitney engine, controllable pitch propeller, seats for eight or a payload of about 1,700-lbs., and cruises at about 150 mph. Photo was taken at Firfield Air Depot freight terminal Patterson Field, Ohio.

Denies Route

AVIATION NEWS . November 15, 1943

Civil Aeronautics Board last week denied Eastern Air Lines a proposed service between Memphis and Greenville, S. C., via Muscle Shoals and Huntsville, Ala.

CAB's Secret Report

Analyst's survey of Canadian air relations arouses wide interest.

By BLAINE STUBBLEFIELD

If the Civil Aeronautics Board's recent report on Canadian air relations hadn't been marked "secret," there would have been less excitement about it in Washington. The document is factual, is derived mostly from commerce statistics and from public documents of the board and the State Department. It suggests no factors in the air rights horse-trading prospects that the experts didn't think of long ago. First public mention of the document appeared in Newsweek.

▶ Valuable Data—In this report the author, Selig Altschul, CAB analyst, scores to the line, leaving out the usual government cliches. The board and the other federal agencies, Congressmen and international officers, who now have it in hand, are finding it a valuable compendium of pertinent fact on which important decisions may rest. The report was written months ago, but the board shied away from publication because, for one thing, Altschul is bearish on the hopes of some overoptimistic operators, and because the board did not wish to be responsible for any over-the-border arguments.

Key to the U. S.-Canadian postwar rights of air transit is the unchanging economy of long-range transport operations. No matter how efficient the equipment and the fuel, costs can always be reduced by the use of additional fuel stops.

▶ Great Circle—The United States, Altschul finds, will want to operate on at least two "great circle" air tracks, one northeast to Europe and one northwest to the Orient. For some time to come, only the track to Europe will carry heavy traffic. To profit by fuel stops, it must have bases in Canadian-controlled Newfoundland, Labrador, Nova Scotia.

Canada's two air operators, Trans-Canada and Canadian Pacific, have world airline aspirations of their own, some of which will conflict with those of the United States, to say nothing of those of British Airways itself. But the Canadian government will drive the best bargains it can.

Canada Will Need Rights-Canada will want to fly to Mexico and besides, air rights are only one of many media of international exchange.

CAL Gets Lodestar

Continental Air Lines received a Lodestar from the Army early this month, according to executive vice-president Terrell C. Drinkwater. At a hearing in Washington, he said that within 60 days CAL expects some indication of how soon it may be able to start operations on previously authorized AM 60 from Denver to Kansas City.

CAB Makes Report On Overseas Outlook

In an effort to obtain the most accurate possible information on which to base its postwar policies, the Civil Aeronautics Board has written a report on prospective postwar oversea passenger traffic. This report is so far available only to board members and some other government officials. Presumably it will be made public eventually.

Realistic-Views of those who believe everything and everybody will take flight pretty soon are not borne out, but neither are those of the pessimists. But the postwar transport industry, CAB finds, certainly will not absorb the airplane output of very much plant capacity.

Recently the board released a survey of prospective overseas air mail wrote a confidential report on U.S.-Canadian air relations, and is now in process of analyzing a large batch of data collected during hearings on feeder line policy.

Caribbean Studied

A tour of the Caribbean area by CAB Vice-Chairman Edward P. Warner interested Washington last week. Some believe CAB policy on future routes will emerge soon.

Two of the five temporary permits issued by the Civil Aeronautics Board to foreign airlines operating into Florida as auxiliaries to the war effort have been extended for three months only. The others, which have not started operations, presumably for lack of equipment, were allowed to lapse.

Three Lines Not Ready—All five expired Nov. 1 and were extended to Nov. 10. On that date, those to South America and will require Expreso Aereo Inter-Americano and and Hutchinson as intermediate transit over the United States. And, Dutch KLM were extended three months. Those of British West Indies, TACA, and Compania Nacional Cubana de Aviacion were not.

Continental Hits Midwest Competitors

Drinkwater warns CAB small lines may be "gobbled up."

By BARBARA FREDERICK

In a strong protest against the possible grant of permission to Transcontinental and Western Air and Braniff Airways to serve local stops in Kansas for which they have applied, Terrell C. Drinkwater, vicepresident and general counsel of Continental Air Lines, took the stand that "local lines should be allowed to expand and not be gobbled up by the greed of other carriers."

"We regard TWA's application as an attempt to encroach in improper fashion in a territory that should be served by a local carrier," Drinkwater said. He testified at a hearing in Washington before the Civil Aeronautics Board, on applications of these three airlines concerning Topeka, Salina and Hutchinson, Kan. Cites Need of Growth - Continental has no desire to be transcontinental nor to go outside the United States, Drinkwater asserted. For existence, it does, however, need to extend its route miles, and he added that the company's experience in this territory would not indicate that there was sufficient traffic to support three carriers.

Continental, which now operates AM 43 through Hutchinson, and for whom AM 60 from Denver to Kansas City via Salina and Topeka has been authorized, has asked CAB to be allowed to join these two routes from Salina to Hutchinson.

Complementary — TWA, on the other hand, argued that local traffic is of vital importance to the economical operation of the airline. Citing their experience with the development of some short haul runs by reduced or excursion rates. Charles L. Gallo, assistant to TWA's vicepresident in charge of traffic, testified that his company believes long haul and short haul services are complementary and can best be run by the same operator.

TWA not only is definitely interested in local traffic, but its record will show the extent to which it already has developed local traffic, he said, citing Reading, Pa., and Harrisburg as two examples.

Skip-Stop Basis—TWA's application asks to include Topeka, Salina points on AM 2. At the hearing, company representatives said that, for the present, TWA would serve these points on a skip-stop basis.

EDITORIAL *****************

Public Interest at Stake

The Lea Bill which should come before the House for a vote in the near future, unless diverted by railroad pressure, is the most important statement setting forth the principle of exculsive federal regulation of all air commerce and air navigation which has come before the congress since the Civil Aeronautics act of 1938.

Virtually all of the Nation's aviation enterprises have gone on record supporting this principle. The American Bar Association has declared the bill in accord with its announced policies.

Chief opponents and most active in sabotaging the bill are strong railroad forces which do not necessarily represent all of the railroad industry.

The initiative is being pressed in a subterranean campaign by the Transportation Association of America, which the Senate Committee on interstate Commerce found to be primarily an organization to promote the interests of the Association of American railroads. The Transportation Association is both directly and indirectly promoting an "integrated" system of national transportation which would put all means of transport in each of numerous regions under one monopoly agency, with the strongest rail interests dominating.

The association, therefore, brings into the fight

on the Lea Bill not only the air transport industry but every other non-railroad transportation means.

Thus, Congress actually has before it the broad problem of competition in all transportation.

Three times in the past 30 years Congress has declared a policy of preserving competition between forms of transport, either by stated prohibitions against acquisition of one by the other, or by permitting acquisition only under restrictions. Each time Congress has faced the issue and insisted upon preservation of competition, and it should be made clear that, if the matter is to be reopened, Congress should do so with reference to all forms of transportation rather than as related to only one.

If public interest is to be served—which, after all, is the sole consideration—it seems more likely to be brought about if railroads and airlines are kept separate and in a position of competition in service and rates. That will stimulate both to render better service at the lowest rates possible. There certainly should be no change in existing public policy except on positive assurance that public interest will be saved. So far that has not been shown. Let the railroads explain concretely how the general public will profit by permitting railroads to engage in air transportation.

The Problem of Small Airlines

CAB member Oswald Ryan went on record twice last week for expansion of smaller airlines. He suggests either new routes or mergers. Mr. Ryan has held this opinion for some time, as have one or two other members of the board. It is interesting that both statements appeared at this time, when the air transport industry is in a merger mood.

Approval of the Inland Air Lines sale to Western is up before the board and probably will be forth-coming. The industry at the moment is acutely conscious of its relative size and disadvantages inherent in an "unbalanced" system. It is fighting for passage of the Lea Bill in the House against a well-oiled campaign of important railroad interests which are misrepresenting the bill to state officials and the press. Furthermore, several other airline merger projects in various stages of gestation for months are nearly ready to appear.

In a concurring opinion on CAB's denial of a Memphis-Greenville route for Eastern Air Lines, later expanded in an address in Kansas City, Mr. Ryan said "The attainment of an improved balance in our air transportation system through the expansion of our smaller air carriers, where such expansion is economically and geographically sound, seems to me to merit the serious consideration of this Board."

It appears a "reasonable conclusion," Mr. Ryan says, from experience of rail carriers and air carriers alike, "that any great disparity in size between carriers is not conducive to a balanced transportation system. A small air carrier is likely to suffer certain operating and financial handicaps in competition with large carriers. It has less mileage over which to spread its fixed overhead costs. It often finds the efficient and economic utilization of its aircraft equipment difficult of achievement. It frequently bears the burden of excessive financing costs."

It would be a mistake to consider Mr. Ryan's statements, speaking as an individual rather than as a member of the Board, as an indication of an immediate change in Board policies. But it is safe to say that he would not have made this public address on the subject over the protests of his fellow members. The Ryan opinions definitely will have the effect of a "trial balloon." They will probably be received with general approval in the industry. The smaller operators will anticipate new routes; the larger lines will be attracted by possibility of absorbing certain uneconomical companies. The statements should pave the way for official action on the part of the Board in the near future.

ROBERT H. WOOD

AVIATION NEWS . November 15, 1943

TIMBER STRUCTURES INC.

Announces the Acquisition of

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THE SPEEDWALL COMPANY

Formerly owned and operated by I. F. Laucks, Inc.

Imber Structures, Inc. pioneers in prefabricated wood trusses, arches and columns for aviation housing, extends its field of service

through the purchase and expanded operation of the Speedwall Company, Seattle, Washington, formerly a property of the I. F. Laucks Company.

The Speedwall Division of Timber Structures, Inc. will continue in the field of glued laminated spars and other aircraft parts. No effort will be



SPEEDWALL PLANT, 5035 First Avenue S., Seattle, Washington.

spared to keep abreast of the exacting requirements of this work. Write or wire your production inquiries to the nearest Timber Structures office.

TIMBER STRUCTURES, Inc.

535 Fifth Ave. 29th and N.W. Yeon Ave. 5035 First Ave. S. New York 17, N.Y. Portland 8, Ore. Seattle 4, Wash.

Warehousing and crating facilities at Trenton, New Jersey

TIMBER STRUCTURES PLANT, Portland, Ore. (below). Located in the heart of the nation's structural timber area. Yearly production in excess of 80 million board feet of prefabricated lumber. . . . Other plants at strategic points.

