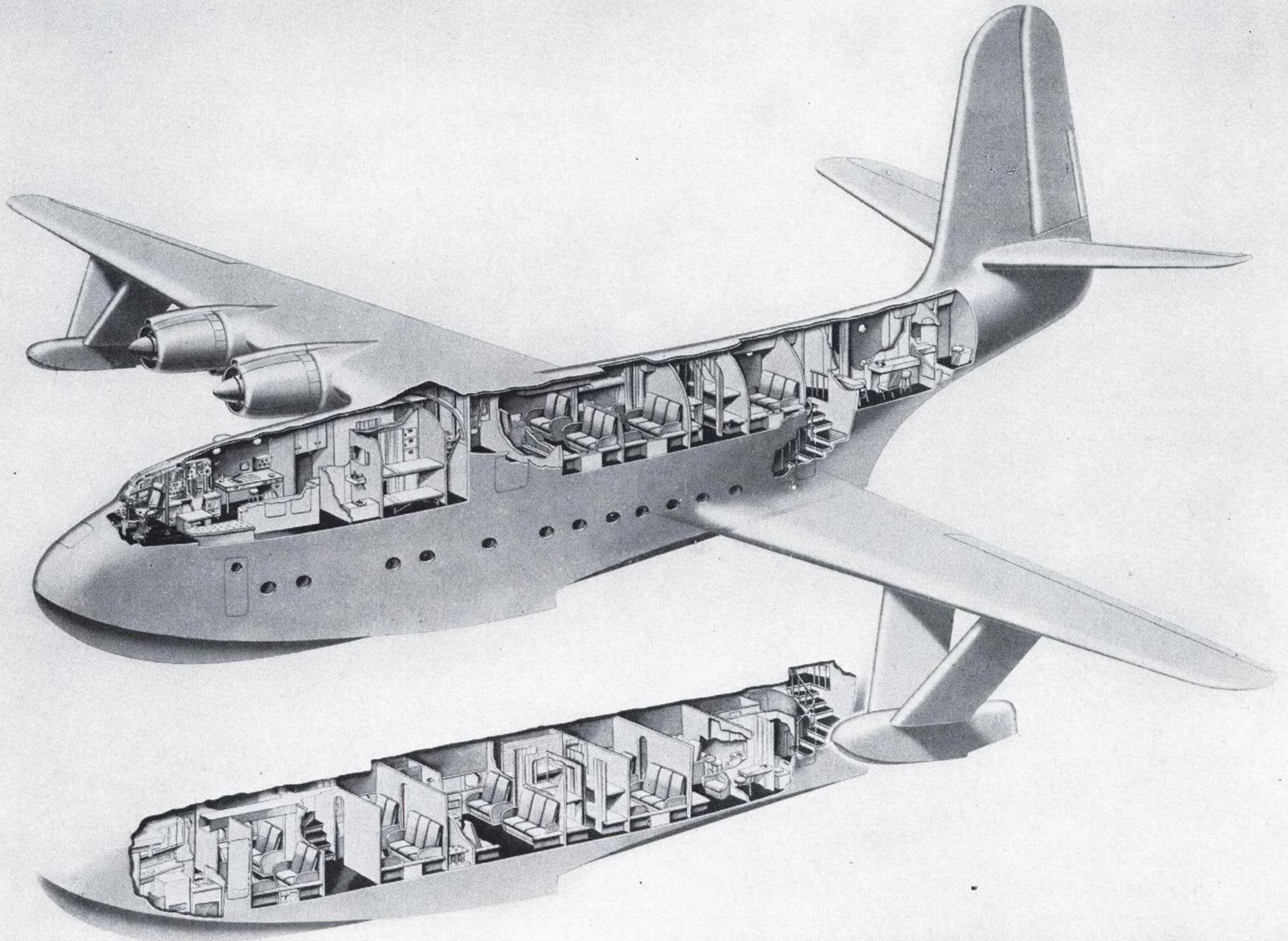


# Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC

MARCH 20, 1944



**Post-War Passenger Version of the 'Mars':** *First sketch of the production model of the improved Martin Mars, world's largest flying boat, showing the interior as it would appear in commercial passenger service. Glenn L. Martin Co. is starting production of 20 such boats for the Navy, adaptable as a transport for cargo, battle casualties, troops or officer personnel. (Story on Page 8.)*

## **Plane Plants Do Record War Job at Low Profit Level**

Earnings are under all other major manufacturing divisions, SEC reveals in comprehensive survey of corporation incomes. . . . . Page 25

## **Battle of Berlin in Final Stages; AAF Steps up Pace**

American forces take over what's left of job, with large scale precision bombing of vital points which escaped RAF obliteration night attacks. . . . Page 16

## **House Forming Committee on Post-War Air Problems**

Group, headed by Woodrum, to make comprehensive survey of outlook with view to planning program to meet defense and civilian needs. . . . Page 7

## **Hershey Shifts Deferment Control to State Chiefs**

List of essential occupations in plane industry being prepared at Wright Field for use as guide to officials in making occupational exemption. . Page 9

## **Surplus Inventories Segregated for Quick Reconversion**

Aircraft industry begins separation of materials from current stocks with view to turning title over to U.S. as soon as assembled and catalogued. Page 12

## **Financing Programs Add to Reconversion Confusion**

Aircraft industry, facing possible precipitate declines in post-war operations, expected to be particularly in need of new funds. . . . . Page 13





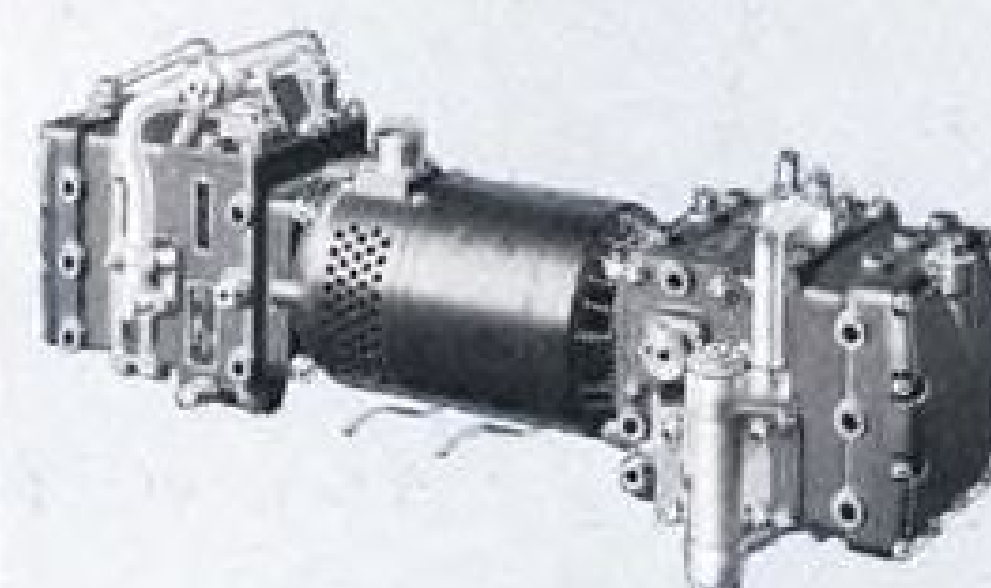
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Early realization of the importance to the war effort that aircraft hydraulic equipment comply with Winterization Specifications of the Army Air Forces led to the extensive research and testing that Vickers has done in this field. The cooperation of the Army and Navy services has had much to do with the success of this Vickers program.

The Vickers Aircraft Hydraulic Units illustrated here have either Yellow Dot or White Dot marking, as indicated. The Yellow Dot signifies that the unit complies with Winterization Specifications of the Army Air Forces for operation between -65 deg. F. and 160 deg. F. The White Dot indicates tentative approval of the unit: it is functionally satisfactory having proper mechanical fits (clearances checked with both maximum and minimum tolerances at temperatures from -65 deg. F. to 160 deg. F.) but does not have AN approved winterized packings. Just as soon as winterized packings become avail-

able, they will be incorporated in these units and request made for Yellow Dot approval.

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## THE AVIATION NEWS

# Washington Observer

**INDUSTRY TRADE ASSOCIATION**—Industry insiders appear confident that the conference of East and West Coast officials of the National Aircraft War Production Council, scheduled next month in Los Angeles, will bring long-awaited action on a single, strong trade association for the aircraft industry. Three well known officials so far have turned down offers up to \$75,000 to take the helm of a recognized Aeronautical Chamber or its successor: Eric Johnston of the U. S. Chamber, Arthur D. Whiteside, former WPB vice-chairman for civilian requirements, and head of Dun and Bradstreet; and NAWPC's general manager, Frank F. Russell. First, the various industry leaders themselves must decide what they want.

\*\*\*

**SURPLUS WAR GLIDERS**—One of the knotty problems after the war will be to decide, from a standpoint of airworthiness and safety standards, how many old light military aircraft will be permitted to fly about the country like the surplus "Jennies" of World War I fame until the market is saturated with new models.

Surplus gliders such as the Waco variety will be a new matter for regulation. Although the future of the flimsy canvas-covered CG-4's has been given little or no thought except as salvage material, at least one glider manufacturer is exploring possibilities of equipping them with light engines and using them for commercial cargo operations.

\*\*\*

**THE LONE RANGER AGAIN**—Production of Boeing's *Sea Ranger*, known officially as the XPBB-1, and known unofficially as the *Lone Ranger*, apparently is off again. For a time it appeared that this giant craft would go into production, but it developed that any air-

craft manufacturer who could handle the job—Martin was mentioned specifically—had too many other contracts with a higher priority to fill and it now appears that manufacture of this flying boat will have to wait. Only one of the craft ever was built, the *Sea Ranger* passed her Navy tests and was generally lauded. Its sharply curving hull lines and massive proportions of the fuselage ahead of its narrow wing are clearly shown in the accompanying photograph taken over Puget Sound.

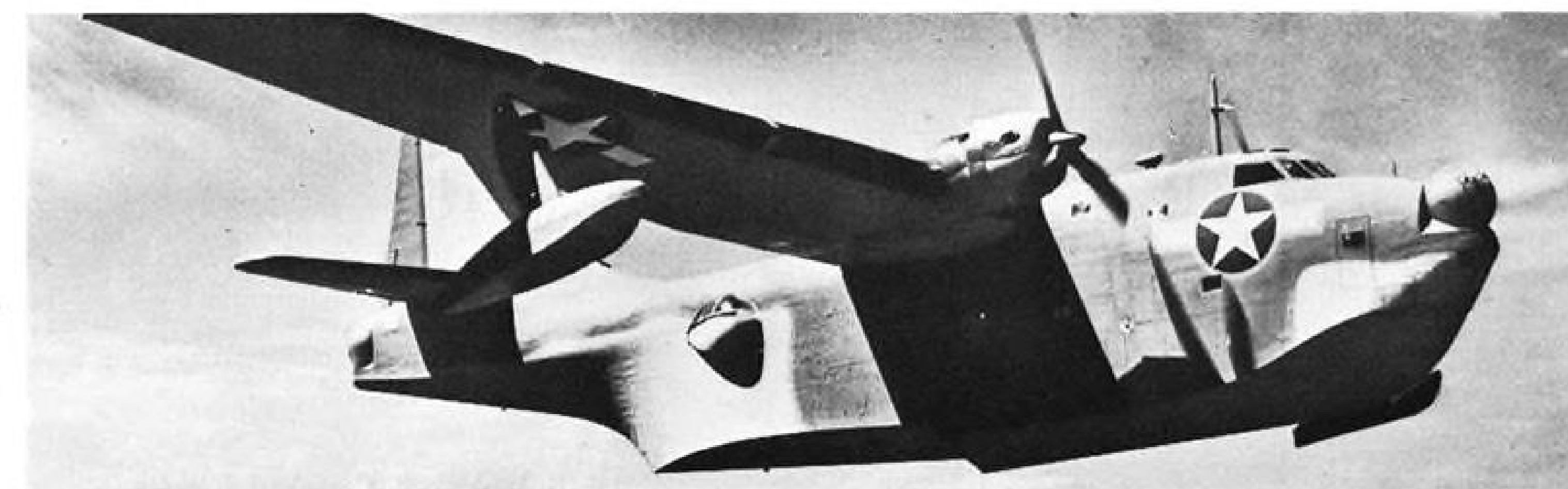
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**KAISER—IN OR OUT?**—Government officials come in for criticism for conflicting statements but the practice also extends to civilians. For example, Henry J. Kaiser denied that he had drafted a letter to stockholders announcing his resignation as president of Brewster Aeronautical Corp. A few days later, Kaiser informed the stockholders that neither he nor his associates would serve as officers and directors after the Mar. 17 annual meeting. It is all pretty confusing for those who try to keep the public reliably informed, this despite the fact that there are factors involved about which no one but Kaiser and Brewster and the Navy have knowledge.


\*\*\*

**RECRUITING WOMEN**—The WACS, among other women's service organizations, are conducting an intensive recruiting campaign, offering free rides in a bomber and other inducements. At the same time there is in progress another intensive recruiting campaign to get women into vital war production work—also with inducements. To women eager to serve their country, the double-headed program presents complications and a number of them have expressed the viewpoint that they are not sure which way to turn. Sponsors of each campaign

Boeing's long delayed *Sea Ranger* over Puget Sound.







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## AVIATION NEWS

March 20, 1944

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will assure you that they do not want to conflict with the other, but the fact remains that they are conflicting and many Washington observers are wondering why there isn't better coordination on such programs.

\*\*\*

**WOMEN IN TRANSPORTATION**—A different approach to the problem was seen in a recent meeting in Washington, called by the Office of Defense Transportation and attended by representatives of the Capital Transit Co., which operates Washington's street cars and buses, the Association of American Railroads, the American Trucking Association and the Air Transport Association. The ODT wanted contributions for production of a movie short that might aid in recruiting women for transportation activities. In connection with the campaign to get women into transportation fields, it is interesting and significant to note that the airlines have had virtually no trouble, outside of the south, in recruiting women. And incidentally, estimates are that on a nationwide basis about 34 percent of airline employees are women, not as high as the aircraft manufacturing industry, but high enough to present problems in the future.

\*\*\*

**PUBLIC SERVANT AT A COST**—Few aviation people realize the extent to which William A. M. Burden, new Assistant Secretary of Commerce, has practiced his theory of public service. He joined the government as a vice-president of Defense Supplies Corp. in May, 1941, and did not go on the public payroll until August, 1943. His original status was that of a dollar-a-year man, but even dollar-a-year pay disappeared in Washington circles after WPB imported scores of them and aroused unfavorable publicity.

\*\*\*

**SOUTH AFRICANS SEEK DOUGLASES**—Do not overlook the South Africans in your surveys of post-war international air routes. Representatives of the government-subsidized South African Airways are seeking Douglas DC-3's here and returning visitors say the line expects to resume commercial operation locally within a few months. The line now is part of the Royal African Air Force Transport Command, and its pilots are flying Douglas for the first time. For the future, officials have their eyes on Douglas DC-4's, which might hop to South America and Europe, as well as throughout the dark continent.

\*\*\*

**FLYING FOOD TO MARKET**—Study progresses on post-war business potential in flying

## Washington Observer

perishable food to markets. Wayne University's air cargo research department has spent months on a report on "Air Cargo Potential in Fresh Fruits and Vegetables."

George A. Hormel & Co., Austin, Minn., Spam makers, have developed a portable refrigerator for shipping meat from the plant to coast markets by air. Officials claim their business can be increased considerably by thus extending their sales area.

Other observers are asking why it is necessary to invent refrigeration units for flying when any large plane can be taken up to altitudes with temperatures which will insure proper preservation, regardless of the time of year.

\*\*\*

**DOGHOUSE FOR LABOR?**—In the government and out there is talk everywhere about the speech made by Eric Johnston, president of the U. S. Chamber of Commerce, who said among other things that labor is now on the threshold of the doghouse which management has been monopolizing for some years. Johnston doesn't want to see labor in the doghouse, nor does he want to see management there either. He suggests a mutual assistance pact between the two and gives two choices: Go ahead and turn the country into a continuous brawl and the government will chain you both, or, make a better choice, work together and stay free. The reaction in the capital has been generally favorable.

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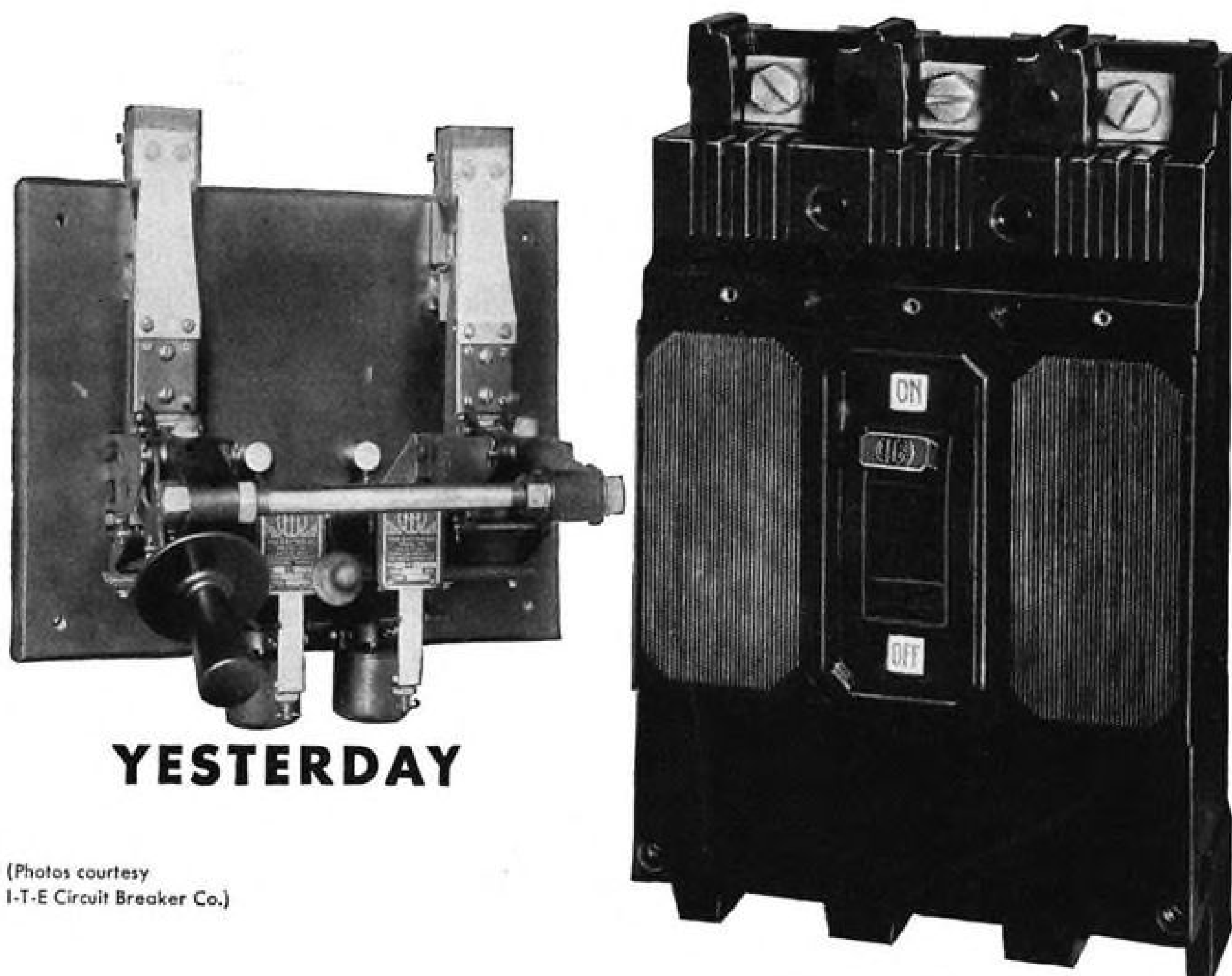
**NEW NAA PROGRAM**—The National Aeronautic Association, and its new president, William Enyart, have proposed a program to stimulate private flying, where they believe greatest utilization of the airplane in all its functions now exists. This new start will be lauded by all aviation people if the program is carried out as planned.

\*\*\*

**THE NORTHROP PLAN**—The aviation industry is watching closely the reaction to a program set up by Northrop Aircraft, Inc., designed to help employees get peacetime jobs when warplane contracts are canceled. LaMotte T. Cohu, Northrop board chairman and general manager, writing in our contemporary, "Aviation" magazine, describes the plan "as much like the company's hiring plan in reverse." Instead of combing the nation for personnel, the company's industrial relations department will be combing it for jobs in peacetime industry to which employees can transfer when they are no longer needed for such work as producing Northrop's P-61 "Black Widow" night fighter. The program indicates a move beyond the talk stage on post-war employment.



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# Aviation News

VOLUME 1 • NUMBER 34

McGraw-Hill Publishing Co., Inc.

March 20, 1944

## House Forming Select Committee To Study Post-War Air Problems

Woodrum chosen to head group organized to make comprehensive survey of outlook with view to planning program to meet defense and civilian needs of country.

By WILLIAM G. KEY

Establishment of a select committee of the House of Representatives to study far-reaching post-war military problems, in which aviation will be foremost in consideration, has the support of all governmental and industry groups concerned and should be completed shortly.

The select committee virtually parallels a unified command in that it will comprise seven members of the Military Affairs Committee, seven from the Naval Affairs Committee and seven from the general House membership, probably with heavy representation from the appropriations committee. Significantly, the only member of the House who owns and flies his own plane, Rep. Clifford Woodrum (D., Va.), has been approved by leaders of both parties and the military and Naval committees as chairman of the new body, which inevitably will have profound influence in the future of America's air power. Woodrum is the ranking member of the Appropriations Committee and an advocate of a strong national defense.

► **Discussions**—The committee is the result of intensive discussions covering several months, starting with a number of influential persons in Washington who had been confronted at the outbreak of this war with the tremendous problem of harnessing America's comparatively small aircraft, shipbuilding and armament industries to the immediate needs of defense and the expanded needs of offense. This group included top-ranking Army and Navy officers and civilian industrial experts brought in to assist the services and the gov-

ernment in gearing production to the needs of the nation.

As the discussions of this group developed a concrete basis for action, many Congressmen joined in the planning and the result was the simple language of House Resolution 465, which should go before the rules committee early this week.

► **Post-War Air Force**—The committee will have a strong voice in maintaining a strong post-war air force, and through the maintenance of that strong force build a strong manufacturing industry back of it. It not only will have

a voice in determining the production of the aircraft industry but also is expected to lend its strength to the provision of stand-by production facilities and in the development of aeronautical research necessary to keep American production and the services air force far ahead of that of any other nation. Heretofore, it should be pointed out, research in the aeronautical field has been a hit-and-miss proposition, with no overall picture of development available to any national group.

► **Appropriations**—One major concern of the Select Committee will be the obtaining of appropriations, for which it is almost axiomatic that it will have to play a part in the education of the people to the need of expending government funds to maintain air leadership. Those close to the discussions pointed out that possibly even members of Congress still will have to be convinced of the necessity for providing funds for research, especially when those expenditures ultimately reflect in



### AUSTRALIANS STUDY U. S. AIRWAYS METHODS:

Australia's civil aviation agency has sent three officials to Washington to inspect American airlines and look into airways problems in this country. The group is headed by Daniel McVey, director general of Civil Aviation. Left to right are J. L. Smith, director, Aircraft Division, Australian War Supplies Procurement; Roy M. Badenach, chief electrical engineer, Department of Civil Aviation; McVey, and Charles I. Stanton, Civil Aeronautics administrator.

**Continental - Diamond** FIBRE COMPANY  
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the profit columns of private industry and for retaining a strong nucleus of a war air force.

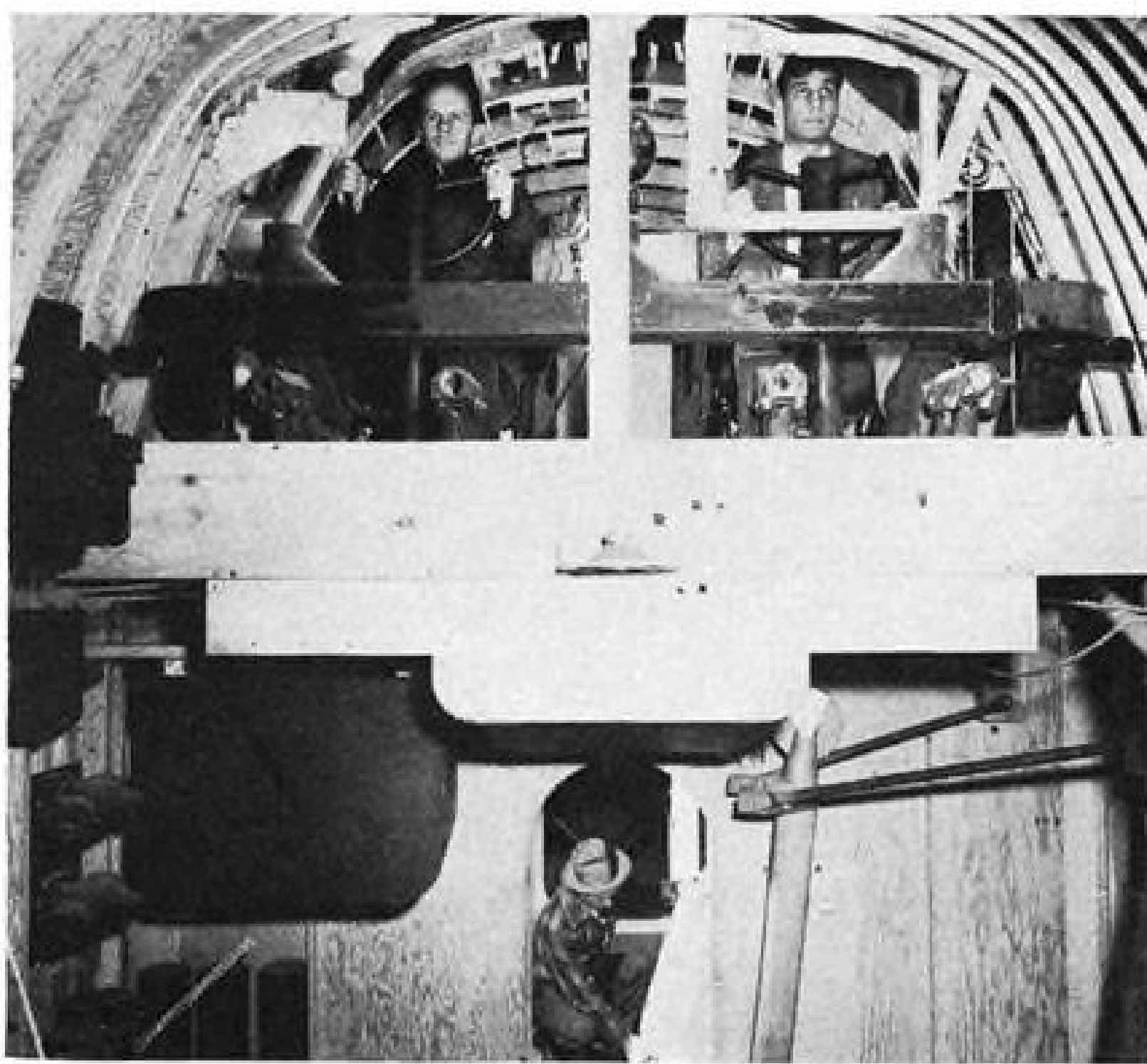
Before this war, neither Army nor Navy had funds available for research, and under past practice an individual company would develop a new wing or engine at its own expense.

The situation in which there was no particular encouragement to private industry to expend great sums in research for which there might be no market would be alleviated through operation of the select committee, which not only could be expected to see that funds were provided for vital research, but which also would be in a position to evaluate developments in the light of the long-term needs of the country.

► **Other Committee Work** — The committee also would view the over-all military picture, and one logical outcome will be intensive studies of the principles of unity of command for all branches of the armed services and the wisdom of maintaining separate Army and Navy air forces. The contemplated studies of the committee also include future procurement and training of personnel, officers and men, both for the regular services and reserve components.

## Plastic Upholstery

A new plastic fireproof upholstery, developed by United States Rubber Co., is now being used as turret lining and seat covering in bomber and fighter planes.



**New "Mars" Mockup:** Glenn L. Martin Co. is completing a wood mockup of the production model of the Mars, to be designated the JRM-1 by the Navy. Photo on left shows both flight deck and forward cargo com-

## Production Mars To Fly More Cargo

Built-in fittings permit conversion to passenger, troop or hospital plane.

First full details disclosed on the Martin JRM-1, production version of the 70-ton Mars, indicate changes which will make the plane even more adaptable to post-war commercial use. Widespread revisions from the original flying boat, both inside and outside, will make it even larger and more efficient than the prototype now in service in the Pacific.

It has been designed to fly at weights up to 145,000 pounds, as compared with a design weight of 140,000 pounds for the prototype. While primarily designed for cargo-carrying, the JRM-1 has built-in fittings which will permit instant conversion into a hospital ship, a passenger transport or a troop carrier.

► **Holds 84 Litter Cases**—In the first category it will accommodate 84 litter cases with 25 attendants; in the second, 50 passengers in reclining chairs, all on the lower deck, and in the third, 132 troops, all seated. As a cargo carrier, the JRM-1 will have ample space for seven jeeps and even greater numbers of field guns or aircraft engines.

The first airplanes of the new contract which calls for 20 of the giants, expected to be ready early next year, will be powered with

four 2,200 hp. Wright Cyclone engines, but the design provides for a switch to larger and more powerful engines should they become available, which will permit a considerable increase in gross weight—hence an increased payload.

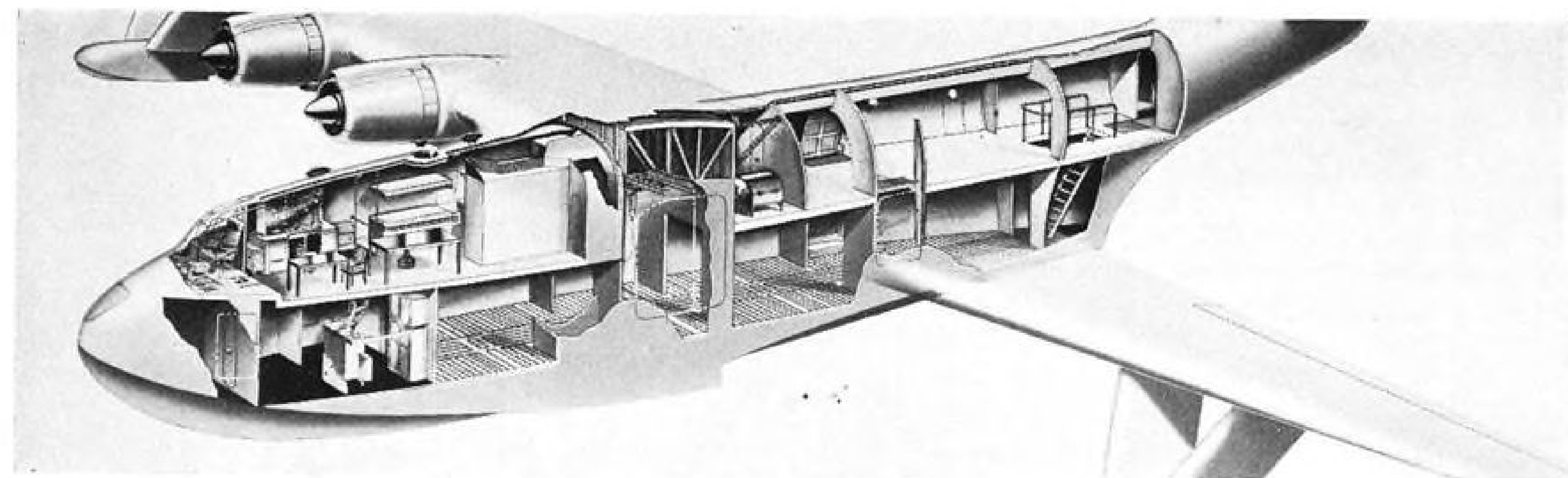
► **Rudder Changed** — External changes on the new model will include substitution of a single rudder tail for the twin rudder tail on the prototype, lengthening of both the bow and second step by four feet to provide added cargo space, and the enlargement and redesign of both main and rear cargo hatches.

Inside, the hull has been stripped of shower baths, pressurizing equipment, mess tables and lounges which were included when the big ship was originally designed as a patrol bomber. One bulkhead has been removed and frames with openings wide enough to permit the passage of jeeps, field guns and aircraft engines substituted for the remaining bulkheads on the main cargo deck. The number of bunks has been reduced from 36 to eight, four of which are located on the flight deck in the space formerly occupied by the pilot's lounge, and four on the upper rear deck just aft of the auxiliary power plant compartment.

► **Tie-Down Fittings**—Included in the new equipment on the JRM-1 is more than a ton and half of tie-down fittings, skid strips and engine dolly tracks, a 5,000-pound capacity cargo hoist on an overhead track running out on both wings, and a stairway to the upper rear



partment. Workmen above are in pilots' seats. On right, workers show how litters are handed to upper deck through special trap doors. As a hospital ship, the JRM-1 will carry 84 litter cases and 25 attendants.



**Cargo Version:** Manufacturers' cutaway sketch of the new Mars design as it would appear as cargo craft.

deck to permit its use for litter cases.

Four cargo hatches are provided for loading, compared with three in the Mars.

There are the two principal hatches, one under each wing, 99 inches wide and 92 inches tall. On the prototype, the main cargo hatches measure 56 x 90 inches and had horizontally divided doors, the top half of which rode out with the bomb hoist. Each of the new hatches is closed by vertically divided doors opening outward. The doors on the production version are completely independent of the hoist, and the hoist itself is a self-contained unit which can be run to either side without any re-rigging, such as was necessary with the fixed unit on the Mars. The two aft cargo hatches are on each side, just forward of the second step. They provide openings 50 x 62 inches and have doors which slide up inside the hull when open. Immediately above the aft hatches are trap-doors 50 x 24 inches for loading density cargo onto the upper deck.

► **Resembles Warehouse** — Compared with the highly compartmented Mars with its many bulkheads and 20-inch bulkhead doors, provisions of importance to its original patrol bomber use, the interior of the JRM-1 resembles a spacious warehouse.

## Canadian Cutback

Canada is following the U. S. Army Air Forces in curtailing air training, it is disclosed in Ottawa. Air Minister Power said no actual reduction in personnel will take place for 18 months, but training meanwhile will concentrate on personnel for heavy bombers. Power said RAF schools in Canada would be the first to be closed.

## Hershey Shifts Deferment Control Into Hands of State Directors

List of essential occupations in plane industry being prepared at Wright Field for use as guide to officials in making occupational exemptions.

By SCOTT HERSHEY

Deferment of aircraft and other war workers is placed strictly in the hands of State Selective Service directors under the new amendment to draft regulations just issued by Maj. Gen. Lewis B. Hershey, a situation which should protect occupational deferments in vital industries if it is worked out according to present plans.

While off hand it appears there is a tightening of occupational deferment regulations, which might seriously affect the aircraft industry—particularly in engineering and technical departments where a large percentage of the men fall within the 18 to 26 age limit—plans are in the making for a list of essential occupations in essential industries to be used as a guide by state directors in making their deferment decisions.

► **WMC Preparing List**—It was understood that the War Manpower Commission was preparing such a list and it was probable that officials at Wright Field would prepare the list for the aircraft industry, which should assure the retention of key production men in industry.

Local draft boards have been notified that no registrant up to 26 was to be considered a key man unless his deferment is recommended by the state director.

Since last Feb. 1, this policy has applied to registrants 18 through 22. In addition, the only other ex-

emptions ordered considered for men under 26 is when they are engaged in an occupation which may be specifically exempted by the national director of Selective Service.

► **Curb on Deferments Expected**—New directives sent out by the national director were interpreted in Washington as designed to correct an erroneous impression gathered by many local boards given by President Roosevelt's executive order of Feb. 26. This order called for a re-examination and tightening up of occupational deferments and stepped up the drafting of these men.

In numerous instances this was interpreted to mean that deferments in the 18-25 age limits should be halted.

This situation caused considerable concern in the aircraft manufacturing industry which saw many key men, particularly in technical branches, lost to the armed forces at a time when production schedules have been accelerated to an all-time high.

► **Married Men Avoided**—It is no secret in Washington that many local boards which have failed to meet their quotas in recent months have avoided drafting married men, particularly those with children, even though these men are not engaged in essential war occupations. The tendency in some boards has been to turn to young,



unmarried men, despite the fact that many of these are key production men in war industries. It appears likely that the new regulations will result in the drafting of more married men with children who cannot satisfy state directors that their work is essential.

President Roosevelt told his news conference that it was just as important to prevent work stoppages in war industries by taking too many essential workers as to get more young men in the armed services. A degree of necessity em-

phasized by Mr. Roosevelt should be the decisive factor in any given case of whether a young man was more useful in a war plant or in the armed services.

► **Some Specialists** — While he pointed out that more and more young men are needed in the armed services, he also noted that some young men are specialists in some war industries. While he did not mention the aircraft industry in this connection, his remarks apply directly to the industry's situation.

## Industry to Discuss Top Problems At AWPC Conference in April

Shift of war emphasis to Pacific in coming months to have important effect on aircraft plants.

By SCHOLER BANGS

Production problems that will result from the shifting of the main theater of war from Europe to the Pacific will keynote a conference of leading aircraft executives to be held in Los Angeles Apr. 24, at the regular semi-annual meeting of the Aircraft War Production Councils of the east and west coasts.

Philip G. Johnson, president of Boeing Aircraft, and also head of the West Coast council, made the disclosure in a discussion of issues currently confronting the industry on the Pacific coast.

► **West Coast Industry**—He emphasized that airplane building will be the "main production" of the West Coast aircraft factories after the war and stressed that the companies' post-war plans are not sufficiently crystallized to discuss "other things" they may produce.

► **Cost Reduction Cited**—Declaring that improved tooling, design and labor utilization will continue to reduce the "taxpayer cost" of military planes, Johnson said aircraft executives anticipate further improvement of production efficiency through government pooling in regional storage reservoirs of surplus materials currently held in aircraft plants.

Johnson also said Southern California factories that participated in the production of Boeing B-17 *Flying Fortresses* will not be included in the B-29 *Superfortress* program. Production of Boeing's *Superfortress*, he said, will be carried out at Boeing's Seattle and Wichita plants and in the Bell, Fisher Body, and Martin factories.

Correlation of B-29 production will be through a B-29 committee functioning along lines of the committee that unified Boeing-Vega-Douglas B-17 production.

► **Northrop Move Commended**—Both Johnson and J. H. Kindelberger, president of North American Aviation and West Coast Council vice-president, commended Northrop Aircraft's current nationwide search for post-war jobs in other industries for Northrop workers who can not be retained, but said they believed the war's end is too uncertain to qualify industry-wide job-hunts of that nature at this time.

Concerned over the prospective drafting of young men in the industry, Kindelberger said vigorous appeals will be made to retain young production executives and engineers, adding: "There is no intent on the part of the aircraft industry to play dog-in-the-manger with its manpower. But we do have to maintain a nucleus of skill in the face of a critical dilution of our skilled worker resources. The industry's manpower intake today is wholly unskilled."

► **Shortage Relieved**—Kindelberger viewed as "very encouraging" the fact that Southern California aircraft factories today are confronted with a manpower shortage of only 3,000 workers instead of the 7,500 anticipated for this time.

Johnson, however, said Boeing expects a need for 2,000 additional workers when the company's Seattle plant, now building B-17's is converted to B-29's.

## Rotor Patents

Exception has been taken in some quarters to recent statements that the basic patents involved in rotary wing machines, particularly helicopters, have lapsed, leaving the field open to manufacturers.

In general, early patents on rotors, cyclic feathering, and suspension arrangements have run out. But the question whether any given device, new or old, is basic to direct lift, is most controversial. A device that has been basic for a quarter century may not be so next year or the next.

There are said to be several thousand patents relating to direct lift, and many thousands if foreign rights are included.

The only way to reach conclusions on the extent of patent coverage in force in this field would be to select those that seem to be important as a basis for overall analysis. Even then the result would be vague at best.

## Bell Improves New Helicopter Model

Lawrence D. Bell, president of Bell Aircraft, disclosed in the company's financial report, that the Bell helicopter which has been under development, was further perfected during the past year and that it incorporates a principle giving increased stability to the craft in flight.

He also mentioned that production had started on the new fighter plane, previously announced, a plane with low drag wings and two-stage supercharged engines to give speed and high altitude performance. Bomber production has started on schedule at Bell's plant at Marietta, Ga.

► **Financial Report**—Bell Aircraft reported net profit of \$3,062,000 in 1943 before renegotiation, equal to \$7.77 each on 394,240 shares against \$2,911,000 or \$8.17 each on 356,240 shares in the previous year.

Company sales amounted to \$232,134,000, a new high, compared with \$121,863,227, after renegotiation, in 1942. In a letter to stockholders, Bell said substantially all the company's business in 1943 was subject to renegotiation, but the evidence did not indicate that a refund will be required.

## Jet Power to Bring Big Changes In Flying Boat Designs

Sea craft to benefit from new plant but more time will be required for development than with land planes.

By BLAINE STUBBLEFIELD

Development of jet power eventually will permit extensive and probably favorable revision of flying boat design, in the opinion of engineers questioned by AVIATION NEWS. But landplanes have initial advantages in adaptability to jet power, and may be expected to take the lead in efficient use of it for some time to come.

Up to now, the height of flying boat hulls has been increased as power increased, to raise the wings and keep a low-drag installation of engines and still have the propellers clear of water and spray. Gullwing design in some cases has helped to raise the power plants and thus saved some hull depth.

► **Advantages**—If and when jet engines are brought to a degree of efficiency that will make practical their use on full-range aircraft, including seaplanes, they will enable designers to base their hull shapes on aerodynamics to a much greater extent than is now possible. It seems probable, engineers say, that the smaller waterplanes, even jet powered, will always need higher wings than landplanes do. The problem of keeping the tail assembly high will be even more difficult than it is now if the hull is lowered for jet power.

► **Disadvantages**—Chief disadvantage of applying jet power to flying boats, at the present stage of development, is that a boat takes longer in seconds to get off than does a landplane of equal weight and power, and the low efficiency of the jet at low speed would lengthen the run. In fact, a boat that flew well enough with engines and propellers might not take off at all with jet engines which, at high speed, delivered the same power.

In a flying boat there is a difference between thrust available and thrust required, during take-off, which does not exist in the landplane. The reason for this is that as long as it is in the water, the flying boat has a component of water drag, while the landplane's drag on the ground is almost entirely aerodynamic.

► **Problems**—Pointing out the problems of applying jet power to flying boats is not to detract from the future of the combination. Competent authority indicates that the waterplane may benefit as much or more from jet propulsion than will the landplane. For one thing, it is hoped and expected that jet power can be made efficient at low speed. This will be necessary before it can be used on commercial airplanes, sea or land type. A second point on the problem of flying boat takeoff with jet power, is that towing or rockets could assist the machine out of the water, and the smaller types could be catapulted.

## Wright Field Tests New Air Weapons

Secret arms of greater importance than jet propulsion plane, Major General Branshaw discloses.

By ALEXANDER MCSURELY

Secret military developments now under wraps at Wright Field, Materiel Command headquarters of the Army Air Forces, eventually may be revealed as of greater importance than the revolutionary jet propulsion airplane, Maj. Gen.



**Production Chief:** Brig. Gen. Orval R. Cook, chief of Production Division of the Materiel Command.



**Heads Materiel Command:** Maj. Gen. Charles E. Branshaw, Commanding General of the AAF Materiel Command, who has been with the Air Corps for 26 years.

Charles E. Branshaw, commanding general, discloses in a recent announcement.

Pointing out that technical experts of the command are continually at work at a still accelerating pace, to develop ideas and designs for new war planes, weapons and equipment, the Materiel Command chief referred to his command's program as "a never ending struggle to keep the AAF in a position of leadership among world air powers, technically and operationally."

Materiel Command is responsible for engineering, development, procurement, production and inspection of all AAF equipment, and the billions appropriated by Congress for AAF equipment flows in large part through Materiel Command channels, to contractors and subcontractors throughout the nation.

► **Constant Improvement** — Pointing to the mounting of a 75 mm. cannon in a twin-engine B-25 *Mitchell* bomber, as a recent example of the constant improvement and modification of our air weapons which is being done by Materiel Command, General Branshaw praised the contributions of his division chiefs, Brig. Gen. Franklin O. Carroll, engineering; Brig. Gen. Orval R. Cook, production, and Brig. Gen. A. E. Jones, at that time procurement chief, to this project, and cited Col. Franklin C. Wolfe, armament laboratory chief, for his part in the armament project, which brought a new flying heavy artillery to bear on the Japs in the Pacific.

Expanded many-fold and accelerated by war-time demands,



the Materiel Command's research and development program is a continuation of Army air research carried on for many years at Wright Field and at old McCook Field. Despite the fact that the research was often curtailed and hampered by lack of funds in peacetime, Army's air technical experts examined literally thousands of ideas, testing, redesigning, discarding and reviving projects as changing materials and new scientific knowledge made possible advancements.

► **Engine Research**—Army's aviation engineering experts have contributed largely to development of the aircraft engine from the 400 hp. Liberty "motor" of 1918 to one of more than 2,500 hp. now. The turbo-supercharger, which makes possible such efficient performance of American fighting planes in the stratosphere was developed after many years of continuous study and research, at times carried on by Materiel Division engineers when manufacturers dropped the idea as presenting insuperable obstacles.

Among developments in which the Materiel Command and its predecessor organization pioneered or shared first honors with private industry are a self-sealing, leakproof fuel tank so efficient that the Germans have recognized its superiority to their designs and have abandoned their own ideas to copy it; the free-fall parachute; retractable landing gear; first radio beacon; first night flying equipment; oxygen equipment for high altitude flight; pressurized cabin for stratosphere flight; automatic pilot and bombsights.

► **Two-Way Circuit**—Ideas for new developments flow on a two-way circuit between the Materiel Command and the manufacturers' engineers, with frequent assistance from tactical requirements and demands. Manufacturers' engineers may design a new super bomber which goes "through the test wringer" at Wright Field, to emerge a considerably improved aircraft, or one greatly modified to meet special needs in some specific theater, or for some future plan.

Sometimes, as in the case of the new jet-propulsion plane built by Bell, the Materiel Command lays down specifications so complete that the plane is almost a Materiel Command design.

Study of captured enemy equipment, and of foreign equipment lent by our allies is another source of information with which the Materiel Command works.

## Surplus Inventories Segregated By Plants for Quick Conversion

Aircraft industry begins separation of materials from current stocks with view to turning total over to government as soon as it is assembled and catalogued.

Aircraft manufacturers, confronted with excess inventory and surplus materials that could wreck their financial structure in the event of sudden contract terminations, have begun physical separation of such inventory from their current stocks and expect to turn title of this material over to the government as soon as it can be assembled and catalogued.

Moving with unprecedented speed in the face of sharp warnings, West Coast plants estimated to have between \$20,000,000 and \$60,000,000 tied up in this surplus material have started the machinery for separation of the inventory, it has been learned. The total of this material on the West Coast alone will run to \$50,000,000, while in the east the figure will be far higher.

► **Topheavy Surplus**—The magnitude of the problem can be recognized from the fact that one plant with a total capitalization of only \$6,000,000 has more than \$40,000,000 in inventory and that the surplus in this plant alone could equal the capitalization.

Under preliminary discussions with government officials, the surplus will be segregated and warehoused for distribution in other channels or for scrapping if that is necessary.

► **Warehousing**—Title for this surplus will then be transferred to the government. Under plans now being discussed, the warehousing would be placed in the hands of the industries involved. For instance, the aluminum industry would take over the warehousing of all surplus aluminum and this surplus could be channeled to civilian consumer industries, to other war plants, or scrapped if unusable. The steel industry would be enlisted for warehousing of steel products and the same process followed.

In some cases, the warehouse space will be obtained by transfer within companies. Boeing, with 19 warehouses in the Seattle area alone, could utilize possibly two of these warehouses for the surplus materials by transfer of present contents to warehouses where the

surplus has been located and segregated. The government then can take title and dispose of the material. While this is an enormous task, it is deemed imperative that the task be done to at least partly cushion the impact of contract terminations, which at best are going to endanger seriously the financial structure of the companies involved. It was felt that it was a task that could no longer be delayed.

► **May Go to War Plants**—In this way, also, it may be possible to channel some of the materials into war plants where they are currently needed and into civilian production.

The surplus inventory has been built up during the period of heavy war production and during the period of somewhat uncertain production could not very well be segregated by the manufacturers. Some of it was ordered when production schedules were uncertain and a manufacturer could not be sure of the volume of planes he would have to produce.

Other surplus was built up when contract terminations for certain types of ships concentrated plant production on another plane for which the surplus materials could not be used. Because of the urgency of production, these surplus materials remained in the general warehouse facilities of the producer. Other normal factors contributed to building up the surplus that now endangers the whole structure of the manufacturing organizations.

► **Estimated at \$50,000,000** — One industry source, while admitting that it would be impossible to arrive at any definite figure, estimated that the West Coast plants have \$50,000,000 worth of these surplus materials and said it would take at least two months to accomplish the physical task of separating current inventory from surplus even with the companies moving at top speed. They are now awake to the imperative need for the task and are expected to expedite it, this key figure in the aviation industry pointed out.

## Financing Programs Add to Chaos Of Reconversion Discussions

Aircraft industry, with tremendous stake in post-war era, and facing possible precipitate declines in operations, expected to be particularly in need of new funds.

Bernard M. Baruch, John M. Hancock, Senator George, and other post-war planning leaders acknowledge complexities of methods of financing reconversion, and all are currently seeking some happy solution. Underneath the present discussions, however, are a welter of complicating situations involving both renegotiation and tax principles, and as a result of the pulling and tugging nothing but chaos and confused thinking has emerged so far.

The aircraft industry, more than any other, has an important nut to crack in the financing question. The automobile industry faces a depleted market and a tremendous backlog of business which is ready to be tapped the moment reconversion is accomplished. Similarly, manufacturers of consumer durable goods, such as vacuum cleaners, electric irons, and refrigerators, face virtually unlimited markets. Consequently, their need for financial aid is not pressing and, in many instances, does not exist at all. On the other hand, aircraft manufacturers—as well as aircraft instrument and component manufacturers—face tremendous declines in the volume of their operations and in the case of practically every company, financing will seem desirable.

► **Drop to 2.5% Seen**—The top executive of one leading aircraft company was told recently by War Dept. officials that his company could expect to drop to one-fortieth of his present operations with the end of both the Japanese and German phases of the war. How much of the drop would come with the closing of the German phase was not indicated. Facing such a steep decline in operations as well as a market glutted with a product that does not have too high an obsolescence rate, the aircraft industry unquestionably will require some type of financing on reconversion.

Some light is expected to be thrown on the subject of what will be done to meet the working capital needs of aircraft companies whose contracts are terminated,

when a special unit named several months ago to study this question files its report. This unit, headed by Carmen Blough of the Facilities Bureau of the War Production Board, has been studying the question of interim financing for some time and is now understood to be preparing to issue its findings in the form of recommendations which will be laid at the door of the Baruch-Hancock group.

► **Outlook Called Gloomy**—Early reports leaking from the Blough unit bear very little promise for the aircraft industry. As a matter of fact, they are extremely gloomy. While no one will confirm or deny details of the forthcoming report, it is believed that the group will hold to the position that industry in general has amassed comfortable profits from their war contracts after renegotiation, that present carry-back provisions of the tax law help to establish satisfactory reserves, and finally that industry has a nice profit position and is eminently capable of taking care of its own needs during the transition period. In brief, it is believed the report will seek to establish the theory that interim financing on a sizable scale is not necessary.

One prominent government official who did not wish to be quoted admitted there was considerable discussion now going on over the financing question and acknowledged that the subject was currently clouded with chaos. Neither OWM nor WPB would decide the issue, he asserted, since it was purely a matter for Congress.

► **Baruch Report**—The Baruch report, which has now grown to the point where it is regarded as the handbook on reconversion, discussed the extent to which financing needs vary. "Happily, many war contractors are already adequately financed, and will not need any kind of loan," the report declared. "Many have the credit standing which will permit them to borrow through commercial channels without any government guarantee. Many others will be able to borrow from commercial

banks with the aid of a Government guarantee and the T loans will meet this need."

Despite these warm words of reassurance, however, the aircraft industry is likely to be in a particularly unenviable position if such thinking is eventually translated into administrative policy or some statutory action.

## Doolittle Is Made Lieutenant General

Roosevelt recommends temporary rank for air hero who led first raid on Tokyo.

Not quite two years ago, James H. (Jimmy) Doolittle, then a lieutenant colonel, led the first air attack of the war against Tokyo.



Doolittle

That was on Apr. 18, 1942. For this he was awarded the Medal of Honor and the next day he was promoted to brigadier general. Now the White House has recommended that he be given the temporary rank of lieutenant general. He is the commanding general of the United States Eighth Air Force, which is giving the Nazis daily hammerings.

Shortly after the Tokyo raid, General Doolittle was assigned to duty with the Eighth Air Force and the following September he was named to command the 12th Air Force in North Africa. He was promoted to major general (temporary) Nov. 20, 1942, and was named Commanding General, North African Strategic Air Force on Nov. 1, 1943, and on Jan. 1, 1944, was named to command the Eighth in Great Britain.



## NWLB Rules on Two Plane Plant Cases

Refuses to extend retroactive date of Lockheed pay increase; summary of week in U.S. and war agencies.

By MARY PAULINE PERRY

National War Labor Board last week denied a request by International Association of Machinists-AFL, that wage increases previously approved by the Board for employees at the Lockheed Aircraft Corp., Dallas, be made retroactive to July 6, 1942, rather than Mar. 3, 1943, as originally set.

In July, 1943, the Board authorized the scale of rates it established for the southern aircraft industry extended to the Dallas plant of Lockheed. The union, however, based their request for the retroactive date for the new rates on the grounds that many of the Dallas employees had been transferred from the Southern California plants of the company and that War Labor Board in San Francisco, providing that consultation between management and the union on the subject of upgrading, should take precedence over the WLB order issued Mar. 3, 1943.

► **Suggestion Box Bonus Plan**—The Board denied approval of a suggestion box bonus plan submitted by the Timm Aircraft Corp. for employees at plants in Los Angeles and Van Nuys. NWLB indicated that a new plan, with some restriction on or limit of payments to be made for employee suggestions, would be considered.

NWLB has announced a procedure agreed upon with the Office of Price Administration for handling adjustments in compensation of employees who are paid on a basis of a percentage of prices, and instructions were sent to the chairmen of the 12 regional boards.

► **Wage Structure Involved**—Labor members dissented, but NWLB decided that while individual inequities might have resulted from the transfer, to grant retroactive pay for the period between July 6, 1942, and Mar. 3, 1943, would have the effect of destabilizing the wage structure in Dallas, particularly since the effective date for extension of SCAI rates to other plants in the area had been set at Mar. 3, 1943.

In another decision it was de-

termined that an agreement contained in the collective bargaining contract between IAM-AFL and the Consolidated Vultee Aircraft Corp. should govern the upgrading in the company's San Diego plant.

In addition the Board upheld an order of the 10th Regional announced by OPA.

► **War Production Board** announced that production of small electric motors for aircraft use will not be sufficient to meet present programs, unless additional manpower and some additional facilities are made available. WPB assured additional manpower and facilities.

► **Tool Shipments Off**—Machine tool shipments in January declined about 7½ percent from December to a value of \$56,349,000, the Board stated. December shipments were valued at \$60,861,000.

New Director of WPB's Detroit region is Carston Tiedman, whose appointment has been approved by the automotive manufacturers.

► **War Dept.** announces awards of construction contracts totaling \$1,403,000 for additional facilities at airfields and air depots.

► **The National Labor Relations Board** certified for the majority of salaried employees at Consolidated Vultee Aircraft Corp. at San Diego, the Aeronautical Industrial District Lodge 1125, IAM-AFL.

At the Glenn L. Martin-Nebraska Co. engineers certified for International Union of Operating Engineers, Loc. 38, AFL; production and maintenance employees for UAW-CIO; and for hourly paid plant-protection employees, UAW-CIO.

Elections were held at Illinois Division, Bendix Aviation Corp., and NLRB certified for maintenance carpenters the Chicago District Council of Carpenters-AFL; for production and maintenance employees, UAW-CIO; for operating engineers, International Union of Operating Engineers-AFL. At the same time the Board dismissed petitions filed by UAW-CIO Loc. 330 insofar as it pertains to electricians and truckdrivers following elections in which electricians elected in favor of I. B. E. W. Loc. B-134-AFL.

The Board ordered election at Willys Overland Motors, Inc., for maintenance mechanics, machinists, tool and die makers, tool grinders and tool inspectors for or against UAW-CIO, Mechanics Education Society of America, Loc. 4 CUA.

## Helldiver Output Ahead of Schedule

Production of Curtiss SB2C *Helldiver* at the Columbus plant of Curtiss-Wright Corp. is now ahead of schedule and the production rate is steadily climbing, Rep. Melvin J. Maas (R., Minn.) told the House Naval Affairs Investigating Committee in a special report.

Maas was head of a sub-committee that made a surprise visit to the plant recently, finding conditions excellent in the one-time "sore spot" of the production program.

► **Contract Completed**—The Congressman reported that the plant had completed its contract for the old SO3C *Seagull* scout observation plane and is scheduled to begin production of the new SC scout soon. The SC is reported to be a radical new plane for battleship and cruiser use. The plant also is experimenting, Maas said, with the new BTC dive-torpedo bomber, which is expected to be an improvement on the *Helldiver*.

## NAA Maps Program For Private Flying

A program which places major emphasis on preparation for an increase in private flying is being undertaken by the National Aeronautic Association, designed to perfect the ground work of facilities, education, law and service for the post-war aviation expansion anticipated.

The NAA announced that its role in the post-war era of aeronautical development will be "to serve the consumers of aviation products and services—the people who own, rent or fly personal aircraft, travel by airline or chartered plane and dispatch property and mail by air."

► **Local Units Stressed**—Under the program, NAA will stress local chapter organization at the grass roots where it believes the airplane's greatest post-war utility and the greatest need for preparation now exist. These local units will concentrate on development of local airports, study the need for and help obtain airline service and promote all phases of aviation as they affect the community.

The Association announced it has begun studies of a service program for private flying after the

war, to offer flight maps, routing service, airport directories and approved landing, repair and hotel facilities. Under consideration is ultimate expansion of this service on an international basis through NAA's identification with the Federation Aeronautique Internationale.

► **Purpose**—"In the fulfillment of this program," the Association announced, "the NAA will cooperate fully with any other organization working toward the same ends. Our major purpose is to get things done, and not to establish any monopoly of interest."

Principal phases of the program as outlined include:

► **Private Flying**—Study and promote a national airport plan; seek simplified, safe and sane air traffic rules; maintain close vigil over local, state and federal legislation bodies and strive for uniformity in air youth training; promote all wartime pilot training service and work for the creation of a suitable air reserve training corps after the war.

► **Aviation Education**—Work for the extension and implementation of aviation education in the public school and college systems; assist Boy Scouts and other organizations in air youth training; promote all phases of aeromodeling activity on a national scale and continue to act as the governing body of all model aviation.

► **Commercial Air Service**—Intervene in proceedings before the Civil Aeronautics Board to extend airline service on the basis of studies conducted by local chapters provided that NAA shall not at any time favor one airline over another; favor preservation and encouragement of private ownership of commercial air service, both domestic and international, operating under reasonably regulated competition.

► **Aircraft Industry**—Maintain close liaison with aircraft manufacturers on problems affecting the users of planes and service, including problems of demobilization and disposal of surplus aircraft; favor preservation of private ownership and management of aircraft manufacturing plants; urge and aid scientific research in all phases of aviation by both private and government agencies.

► **National Defense**—Seek establishment of a Department of National Defense with a Secretary of National Defense and Under Secretaries for the Army, Navy and Air departments.

## 225 Surplus Planes Of WTS Sold

About 225 of the 1,100 War Training Service trainer planes recently declared surplus have been inspected, posted and sold to bidders. WTS officials say the demand for this biggest offering of used airplanes is lively and the entire lot will be disposed of within a few weeks.

The 1,100 planes declared surplus are part of 5,000 purchased months ago by Defense Plant Corp. and lent to WTS contractors without charge. The planes are being offered for sale because civilian training aid to Army and Navy air arms is being curtailed. All 5,000 planes will be released progressively as the military air services dispense with civil air training.

## Braniff, Panagra Mail Cut Confirmed

Civil Aeronautics Board has disposed of two more mail rate cases, in each making final an earlier tentative finding that the rate should be reduced. Lines affected are Braniff Airways and Pan American-Grace Airways.

The Board order setting Braniff's

rate at 0.3 mill per pound mile was the eleventh setting that figure for an air carrier in the last 17 months. Effective over Braniff's entire system, as of Feb. 1, 1943, it will amount to a reduction of about \$590,000 for the remainder of 1943, and is expected to reduce mail revenue about \$685,000 for the year after Jan. 1, 1944, from what it would have been under the old rate. That rate was 24.83 cents per airplane mile, and was set by CAB from June 1, 1942.

► **Panagra Rate**—The new rate set for Panagra's entire system, effective from June 1, 1943, is 31.67 cents per airplane mile. It replaces an earlier rate of 50.77 cents per airplane mile, fixed from July 1, 1942. For June to December, 1943, the new rate will cause reduction of approximately \$390,000, and for 1944, about \$670,000.

The Board explained that Panagra's new rate was compiled on an airport-to-airport basis, where previous per mile computations were based on shortest practicable airway distances. The new rate applies when daily mileage does not exceed 10,117 miles for base poundage of 300 pounds, plus excess of 0.05 cent per airplane mile for each pound over base poundage. For months when mileage exceeds 10,117 miles, proportionate adjustment will be made.

## BRIEFING

William A. M. Burden's nomination as assistant Secretary of Commerce was confirmed by the Senate less than a week after approval by the Senate Commerce Committee. Confirmation took only a few moments. A clerk read the nomination, and the presiding officer announced that, without objection, it was confirmed. Burden formerly was special aviation assistant to the Secretary of Commerce.

Winchester Repeating Arms Co., division of Western Cartridge Co., is now manufacturing shotgun shells that substitute for batteries in the starting of airplane engines. Four sizes of the shotshell are being made by Winchester. They are placed in the starter mechanism and fired electrically by a fuse assembly in the head of the shell.

William Stout, Detroit, was appointed to Michigan State Board of Aeronautics.

The Canadian pilot who downed Baron von Richthofen, German ace of World War I, died near Toronto at age of 50. He was Capt. A. Roy Brown, former operator of General Airways.

Wayne University, Wayne, Mich., will start a course in jet propulsion next September, taught by Gunther R. Graetzer, aerodynamicist formerly with Stout Research Laboratories. He also is well known for work in helicopter and tailless aircraft development.

A Royal Air Force Transport Command *Liberator* flew Montreal to Karachi, India, 8,500 miles, with 28 tons of cargo, in 39 hours, 41 minutes flying time, via Newfoundland, Rabat, and Cairo.

A Consairway *Liberator* flew from San Francisco to Australia and back in 3 days, 23 hours, 20 minutes, breaking previous record of 4 days, 20 minutes. Eight six-man crews worked in relays.

British Air Transport Command is expected to become a permanent part of the RAF "and for many years to come it will be numerically larger than the number of aircraft at the disposal of civil air transport," said Sir Archibald Sinclair, Air Secretary, in Commons.



## COMMENTARY

### Battle of Berlin in Final Stages As AAF Steps up Daylight Raids

American forces take over what's left of job with large scale precision bombing of vital points which escaped obliteration night attacks by RAF.

The attempt to knock out Berlin, military, industrial and political center of the Reich, by Anglo-American air power began Nov. 18, 1943. Since the start of the war and up to that date the RAF Bomber Command had attacked the Nazi spider about 90 times, including light stinging attacks by fast *Mosquitos* and small and medium forces of heavy bombers.

However, on the night of Nov. 18-19 RAF *Lancaster* and *Halifax* four-engine bombers opened the all-out campaign to eliminate the No. 1 target in Germany. The attack was in force, and some 1,500 tons of bombs were dropped, with good results.

The accompanying table will show the progress of the RAF campaign by night, with its climax of some 8,200 tons of bombs dropped during the last eleven nights of January (5,600 the last three nights). A final jolt on the night of Feb. 15-16 was administered when nearly 800 of the RAF heavies dropped some 2,800 tons of bombs at the terrifying rate of 80 tons per minute. Speedy *Mosquito* reconnaissance bombers over the target one hour later reported a "very large area of fire, with smoke rising to a height of nearly four miles."

► **Main Assault by Night**—This completed for the time being, and possibly for good and all, the RAF part of the job, which was done in three stages of five attacks each. From Nov. 18 to Dec. 2, about 8,900 tons of bombs were dropped, including one very heavy attack. From Dec. 16 to Jan. 2, five more attacks, totaling 7,800 tons, with also one very heavy attack. After results were assessed, British authorities stated that up to this point about 40 percent of the built-up portions of Berlin, including many of the central government build-

ings and some 98 important industrial plants were severely damaged or destroyed. It was at this time also that the estimate was given out that 35,000 tons of bombs probably would be required to wipe out the city as a part of the Nazi war potential. (It took more than 10,000 of an estimated 15,000 tons required to flatten the great port of Hamburg last summer, and according to recent reports it is now well more than 50 percent back in the running; big cities have a very stubborn way of refusing to lie down and be counted out for good.) Up to the morning of Jan. 3, nearly one-half of the 35,000 ton total had been dropped on Berlin. The third stage in the RAF campaign con-



**FW-190 LANDING GEAR:**  
German type of elongated landing gear of the Focke-Wulf 109 is seen in this picture of the captured fighter now at Wright Field.

sisted of five attacks between Jan. 20 and Feb. 15, four of them "in very great force," totaling 11,000 tons, bringing the RAF figure to over 27,000 tons, roughly 80 percent of the job.

► **Knockout by Daylight**—It appears that the Combined Chiefs of Staff then decided that Berlin could smoulder in its own fires for a while and do a bit of digging out, while the Anglo-American strategic bombing forces carried out their all-out air blitz on the German aircraft industry. Aided by unusually good weather, the RAF and the U.S. Strategic Air Forces in Europe (8th and 15th) staged a non-stop offensive from Feb. 19-20 to 25-26 which has, to say the least, severely crippled Nazi warplane production capacity. This strategic timing and selection of targets is arrived at by a special Bombardment Committee of the Combined Chiefs of Staff composed of high-ranking air officers, assisted by expert industrialists, engineers, economists and others who have an intimate knowledge of Germany's entire industrial system.

Sir Charles Portal, Marshal of the Royal Air Force (which is one grade higher than a 4-star general), is the Secretary of the Committee, which also includes Lieut. General Spaatz and Air Marshal Harris, all of whom share the conviction that, given sufficiently good weather, control of the air over Europe can be gained and the Nazi war machine smashed within the next few months. Getting back to Berlin, it again appears from the sequence of events that the decision has been made to pass the ball to General Doolittle's Eighth Air

| Battle of Berlin  |                 |
|---|-----------------|
| RAF by Night  | Tons<br>Dropped |
| Nov. 18-19.. "In force" (300 to 450 heavy bombers)..... | 1500            |
| 22-23.. "In very great force" (650 to 800 or more)..... | 2600            |
| 23-24.. "In force".....                                 | 1500            |
| 26-27.. "In force".....                                 | 1600            |
| Dec. 2-3.. "In great force" (450 to 650).....           | 1700            |
| Dec. 16-17.. "In great force".....                      | 1700            |
| 23-24.. "In force".....                                 | 1300            |
| 29-30.. "In great force".....                           | 2400            |
| Jan. 1-2.. "In force".....                              | 1400            |
| 2-3.. — — — — —   | 1000            |
| Jan. 20-21.. "In very great force".....                 | 2600            |
| 27-28.. "In great force".....                           | 1600            |
| 28-29.. "In very great force".....                      | 2000            |
| 30-31.. "In great force".....                           | 2000            |
| Feb. 15-16.. "In very great force".....                 | 2800            |
| Total tonnage, 15 RAF night attacks.....                |                 |
| 27,700  |                 |

| AAF by Day   |  |
|--|--|
| Mar. 3..... Lockheed <i>Lightnings</i> on offensive patrol, first AAF aircraft over Berlin   |  |
| 4..... "One formation of B-17s" Heavy attacks each day by two "divisions" of four-engine bombers (totaling 600 to 800 or more), escorted by AAF <i>Thunderbolts</i> , <i>Lightnings</i> and <i>Mustangs</i> , and RAF <i>Mustangs</i> and <i>Spitfires</i> |  |
| 6.....   |  |
| 8.....   |  |
| 9.....   |  |

### Now this little Imp's got

THE LITTLE IMP is made of petroleum coke.

He used to be a nuisance . . . but the "University of Petroleum," Shell's research laboratories, took him in hand—and he has sprouted wings . . . aluminum wings.

For every pound of vitally needed aluminum produced,  $\frac{3}{4}$  pound of petroleum coke is needed. Formerly, it had to be chipped out of the coking ovens "by hand"—a slow job which tied up the refining unit and took manpower.

Then, well before Pearl Harbor, Shell scientists and engineers first developed "hydraulic de-coking"—a new, quick, mechanical method of recovering petroleum coke in its purest form. The production of petroleum coke is now astronomical!

Thus—one more outstanding contribution to America's war effort from Shell.

\* \* \*

Shell was first, too, to supply American military aviation with a super fuel—100-octane gasoline—giving our planes new speed, flying range, and tactical advantage. Later Shell discoveries vastly increased both power and production of aviation gasoline.

Today, more Shell 100-octane aviation fuel is supplied to aircraft engine manufacturers, for critical test and run-in purposes, than any other brand.

And now, each day, Shell produces more than enough to fuel a bombing mission of 2,400 planes from England over Germany.

Farsighted airport operators will find Shell's wartime popularity a profitable peacetime asset.

# WINGS



FINER FUELS FOR THE AGE OF FLIGHT



Force and let him complete the knockout of Berlin by daylight attacks.

► **Destroying War Factories**—That this is right down Jimmy Doolittle's alley goes without saying. It was the same Spaatz-Doolittle team that put on the terrific aerial barrage resulting in the all-air victory of Pantelleria, which General Doolittle hailed as "a land mark in the history of military aviation." He added, "It was merely a proposition of steadily increasing the Pantelleria bombardment to a point at which it was physically impossible for the defenders to stand up under it.

The capitulation proved conclusively that no agency can stand up under the prolonged, concentrated bombardment of properly selected objectives." He will have many opportunities to repeat this performance in western Europe before victory is won. In the case of Berlin, the problem is to knock out by precision blows in daylight many important war factories missed by the RAF in their night attacks.

► **Berlin Vital Industrial Area**—In the recent discussion in Great Britain and this country in which bombing of enemy cities is deplored, the fact that Berlin is the site of a tremendous concentration of war industries and is thus in itself a prime military target has been generally overlooked. There are literally hundreds of war plants in the greater Berlin area, including many of vital importance to the aircraft industry which is top priority on the Anglo-American strategic bombing program. Aircraft assembly plants, aircraft component parts, engines and parts, ball bearings, instruments and accessories, aircraft armament, ammunition, bombs and rockets, radar and electrical companies, all are here.

RAF reconnaissance photographs taken during February indicate that not one of Berlin's heavily industrialized districts has escaped bombing. Mere tonnage of bombs dropped no longer tells the whole story. Owing to the outstanding success of the Pathfinder techniques, British "area bombing" has become far more concentrated and devastating than even six months ago, and the new 6-ton factory-busters can now be planted with a high degree of precision.

► **The Clean-up** — However, the American daylight boys are now carrying the battle to Berlin with the two-fold object of destroying the remaining war factories and

forcing the dwindling Luftwaffe fighter squadrons into the air to defend such vital targets. More than 300 enemy aircraft were claimed on the heavy attacks against Berlin Mar. 8 and 9, probably equal to three weeks' fighter production at the present reduced scale.

Among the top priority factories smashed, spotted by the *Lightnings* on their offensive patrol of Mar. 3, were the Daimler-Benz engine factory and the Erkner VKF ball-bearing works, the latter almost entirely destroyed as a result of 500 bombs dropped squarely on the target.

The heavy attacks during daylight have so disrupted the city's facilities that organized life has become extremely difficult. Reports that the German machinery of government is now in Breslau, completing a move begun after the last RAF attack (Feb. 15-16), now appear highly credible. Refugees are saying, "Berlin is no longer a capital, no longer a city." One recalls Peking, Nanking, Chungking, and wonders what the Generalissimo, Mme. Chiang Kai-shek and the officials of Free China are thinking when they read such words.

NAVIGATOR

## Fortress' 5,000 hrs. Sets Flight Mark

AAF tightens maintenance program in move to extend life of warplanes.

The Army is learning to keep each plane in service for a longer period through intensification of maintenance procedures. Battle losses are expected but the service life of battle planes has been comparatively short.

That it can be done, has been

## New Mars Record

Naval Air Transport Service's flying boat *Mars* has flown the largest air mail load in history or nearly 800,000 letters from service men in the Pacific area. It deposited them at San Francisco less than a day after leaving Pearl Harbor.

The mail weighed 23,846 pounds. An additional 1,200 pounds of critical war material was carried. The mail load is some 9,000 pounds heavier than any prior air mail cargo.

demonstrated by the 449th Specialized Pilot Training Squadron at Hendricks Field, Fla., where a Boeing *Fortress* powered with Wright Cyclones recently set what is believed to be an all-time record for sustained performance of engines and plane in one day.

► **5,000 Hours' Flight**—The particular *Fortress* used in setting the record is the first four-engined bomber that has ever passed 5,000 hours of flight time, and in setting the one-day operating record made 93 takeoffs and landings in 13 hours, according to Curtiss-Wright Corp.

## Bertrandias Back

Col. Victor E. Bertrandias, former vice-president of Douglas Aircraft in charge of sales, is back in this country after a tour of duty with the fifth service area command in Australia, where he was charged with keeping Douglas and other combat and transport planes flying. During the 18 months he has been on active service overseas, Col. Bertrandias was awarded the Air Medal, for participation in the raid on Wewak.

## Charlton Gets Navy Production Title

Rear Admiral Alexander M. Charlton, has been named deputy production officer of the Navy, under Vice Admiral Samuel M. Robinson, chief of the Office of Procurement and Material, relieving Rear Admiral Timothy J. Keleher, retired, who has been placed on the inactive list.

The Program and Priorities branch has been combined with the Production branch under Admiral Charlton. Capt. John D. Small, heads the Material and Products Control Division, which combines the Materials Division, dealing with supply; the Products Division which schedules components; and the Material Control Officer Division.

## 4,000 Airacobras Sent to Russia

Bell Aircraft has sent approximately 4,000 P-39 *Airacobra* fighters to Russia under Lend-Lease arrangements or about 50 percent of the United States planes made available to the Red Air Force, the company says.

WRIGHT POWERS THE TONNAGE OF THE AIR



## Utility or Waste ?



The Wright forged-head cylinder has permitted a 15% increase in power without increase in weight.

Fuel in an engine cylinder can behave in two ways: it can burn usefully or explode and waste its energy. For best power a fuel must burn. The combustion speed of fuels has been clocked as accurately as a bullet. It's slower—only about 150 ft. per second—but this is about the right flame speed to provide proper pressures on the piston during the entire power stroke.

Detonation, which causes the familiar "knock" or "ping" in a car, results when part of the fuel burns normally and the remainder, under high pressure, explodes like a firecracker—with higher pres-

ures, higher temperatures, and waste of energy.

The problem in engine design is to obtain maximum power at minimum consumption from a fuel without causing detonation. Ample and strategic cooling is important. So is the compression ratio and the degree of supercharging, or mixture pressure at various engine speeds. The mere use of higher octane fuel will not produce more power. The engine must be designed to take the fullest advantage of its better combustion qualities—a continuing research project in the Wright laboratories.

Cyclones and Whirlwinds · Light · Compact · Powerful **WRIGHT** Aircraft Engines



# "American Evaluates Pound Saved on a Plane at \$600<sup>00</sup>"

SAYS CHARLES A. RHEINSTROM,  
V. P. TRAFFIC, AMERICAN AIRLINES



"The necessity for exercising the strictest control over a plane's empty weight is constantly being brought home to the manufacturer by the airlines. Pounds saved on military planes, of course, mean additional speed, range, armor, firepower—factors which cannot be evaluated in money. In commercial aviation, however, a lifetime price tag can be attached to reduced weight. It is estimated at American Airlines that the figure on that price tag amounts to \$600.00 during the first five years of the life of a plane for each pound saved."

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Comparative weights of various types of self-locking nuts comprehensively reviewed for the convenience of aircraft designers, engineers, operating and maintenance personnel. Copy will be sent you, free, upon request.

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**ANCHOR NUT—WING STYLE**  
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*"They Fly With Their Boots On—Lighter"*

Boots Aircraft Nut Corporation, General Offices, New Canaan, Conn., Dept. L

## PERSONNEL

\*\*\*\*\*

Howard A. Benzel has been appointed vice-president in charge of engineering and a director of Scott Aviation Corp., Lancaster, N. Y. He has been chief engineer since 1941, charged with all engineering, research and development work. Before joining Scott, he had charge of all instrument work at Buffalo Aeronautical Corp. Other changes at Scott include: Philip E. Meidenbauer, director of Oxygen Research for Scott. He



Benzel Meidenbauer

was active in the production of British aircraft oxygen equipment manufactured by Scott before Pearl Harbor, and has been responsible for the design and development of portable oxygen equipment for aircraft, including the Emergency and Walk Around equipment. H. F. Whittaker is now director of Chemical Research



Whittaker Cranz

where many recent advancements have been made. He was formerly with DuPont and with the National Research Council in Washington, D. C., as head of the Research Information Service. L. M. Cranz has become personnel director. When he joined Scott, he was a consultant in financial and accounting problems, specializing in development of cost systems.

Edward Curtis Wells, chief engineer for Boeing Aircraft Co., has been named by the Seattle Junior Chamber of Commerce as "Seattle's Young Man of the Year." Wells, 33, is one of the youngest men to hold the position of chief engineer with a major aviation concern in the U. S. In 1934, he became assistant project engineer on the Boeing 229, first of the series of Flying Fortresses. He

was partly responsible for the basic design of Fortresses now being used in Europe. In 1942, Wells received the Lawrence Sperry award "for outstanding contributions to the art of airplane design." During the last three years his major interest and work has been on the Boeing B-29 Super-Fortress.

Perry Yates, general manager of Bechtel-McCone-Parsons Corp., has been elected vice-president. He will continue as general manager of the Birmingham Modification Center where B-24 Liberators are modified. J. C. Franks, controller, has been elected assistant secretary-treasurer of the corporation.

George F. Lewin has been appointed assistant to Harry R. Brashear, manager of the traffic



department of the Aeronautical Chamber of Commerce of America. He has been engaged in traffic and labor relations problems of several industries including the an-

thracite industry.

Raymond J. Cowden has become sales manager of the Lycoming division of Aviation Corp., Williamsport, Pa.



Williams

G. M. Williams, senior vice-president of Curtiss-Wright Corp., has been elected a director with headquarters at the corporation's offices in New York. Previously he was assistant to the chairman of the board of Consolidated-Vultee Aircraft Corp., on leave of absence from the Russell Manufacturing Co., of which he was president.

W. G. Jerrems, acting manager of the Tulsa Douglas Aircraft plant, has been named manager. He succeeded H. O. Williams who is now assigned as Douglas representative at Hammond Aircraft Co., Oakland, Calif. B. C. Monesmith has been named by Douglas to be acting general superintendent in addition to his duties as assistant manager of the Tulsa plant. Harlan P. Hallock has been appointed traffic supervisor in New York City for American Airlines, Inc. He will supervise representatives of passenger traffic, cargo and publicity.



## BOOTS AIRCRAFT STARTS NEW NETWORK SHOW:

Discussing Boots Aircraft Nut Corp.'s new radio program on the Mutual network are (left to right) Glenn L. Martin, guest at the first show; Col. N. Jay Boots, president of Boots Aircraft Nut Corp.; Casey Jones, aviation pioneer, who appears regularly on the new series titled Wide Horizons, and Eddie Dowling, star of the new show. Account for Wide Horizons is handled through Cecil and Presbrey agency.



Brig. Gen. George L. Usher has been made deputy commanding general of the 13th Air Force in the South Pacific. He has been in the South Pacific theater since 1942.

Joseph C. LeBlond, formerly works manager of St. Louis Aircraft Corp., has been appointed assistant factory manager of Fairchild Aircraft Division, Burlington, Vt.

Dr. Steven E. Mautner, chief engineer of Skydyne, Inc., of Port Jervis, N. Y., has been appointed executive vice-president.



He was a pioneer in the sandwich type of monocoque construction, which recently became famous through the deHavilland Mosquito bomber. He has spent five years with Skydyne, which specializes in building true monocoques of the sandwich type.

C. H. Coats has been appointed field service representative of the Ryan Aeronautical Co.'s exhaust system division. Field instruction in the installation and servicing of Ryan manifolds will be his chief duty which indicates the extent of this San Diego Company's activity in manifold production.



J. B. Smith of CAA, formerly in the Airway Traffic Control center at La Guardia Airport, has been appointed chief controller of the center at Washington National Airport. Before joining CAA in 1939, Smith was with Eastern Air Lines.



Stanley S. Cammer, inspector of aircraft of the Douglas Aircraft Corp., in Santa Monica, has returned from a trip to Natal, Brazil, Gura and Eritrea.

Walter A. Vane, flight superintendent at Edmonton, Alberta, on the Northwest Airlines military cargo air route to Alaska for the last two years, was named chief meteorologist for the NWA eastern region. S. N. Gulick, Northwest station manager at Fargo, has been named to



#### 15 YEARS WITH TWA:

E. L. "Ernie" Smith has been awarded Transcontinental and Western Air, Inc.'s 15-year pin by Vincent P. Conroy, TWA vice-president in charge of traffic, who flew to the West Coast from Kansas City for the occasion. Smith is assistant to Conroy.

the same position at the airline's Twin Cities base at Wold-Chamberlain field. He has been succeeded at Fargo by W. L. Hollingsworth, who has been at Edmonton, Alberta.

H. K. Vieman, formerly of Cleveland, succeeds Richard F. Dorsey as United Air Lines' assistant station manager in Washington. Dorsey goes to Chicago as manager of station cargo service.

Major Paul Morton, Air Transport Command pilot who formerly flew for Braniff Airways, has been awarded the Distinguished Flying Cross.



#### MAP STUDY:

Two well known Canadian Pacific Airlines officials study the Canadian map, in this new photo. They are G. W. G. McConachie, general manager of CPA's western routes, and C. H. Dickens, vice-president and general manager.

Wilfort J. Kamerer (left), superintendent of the Norwich plant of Hamilton Standard Propellers, a di-



vision of United Aircraft Corp., has been transferred to the main plant at East Hartford as staff assistant in the office of the general superintendent. Carl A. Krause (right), superintendent of the Westerly, R. I., plant, will assume the added duties of plant superintendent at Norwich. J. V. Johnson will assist Krause at Westerly and Adolph Hartiz at Norwich.

Dr. Harry L. Andrews, professor at Northwestern University, becomes



coordinator of training for Pennsylvania-Central Airlines to direct courses given in various departments and to supervise material used in these courses. He will act as assistant to PCA director of Training James T. Rinker. He is noted for his work in visual education.

William Hopp, Dayton mail and express manager for Transcontinental and Western Air, Inc., has been promoted to central region mail and express manager with offices at Chicago. Hopp has been with TWA for over two years and held his Dayton position for six months before his recent promotion.



William A. Pullin has been appointed assistant director of United Air Lines' school and college service for the eastern area with headquarters in New York City. He is a former high school teacher at Maplewood, N. J., and has been a member of the faculty of several preparatory schools in the east.



# Phillips ...

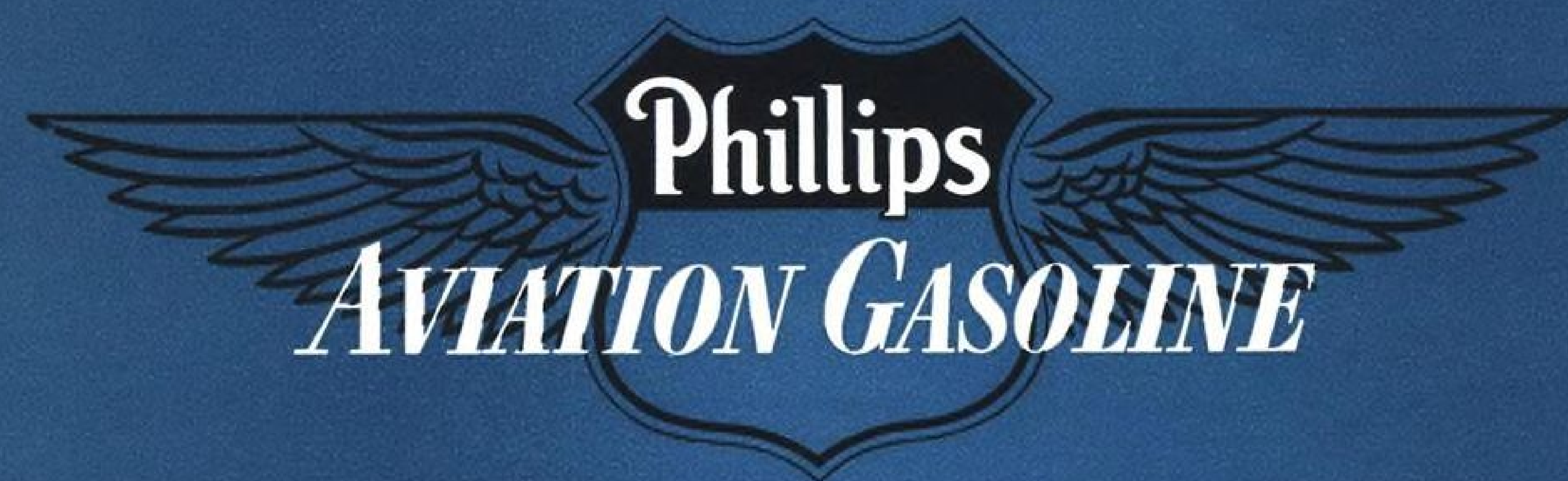
## one of the first

## and today one of

## the largest makers

## of high octane

## aviation fuels



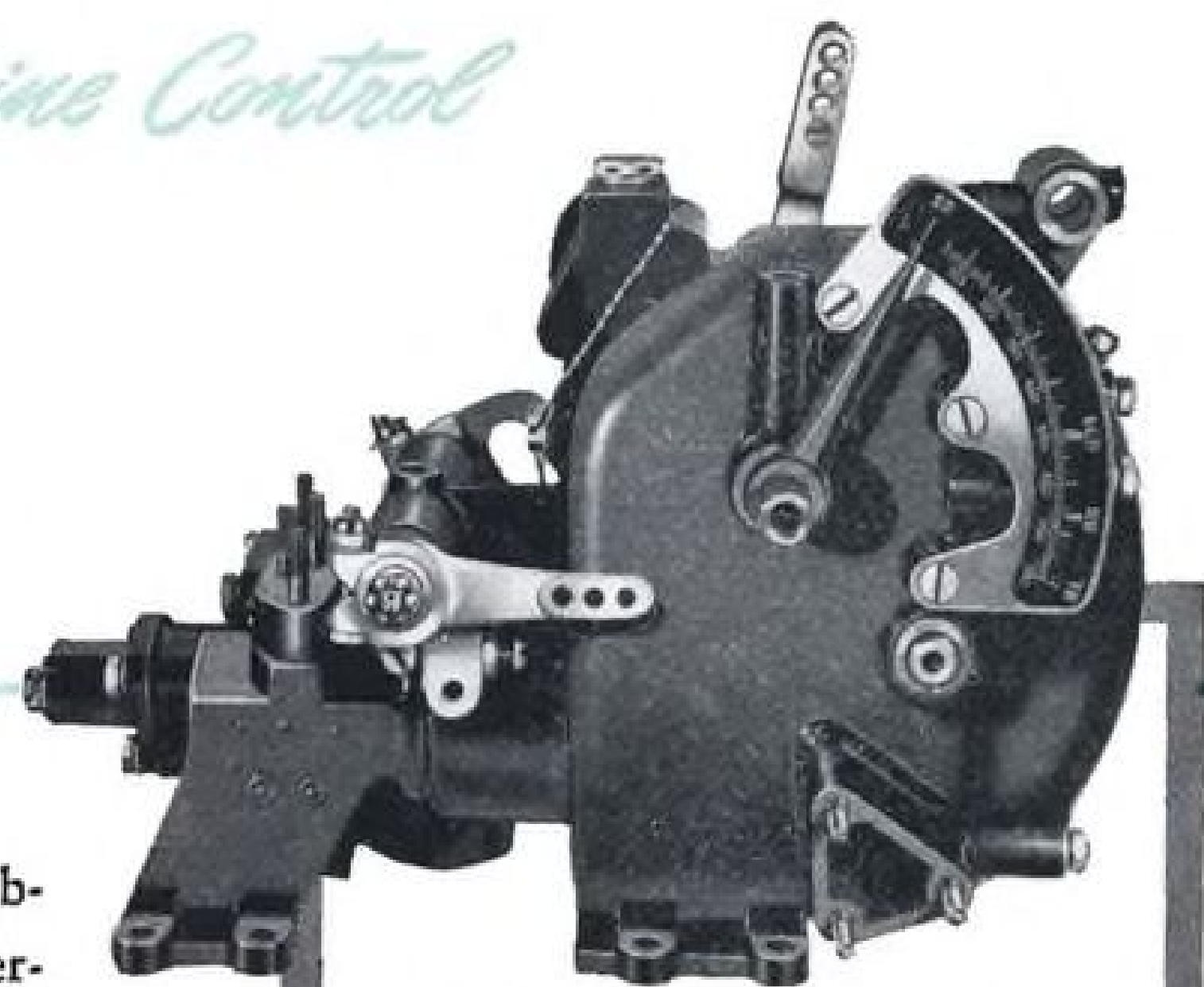
PHILLIPS PETROLEUM COMPANY, BARTLESVILLE, OKLAHOMA  
A major supplier of 100 octane gasoline to the Army, Navy, and United Nations air forces



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WITHOUT attention from the pilot, the Simmonds-Hobson Automatic Engine Control assures efficient power-plant operation under varying flight conditions. A notable development in aircraft engines, it is equivalent to a third hand for the pilot—giving automatic control of manifold pressure (boost) and mixture, thus providing engine protection and economy of operation.

Simmonds-Hobson Automatic Engine Controls have been specified for the most advanced types of fighter planes, where they are performing an outstanding job under exacting military requirements. Through continued research and refinement, new and more advanced designs, extending to the propeller governor, spark, and other engine functions, will be available to render increased service for peacetime assignments.



The Simmonds-Hobson  
Automatic Engine Control  
Mark 46

### Simmonds Equipment Flies with Every Type of Allied Aircraft

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## AIRCRAFT PRODUCTION

\*\*\*\*\*

### Aircraft Industry Does Record War Job at Low Profit Level

Earnings under all other major manufacturing divisions, SEC reveals in comprehensive survey of corporation incomes.

The outstanding job being performed by manufacturers of aircraft and aircraft equipment on a small margin of earnings is pointed up by a comprehensive survey completed by Securities and Exchange Commission on profits and operations of leading industry groups. The report is based on registration statements and annual reports filed under the Securities Act of 1933 and the Securities and Exchange Act of 1934.

The aircraft industry is doing its record wartime job at a lower profit margin than any other major industry surveyed by the SEC, it was pointed out by the Aeronautical Chamber of Commerce. The survey, covering 1942, showed a profit of only 2.6 percent on sales of aircraft, a sharp decline from pre-war years.

► **Low Profit Margin**—Following the aircraft industry at 2.6 percent, the survey showed: rubber 3.5 percent; railroad equipment 3.6 percent; electrical equipment 4.1 percent; industrial machinery 5.3 percent and agricultural machinery 6.1 percent.

The SEC's survey also showed for the various industry groups covered, net profit in percentage of net worth, which in the case of the aircraft industry emphasized the great expansion made in order to meet constantly accelerating schedules necessary to build America's airpower.

► **Sales Volume Return**—The Chamber statement pointed out that the true measure of the aircraft industry's profit level is the return on sales volume, and held that the use of net worth as a yardstick for profits is unjustified in considering the aircraft industry in view of the tremendous expansion of the past few years. Virtually all manufacturers in the aircraft industry started with comparatively small capital.

"The typical aircraft company

has been drained of working capital through greatly expanded operations, but its risks and responsibilities are continuing," the Chamber statement said. "The industry's small profit margin must be maintained if it is to survive after the war and fulfill its peacetime obligations to the nation."

► **Net Sales**—The SEC survey covers four volumes dealing with data on profits and operations of 1,106 companies and their consolidated subsidiaries in 75 manufacturing groups. Volume II covers 15 industry groups, comprised of 271 corporations, and includes 34 aircraft and aircraft equipment manufacturing companies.

Net sales of the 34 companies totaled \$4,514,642,000 in 1942, compared with \$1,704,322,000 in 1941 and \$86,093,000 in 1936, according to the combined industry chart.

Net profit before income taxes, as a percentage of net worth, was 179.2 in 1942 and after discharge of the tax obligation 37.2 percent. In terms of cash this meant \$556,-579,000 before, and \$115,403,000 after taxes.

► **Figures Prepared**—The figures presented in the survey, which was prepared by a group headed by Ralph H. Krapp of the Trading and Exchange division, are, in the case of some companies, adjusted after renegotiation of war contracts. Naturally, they would be materially reduced in percentages if all companies had made such adjustments.

Obviously those companies showing the greatest margin of profits, before and after taxes, had made no provision in their reports for renegotiation. Consequently, the result of renegotiation will have a material adverse effect on the amount of profit for the year 1942, but it is impossible to estimate the final effect at present.

► **Profits Reduced**—In all cases, the percentage of profit before and after income taxes was considerably less in 1942 than in 1941, since the law covering renegotiation of contracts did not become effective until April, 1942.

On the basis of these qualifying factors, the table on page 26 illustrates the pattern of profits for the years 1936 to 1942 inclusive.

Air Associates, Inc., showed net profit before and after income tax-



### HOUSE GROUP VISIT CURTISS-WRIGHT:

Rep. Melvin J. Maas, of Minnesota, center, ranking minority member of the House Naval Affairs Committee, examines a model of a Curtiss Navy Helldiver at a surprise visit of a subcommittee to the Columbus plant of Curtiss-Wright Corp. Other interested spectators are, left to right: Rep. Robert A. Grant, Indiana; Rep. William E. Hess, Ohio; Guy W. Vaughan, Curtiss-Wright president; J. P. Davey, general manager of the Columbus plant, and Rep. W. Sterling Cole, New York.



# Pattern of Profits 1936-1942

|   | '36  | '37  | '38  | '39  | '40  | '41   | '42   |
|---|------|------|------|------|------|-------|-------|
| Net profit before Income Taxes as a percent of sales.....     | 10.0 | 10.3 | 14.4 | 15.9 | 24.0 | 24.4  | 12.3  |
| Net profit after Income Taxes as a percent of sales.....      | 8.3  | 7.9  | 11.6 | 12.3 | 12.0 | 7.0   | 2.6   |
| Net profit before Income Taxes as a percent of Net Worth..... | 10.5 | 13.5 | 24.0 | 31.6 | 82.8 | 182.4 | 179.2 |
| Net profit after Income Taxes as a percent of Net Worth.....  | 8.7  | 10.4 | 19.3 | 24.3 | 41.5 | 52.8  | 37.2  |

es as a percent of net worth, 77.1 and 28 percent, respectively; Aircraft Accessories Corp. showed 175.8 and 64.3 percent, respectively; Aviation Corp., 55.1 and 23.2; Beech Aircraft 563.1 and 153; Bell Aircraft 403.7 and 77.3; Bellanca 200.8 and 143.7; Boeing 200.3 and 33; Breeze Corp., Inc. 152.7 and 42.1; Brewster, only aircraft manufacturing company to show a loss in 1952, showed a drop of 58.6 percent; Cessna Aircraft Co. showed profit of 432.6 and 42.8 percent, respectively; Consolidated 578.3 and 117; Curtiss-Wright 147.4 and 21.6, respectively; Douglas 127 and 31; Fairchild Aviation Corp. 175.4 and 41.2; Fairchild Engine and Airplane Corp. 158.5 and 25.8; Grumman 318.6 and 40.9; Irving Air Chute Co., Inc. 83.6 and 31.5; Jacobs Aircraft Engine Co. 679.2 and 175.2; Lockheed 231.5 and 38; Glenn L. Martin 145.2 and 28.2; Menasco Mfg. Co. 102.9 and 32.5; North American Aviation 272.1 and 65.8; Republic 177.2 and 35.7; Ryan Aeronautical 120.6 and 26.6; Solar Aircraft 60.9 and 24.9; Sperry 133.1 and 26.5; Steel Products Engineering Co. 98.5 and 28.8; United Aircraft Corp. 147.6 and 43.1; United Aircraft Products, Inc. 246.2 and 63.7; Vultee 271.2 and 47.3; Waco 29.9 and 13.4; Warner 35 and 9.4; and Wright Aeronautical 245 and 39.7.

## Ballard Gets Order For TBF Mockups

An order for construction of a substantial number of *Avenger* TBF-1 aircraft training replicas has been given to Ballard Aircraft, Inc., and work is now starting in the company's factories in Elkhart, Ind., and Arthurdale, W. Va.

The replicas are full size fuselage mockups, used for instruction of ground forces, developed by the special Devices Division, of the Navy's Bureau of Aeronautics.

► **Plywood Work Held Up**—Ballard, formerly Hoosier Aircraft Co. of

Elkhart, was founded with the long range purpose of manufacturing civilian airplanes in plastic bonded plywood, but this activity has been postponed and the company has manufactured and made extensive deliveries of aircraft components in wood and plastic bonded plywood such as spars for gliders, gunner seats used in power-operated gun turrets, tail surface assemblies and complete wing panels with ailerons and flaps.

## Instrument Gives Net hp. and B.M.E.P.

A new instrument which permits a direct reading of both the net horsepower output and the B.M.E.P. (brake mean effective pressure) from the same dial has been developed by Kollsman Instrument division of Square D Co. in conjunction with the National Advisory Committee for Aeronau-



tics and leading radial engine makers.

Utilization of only one dial eliminates numerous calculations of the flight engineer with the consequent possibility of error and makes it easier to see the direct result of adjustments to the controls in their effect on the output of the engine. Kollsman engineers foresee increased range for aircraft through simplified and more accurate power control.

► **Continuous Indications Given**—The dial is so arranged that the same indicator gives the operator a continuous indication of B.M.E.P. at all times on the inner dial and a reading of Brake Horsepower on the outer dial when the correct rpm. is set on the subdial.

Kollsman engineers say the instrument, operating as it does from the hydraulic-type torque balance units which function from the planetary propeller reduction gear,

such as are now available on all large radial aircraft engines, gives the operator an indication of net shaft horsepower output not obtainable in any other way.

## More Plastic Parts Forecast by Martin

Reports on lucite and other transparent materials already in use on *Mariner* training mockups.

Substitution of transparent plastics for metal castings in airplane working parts is forecast by Glenn L. Martin, who predicts it will mean further savings for airline operators and further safety for airline passengers.

Lucite and other transparent materials already are being used successfully by the training section of Glenn L. Martin Co. service department in fuel selector valves, turret valves, variable volume pumps and fuel line sections of the PBM-3 *Mariner*.

► **Mockups**—Martin explained that the use of such materials is confined at present to operating mockups used to train student flight engineers and service men, but added that with the improvements in chemical resistance and tensile strength which he expects from the plastics industry, it will be only a matter of time before they will be used on regular production airplanes.

Emphasizing the economy and safety features, Martin pointed out that "bringing complicated working parts into the open will not only cut down on the time required for maintenance inspection, but will permit a more thorough and accurate check than can be obtained by present time-consuming methods."

► **Easy Check on Trouble**—"When trouble does develop," he went on, "the service engineer will be able to locate its exact seat in a matter of seconds by merely examining the flow of fuel or hydraulic fluid through the various transparent lookout stations. Failures in pumps and valves will be readily apparent and it will be a simple matter to catch troubles before they become serious."

At the Martin service training school, lucite is now being used successfully on three major items. These include a PBM-3 main engine fuel selector valve, a deck turret hydraulic control valve and a Vicker variable volume pump.



**BLOOD DONATIONS** by the hundreds have been made by Breeze workers to the Red Cross Blood Bank.



**SALVAGE CAMPAIGNS** both at home and at their work are aided by the efforts of Breeze men and women.



**WAR BOND DRIVES** have been enthusiastically supported in addition to payroll deduction purchases.



**RED CROSS** ambulance, station wagon and special car donated by management of Breeze to Motor Corps.

# Our Third Front

VICTORY DEPENDS ON WHAT WE DO AT HOME AS WELL

THERE IS a Third Front, here at home, on which the men and women of Breeze are fighting. Putting 10% and more of their pay in war bonds, giving blood regularly to the Red Cross Blood Bank, cooperating to the fullest extent in civilian defense activities and government war campaigns, Breeze workers are a part of the great team that is backing up the boys at the front.

Without this teamwork, the efforts of our fighting men might well be wasted.

And in addition to their outside work, the men and women of Breeze are on the job day and night, turning out in tremendous quantities the well-known Breeze products which are serving America today on fighting fronts the world over.

**Breeze** **BREEZE MARK**  
CORPORATIONS, INC.  
NEWARK, NEW JERSEY

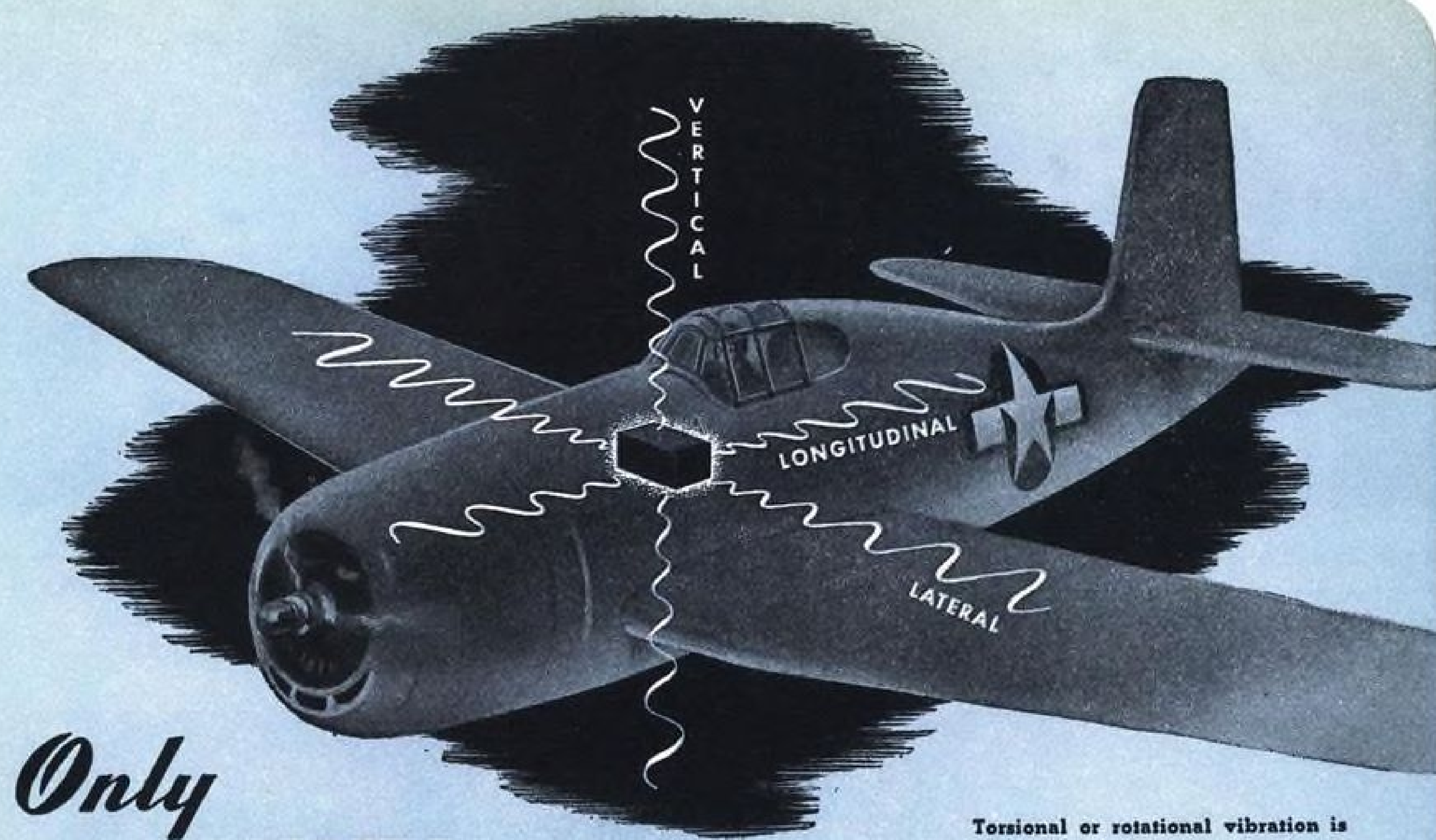
PRODUCTION FOR VICTORY • PRODUCTS FOR PEACE



A Few of the Many Breeze Products in the Nation's Service

Radio Ignition and Auxiliary Shielding • Multiple Circuit Electrical Connectors • Flexible Shielding Conduit and Fittings • Cartridge Engine Starters • Internal Tie Rods • Elevator and Rudder Tab Controls • Flexible Shaft and Case Assemblies • Aircraft Armor Plate





# Only 1 WAY to Control 3 WAY Vibration

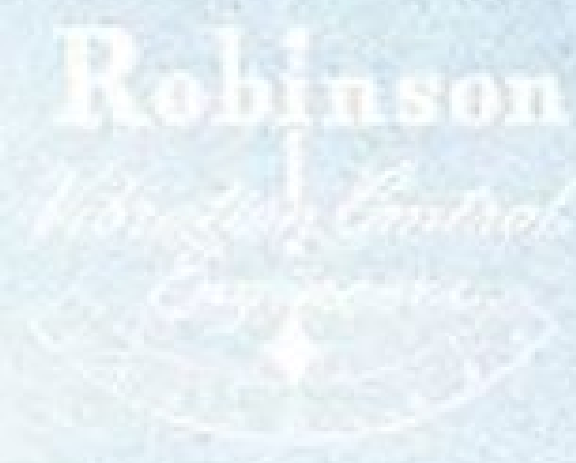
Torsional or rotational vibration is often caused by a combination of impulses from two or more directions.

**A**ERONAUTICAL engineers, engaged in designing and specifying radio equipment, aerial cameras, and delicate flight instruments, are confronted with a problem — vibration control. The great power of the modern airplane has made vibration more serious than ever.

Robinson engineers have found that high-powered airplanes create vibration in three directions. In addition, varying amounts of torsional vibration are encountered — caused by a combination of impulses from two or more directions.

All attempts to control 3-way vibration by vertical absorption alone, with the conventional shock mounts, have been unsuccessful. Robinson engineers have developed a new principle for absorbing such vibration with a single, simple shock mount assembly.

We have prepared an analysis of this problem and its solution in the form of a booklet describing 3-dimensional vibration in airplanes and the Robinson principle, together with photographs and test curves of a few of the many successful Robinson-designed shock mounts. We will be glad to send you a copy.



**ROBINSON AVIATION, INC.**  
730 FIFTH AVENUE • NEW YORK 19, N. Y.

## Formation of Aviation Commission Urged to Map Industrial Policy

United Aircraft's Vice-Chairman Wilson asks for body similar to Morrow group to recommend Congressional program for post-war reconversion.

Necessity for a new policy providing for optimum conditions under which American airpower could develop naturally has been emphasized by Eugene E. Wilson, vice-chairman of United Aircraft Corp., who suggested appointment of a commission of responsible citizens who can recommend to Congress an American air policy which will reflect the point of view of all responsible authorities and thus command the confidence and support of the American people.

He points out that after such a policy has been crystallized the United States would be ready to sit down in an international meeting and, with full regard for our national interests, try to evolve a world policy designed to preserve peace and promote prosperity.

► **Economic Club Speech**—Wilson outlined his views before a meeting of the Economic Club in New York.

Wilson recalled that in 1925, in response to charges by Gen. William E. Mitchell that the Army and Navy were stifling aviation, Calvin Coolidge selected a committee of nine under Dwight Morrow to judge the matter.

The group listened to about 100 witnesses who presented many

conflicting opinions, Wilson recalled and added that "yet after a brief period the Board emerged with a simple statement of sound principles. Alongside the sensational Mitchell charges, they seemed unexciting, yet they became the Magna Charta of American aviation."

► **Long-Range Program Urged**—The Board held that a strong air force is essential to the national defense; that the backbone of the air force is a strong private industry; and that to keep industry strong the Government must have a continuing, long-range procurement program calculated to promote rapid technological progress. The performance of the American aircraft industry today derives almost wholly from this policy, although, as Wilson pointed out "at times, it was neglected by the Government."

Analyzing these principles, it evolves that they fix the responsibility for national defense on Government and industry jointly and they recognize advanced technology as a vital strategic asset. Under these principles, Wilson noted, private manufacturing industry planned for defense, and arrived at the outbreak of the

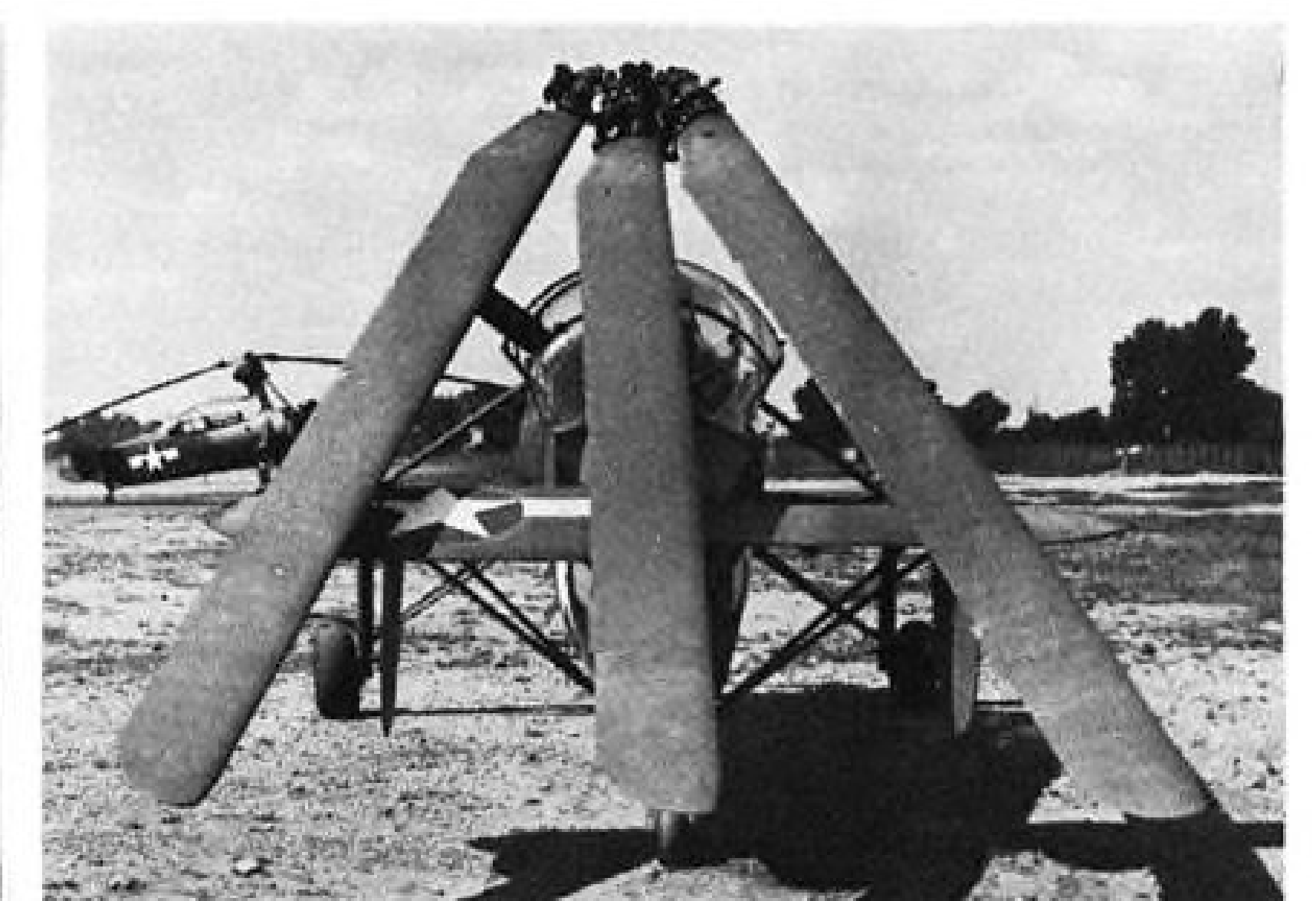
European war with two vital assets: first, superior technology, and second, the ability to expand around a new production principle, that of flexibility.

► **New Commission Urged**—Wilson believes we find ourselves now in a new situation similar to that which caused President Coolidge to appoint his Morrow Board, and thereby recommends a new commission.

► **Termination Problem**—"If war contracts are terminated in the ruthless manner of World War I, the industry can hardly survive," he said. "This is especially true in this war, since profit limitation has precluded accumulation of reserves adequate to carry through termination under any other than orderly procedure. If surplus war stocks are dumped, as in World War I, its market will be impaired. If surplus war plants are government-operated, in competition with private industry, the results would be fatal, for no seller can compete successfully with his customer."

Wilson emphasizes that, since the backbone of air power is a strong private aircraft industry, the public interest demands swift and orderly termination of contracts, disposal of surplus goods, and courageous handling of surplus plants.

► **War Surpluses**—The public interest, he continues, demands a high level of employment, and forced liquidation of these items, as if they were commercial assets, with the idea of applying the recovery to reduce the public debt, would produce but a



### FIRST AAF PHOTOS OF NEW KELLETT AUTOGIRO UNDERGOING TESTS:

Two views of new Kellett Autogiro, the YO-60, now under test with other versions of rotary-wing craft by the Army. Picture shows the blades folded back for ease in storage or camouflage. The other was taken a moment after takeoff. The planes are ex-

pected to be used in observation and liaison work. The new autogiro is powered with a 300-hp. Jacobs engine. Excellent visibility is claimed by installation of a large bubble-type canopy and windows in bottom of fuselage.



small percentage of the original cost. The return could hardly begin to approach the outlay for relief which would inevitably result from unemployment produced by disarranging the economy.

► **Nucleus**—"If we have a clear recognition of these principles and courageous administration," Wilson says, "we can emerge with a strong nucleus of an aircraft industry derived from those companies which have performed best in the war effort, particularly along technological lines."

## Six-Ton Camera

Huge model cuts time on production of 'Fortress' templates.

A six-ton camera and three-ton printing machine are cutting days from production time of *Flying Fortresses* at Boeing plants, turning out templates formerly built by hand from blueprints.

Chief value of the template camera lies in the speed with which revisions in construction detail can be made. Another advantage lies in the fact that hundreds of copies of a template can be made from one photographic negative and shipped to plants over the country. Under former methods, these would have required individual copying. With some 30,000 templates required for the *Fortress*, the savings are obvious.

► **Master Layout**—The master layout is laid on a lacquered sheet of thin steel, which then is photographed with a tolerance of not more than one-thousandth of an inch. The sensitized steel negative is then transferred to a developing tank that uses nearly one ton of hypo crystals for each solution. It is then checked for final accuracy and cut, routed or drilled according to surface outlines.

### Aviation Calendar

- Mar. 22—Wings Club, first annual dinner, Waldorf-Astoria, New York.
- Mar. 24-28—Rededication of Indianapolis Municipal Airport as Weir Cook Airport.
- Mar. 25-Apr. 1—Aviation Exposition, Greater Twin Cities Chapter of National Aeronautical Association, Minneapolis.
- Mar. 28-30—Greater New York Safety Council's annual convention and exposition, Hotel Pennsylvania.
- Apr. 5-7—SAE National Aeronautic Meeting, Hotel New Yorker in New York.
- Apr. 24—East and West Coast Aircraft War Production Councils, joint meeting, Los Angeles.
- Apr. 27-28—National light aircraft meeting, Institute of Aeronautical Sciences, Detroit.
- Apr. 28-30—Southwest Aircraft and Accessories Exposition, Dallas.



Boeing's Six Ton Camera: Glenn H. Jones, Boeing's photo template chief, contemplates a vest-pocket version beside the 12,000-pound model that speeds template work on *Flying Fortresses*.

## Bendix Workers Vote Post-War Preference

More than 40 percent of war workers in Bendix Aviation Corp. plants do not wish to return to their former occupations after the war and are hopeful of remaining in their present field, despite the fact that 68,000 are now employed, compared with a pre-war total of less than 10,000.

In a comprehensive survey designed to provide Bendix executives with information of employee attitudes and other questions, 41.8 percent of the employees replying do not want to go back to their former occupations. Some 18 percent expect to return to former jobs and nearly 25 percent are undecided.

► **Post-War Problem**—When it is considered that former employees of Bendix now in the armed services are entitled to return to their jobs, the post-war problem of even this one relatively small employer of war workers is emphasized, with well over 30,000 wanting to remain with a company which normally might be in a position to employ only one-third of this number.

It is regarded as significant that approximately the same percentage of Bendix employees reported that they owned the homes in which they live—42.3 percent.

Seventy-three percent said they considered absenteeism a serious problem and more than 5,000 commented on the causes, making 2,225 suggestions for reducing absenteeism.

## Ford Unit Supplies Urgent B-24 Orders

A centralized depot for emergency shipment of spare parts for B-24 *Liberators* is now handling 80 percent of this type shipment, Ford Motor Co. reveals, with as many as 800 emergency orders being handled in a single day from the new spare parts building at Willow Run.

► **Spare Parts Supplied**—Ford estimates also that it is supplying more than half of the spare parts used on the B-24's and said 90 percent of the parts used on all models are interchangeable. Production of spares now is keeping pace with the production of B-24's.

# SOMETHING OLD and SOMETHING NEW

This is the story of broaching . . . Broaching — the machining operation which has so vastly changed the cost on mass production precision parts . . . Broaching — which is as old as man's search for tools, as new as tomorrow's dreams.

At the turn of the century the demand for mass production precision parts welcomed with open arms the Lapointe invention of the pull principle in broaching and the development of engineered design in broaches and broaching machines. America's mass production dates from this beginning. It was by broaching that the automobile industry and dozens of other producers of consumer goods were able to mass produce interchangeable parts. It is by broaching that aircraft and armament parts are exceeding production schedules. It will be by broaching that thousands of products from safety razors to steam shovels will be made better, quicker and cheaper.



Founded in 1902, The Lapointe Machine Tool Company is the world's oldest and largest manufacturer of Broaches and Broaching Machines.

The **LAPOINTE** Machine Tool Company  
HUDSON, MASSACHUSETTS, U. S. A.





FREE ENLARGEMENTS (14" wide) of this cartoon by Edmund Duffy, three-times winner of the Pulitzer Prize, are now available. Write, on your business letterhead, to: Bruce Livie, President, Liberty Motors & Engineering Corp., Baltimore-1, Md.



LIBERTY TEST UNIT (Type 103) saves much time in testing all instruments carried by aircraft. Top of unit provides handy work bench when open—serves as tool storage box when shut.

## Test ALL Aircraft Instruments with this ONE Portable Unit Quickly... Completely... Accurately

THIS Liberty Test Unit (Type 103) is complete, compact and portable. Rolls up to the ship and thoroughly tests and calibrates *all* types of aircraft instruments, including their accessories and installation, in a few hours. Saves days over other methods. Self-contained and may be completely closed and locked. Because of its versatility and high efficiency, this unit is extensively used by the U. S. Navy, the British, Canadian and Russian Governments, as well as by airlines and aircraft builders. Write for complete information.

**LIBERTY MOTORS  
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BALTIMORE-1, MARYLAND

MANUFACTURERS OF AIRCRAFT SERVICE TOOLS AND TEST EQUIPMENT

## TRANSPORT

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### CAB Report on Feeder Survey Assailed by ATA as Short Sighted

Recommendation of Examiners Madden and Beitel that expansion of existing routes be limited to cities over 25,000 population particularly criticized as leading to needless subsidy and confusion.

By MERLIN MICKEL

The report by two examiners on the Civil Aeronautics Board's local - feeder - pickup investigation was caught last week in a cross-fire of criticism, objection and exception, with the Air Transport Association one of two dozen or more who took issue with the findings.

Since ATA represents the domestic airlines, it was significant that its statement stressed one point raised by the examiners. This was their recommendation that route expansion of existing air carriers be limited to cities of 25,000 or more population.

▶ **Arbitrary Limit**—Examiners William J. Madden and Albert F. Beitel had suggested this as a "working criterion"—an arbitrary limit below which additions to existing routes would be made only on showing their effect on later opening and operating feeder services in the same general area. Their report showed 412 places or over, 180 of them designated in outstanding air carrier certificates.

Such a limitation, ATA contended, "would violate sound transportation principles, invite a wholly needless burden of govern-

ment subsidy, and threaten the future coherence and efficiency of the air transport system." The Board should aim, it was said, at a system under which carriers, present and future, would have opportunity to attain self-sufficiency, without dependence on government subsidy or disproportionate divisions of joint rates.

▶ **Complications**—The Association characterized as "grave error" any assumption, born of wartime conditions, that existing or prospective trunk air routes will not need strengthening. It forecast new complications in common carrier air transport, improved speed and efficiency, and the "inevitable growth of private carriage by air."

"It is evident," the letter stated, "that if there is to be a successful air carrier system, plans for its growth cannot be based upon any assumption that the operator of a trunk line should be excluded from the development of traffic to new points which he can economically serve."

▶ **Discrimination**—The suggested restriction, ATA argued, would delay service to smaller communities and discriminate against them in such wise that their eventual service would be the "worst and most expensive," rather than the best and most economical.

"However many non-truck routes or areas there may be which



#### CPA DISTRICT SUPERINTENDENTS MEET:

Canadian Pacific Airlines district superintendents met at Edmonton to go over operational problems with C. H. Dickens, vice president and general manager. Back row, left to right: R. B. Phillips, Alberta district superintendent and acting superintendent Yukon district; Capt. Russ Baker, assistant superintendent Yukon district; O. H. Johnson, regional traffic

manager, western lines; W. J. Windrum, Saskatchewan district superintendent; W. T. Bunn, assistant superintendent, Mackenzie district. Front row: E. R. R. Field, British Columbia district superintendent; G. W. G. McConachie, general manager, western lines; Dickens; R. W. Ryan, general superintendent, western lines; W. E. Gilbert, Mackenzie area superintendent.



are not to be served by the trunk operators, no artificial limitation should be imposed which would effectually foreclose for any class of our communities the attainment of the highest possible standards of air service." Of equal importance, the Association added, was that issues in the feeder service studies be determined as part of the whole post-war air transportation network problem, rather than as though feeder service were "a thing apart."

► **Principles**—With this statement of ATA's stand, Edgar S. Gorrell, president, submitted a discussion of general principles that should govern expansion of the domestic airline system, by Dr. Lewis C. Sorrell, the Association's research man. Merely submitted for the Board's information, the Sorrell study was not intended to reflect ATA views, and has not been acted on by the Board of Directors.

Not all the comment received by the examiners was as critical as the Association's. Several letters came in complimenting them on their carefully compiled report. But the majority took issue.

► **Greyhound Statement**—Among them was a printed statement from Greyhound Corp. which not only took exception to the report in eight instances, but renewed Greyhound's request, already in a motion, that the Board hold up issuance of permanent certificates "in order that there need be no sacrifice of the post-war air transportation system to serve the demands

of the present." Greyhound also requested oral argument.

Greyhound and others wanting oral argument are going to have their wish granted. The Board has set April 5 as the date. In view of comments already at hand, which have been coming in since the Madden-Beitel report was announced Feb. 9, the Board has decided tentatively to allow two days for hearing arguments. Time allotments will be made to those desiring to be heard, who are requested to inform Chief Examiner C. Edward Leasure of the approximate time they will require and other details.

The ground to be covered seems to fall into five categories of applications: by presently operating carriers, surface carriers, prospective new carriers, helicopter carriers, and pickup carriers.

## New Examiners

CAB adds to staff in attempt to keep pace with new applications.

In an effort to keep abreast of the flood of applications before it, the Civil Aeronautics Board has added four new examiners to its staff in recent months. Wartime demands have depleted the staff, which is faced with an immense amount of business, and the additions will help meet the problem.

H. Heinrich Spang came to the Board in October, 1943, with 13 years' experience on the legal staff of the Interior Dept.

► **Legal Training**—Barron Fredricks is a graduate of Georgetown University. He practiced law in New York eleven years prior to joining the informal proceedings section of the CAB and became an examiner in the summer of 1943.

F. Merritt Ruhlen, Ohio State and Harvard, practiced law in Rochester, N. Y., for five years. He enlisted in the Army as a private and received a medical discharge after eight months' service. He has been with the CAB since last January.

William F. Cusick is a graduate of George Washington and Columbus Universities. He was in a Washington law office five years, joining the CAB in November, 1943.

## Curb on Foreign Air Carriers Urged

Labor chief warns of move to let outside lines carry cargo beyond port of entry.

Granting of the right of innocent passage in the United States to foreign airlines will only make it a matter of time until American passengers and freight will be moving from interior cities on these carriers, in the opinion of Harvey W. Brown, president of the International Association of Machinists (AFL).

Brown, one of the authors of a resolution dealing with post-war air commerce adopted by the Railway Labor Executives' Association, charged that there is "activity influenced by England" to bring about an arrangement whereby foreign airlines could go beyond the port of entry. Brown's attitude was that "it will be only a matter of time until there will be criticism from persons seeing half-empty planes and agitation for granting the foreign airlines permission to pick up passengers at interior American points. The resolution was handled by a committee consisting of Brown and J. G. Luhrs, executive secretary-treasurer of the Association.

► **Forward Step**—The railway labor executives declared a "great forward step" would be taken "if each type of transportation should be required to bear the full cost involved in transportation by that group, as a result of the elimination of subsidies." This, the resolution states, would tend "toward bringing about fair and just competitive conditions among the several types, establish-



## Mustangs Raise Hell in Heavens

Seven miles upstairs, Yank pilots ride the wings of fierce-charging Mustang fighters, dealing death to Nazis desperately trying to intercept our high-altitude heavy bombers. Here in the arctic cold of the stratosphere a chronicle of victory is sky-written by white vapor trails and by the searing flame of an enemy plane in its last screaming earthbound plunge. The men and women of North American Aviation are proud of the "angels from hell" who pilot these avenging P-51 Mustangs—proud, too, of their own vital part on America's production front.

## North American Aviation Sets the Pace

We make planes that make headlines . . . The B-25 Mitchell bomber, the AT-6 Texan combat trainer, the P-51 Mustang fighter (the A-36 fighter-bomber), and the B-24 Liberator bomber. North American Aviation, Inc. Member, of the Aircraft War Production Council, Inc.



## NEW EXAMINERS HELP CARRY HEARING LOAD:

Four recent additions to CAB's staff of examiners are shown grouped around veteran William J. Madden (seated). Standing, left to right, are H. Heinrich Spang, F. Merritt Ruhlen, William F. Cusick and Barron Fredricks. The Board now has twelve examiners aside from Chief Examiner C. Edward Leasure and his assistant, Francis Brown.



# "SOUTHEASTERN"

*the New Name of Georgia Air Service, Inc.*

In order to more accurately describe the scope of our operations, we have changed our name to Southeastern Air Service, Inc. This is a logical step, for the organization which was known as Georgia Air Service, Inc. has "grown up," and renders air service throughout the Southeast. Our organization and our work remain the same. Our war-time job continues to be concentration on Primary Training for the Army Air Forces.

- ★ No Change of Service
- ★ No Change of Personnel
- ★ No Change of Operations

POST WAR PLANS are important, too! The hundreds of pilots, mechanics and aircraft technicians among our skilled personnel constitute a smooth-working machine which can render invaluable service to aviation in the Southeast. Our vast backlog of experience in war flying will be available to both commercial and private flyers. Through our affiliated company, Southeastern Air Express, Inc., we plan a system of feeder air lines. Southeastern Air Service, Inc., is the name which will designate the fixed base operations. We invite continued contacts from manufacturers and others in aviation who are interested in post war sales, service and maintenance "all over Dixie."



**SOUTHEASTERN**  
**AIR SERVICE, INC.**  
Formerly GEORGIA AIR SERVICE, INC.

Flight Contractors to U. S. Army Air Forces — Bennettsville, S. C. and Jackson, Tenn.  
EXECUTIVE OFFICES — ATLANTA, GEORGIA

ing a proper and economic distribution of traffic, and developing a sound over-all transportation system in the public interest. It is, therefore, our view that under a competent system of private operation and management, without subsidies, a national transportation system can be developed that will be superior to any in the world."

The resolution does not go as far as Brown in demanding control of air-space. Said the resolution: "It is particularly important that wage and living standards . . . should be protected . . . we are opposed to any lessening of our government control of our air-space, and think that every application of any foreign airline to fly into or over the United States, whether or not authorized to carry traffic, should be separately considered as at present. In this way, the foreign airlines can be limited to a fair share of American international traffic."

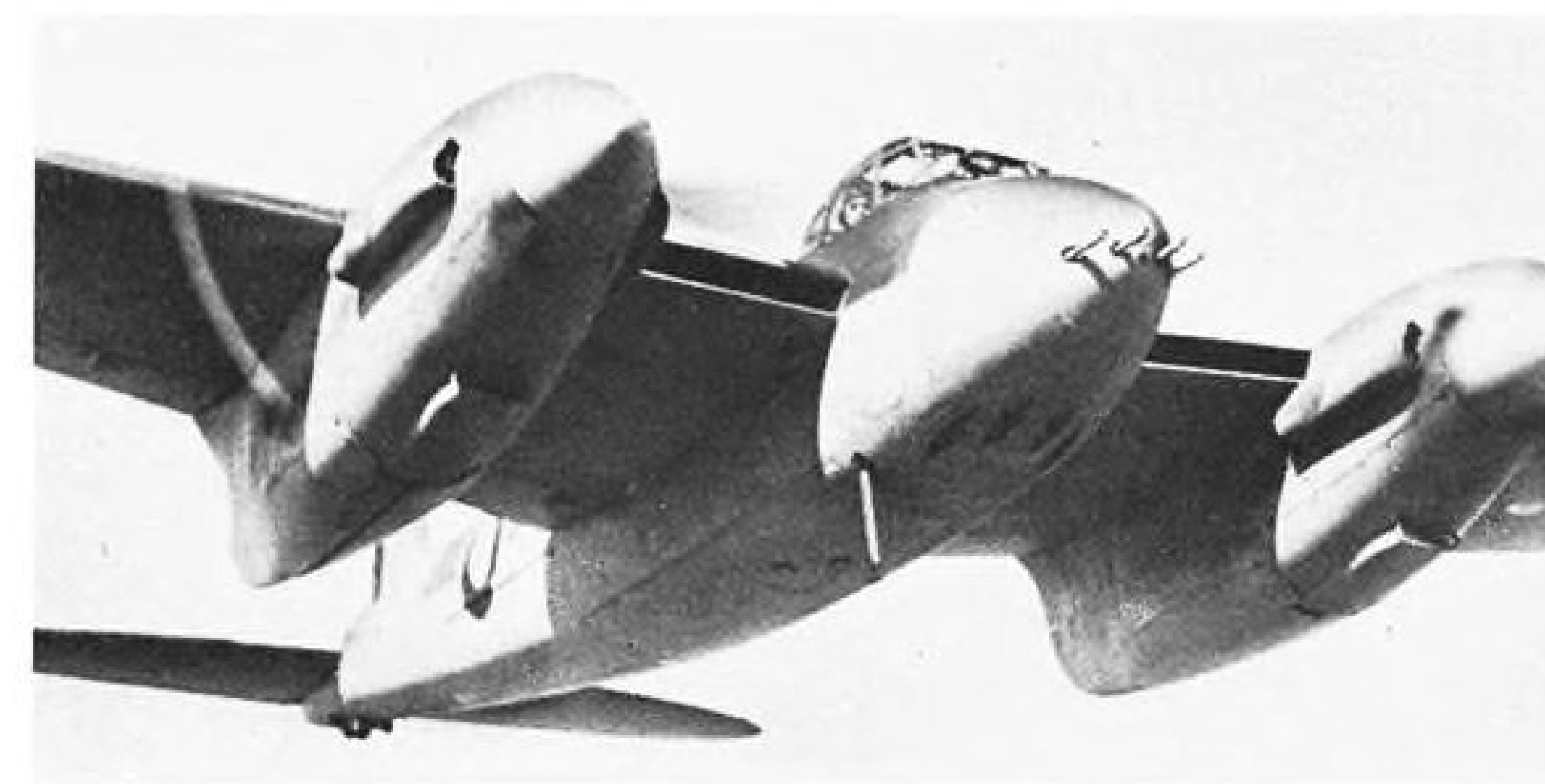
► **Border Terminus Urged**—Fear that airlines would control traffic from the interior to foreign points, to the exclusion of rail travel, seems to be explicit in a section of the resolution that "Foreign lines operating to the United States should terminate at our regular border ports, our domestic airlines should be limited to the domestic field, and American international air transport service should also terminate at border ports to act as end-on carriers with both our rail and domestic air carriers."

► **Oppose Monopoly**—The railway labor executives want the international field restricted to one carrier representing the United States, with domestic carriers given the opportunity to have an interest.

"We are opposed to any one American Flag air line having a monopoly over our foreign commerce," the resolution states. Since the Association includes labor executives of steamship and long-shoremen's unions, Brown was asked whether the same trend of thought was being applied toward steamship companies—one carrier with all companies participating—but he said it was not, adding that steamship lines "do not have to get franchise rights like airlines."

## Airport Survey

Michigan State Board of Aeronautics has started a series of surveys designed to supply it with a master plan of possible private flying field sites. The Michigan Wing of the Civil Air Patrol is conducting the study.



"Mosquito"—Super-Speedster: The 400 mph-plus speed of the Mosquito bomber has led to conjecture that a plane of this type could be used to provide super-speed transcontinental service for 15 passengers at a premium fare.

## Mosquito May Alter U. S. Air Schedules

Record run between Toronto and New York adds to belief that high-speed transports may offer extra-fare service.

British success with the high speed Mosquito bomber may bring changes in the post-war airline picture in this country, making possible deluxe transcontinental express service in planes similar to the Mosquito.

Heretofore the comparatively higher speed of the commercial airliner measured against surface transportation has sufficed. But even before the war, there was considerable talk about super-speed service offered at a premium. This chiefly centered around larger planes flying non-stop in the stratosphere. Actually, no plane was developed that could economically provide such service, and recent discussion in the industry has centered about four-engine ships with a passenger capacity of about 50 persons.

► **Coast-to-Coast in Eight Hours**—Now, however, the revelation that James Follett, chief test pilot for de Havilland, flew the 377 airline miles from Toronto to New York in 55 minutes—an average of 411.24 miles an hour—opens an interesting vista for airline operators, since it would make possible passenger service from New York to San Francisco in something less than eight hours compared with the approximately 22 hours with DC-3 operation and the 10 hours projected for large ship service. This is in line with the trend of thought in

the industry toward frequency of service as a measure of operation rather than size. While the transcontinental time naturally will be reduced considerably with the new planes coming along after the war, nothing now in sight can compare with the service that would be possible with a super-speed plane such as the Mosquito, which in a commercial version could carry somewhere in the neighborhood of 15 passengers.

A recent discussion participated in by aircraft manufacturers' engineers and airline engineers and traffic men brought out that deluxe service—say, non-stop New York-San Francisco—would, under the concept then accepted, require a four-engine, 50 passenger plane. At least that was the consensus. Yet the same object could be accomplished with the Mosquito-type plane and at the same time permit a frequency of service hardly conceivable for some time at least with the larger craft.

It also is known that some American manufacturers at least have been thinking along similar lines. For example, Northrop has been studying the possibility of converting the P-61 Black Widow for this super-speed service through use of a different fuselage which, while it would cut the speed of the fighter somewhat, would still enable flight in high speed ranges, and provide for 20 or more passengers.

► **Super Service**—The super-speed service would inject a situation in commercial airlines similar to that existing in the railroad industry, with different classes of travel. With the increasing importance of the western territory in the na-



tional business picture, the service would speed travel between New York and the West Coast.

This super-speed service is largely in the study and conjecture phase, yet the possibilities are so great that such a service undoubtedly will be one of the major developments of the post-war air transportation picture. The chief question seems to be one of method.

## Bus Operator Asks Helicopter Route

Authorization sought for 1786 miles of lines, chiefly in New Jersey.

A large bus operator, the Public Service Interstate Transportation Co. and/or Public Service Coordinated Transport of Newark, N. J., filed with the Civil Aeronautics Board last week for a permanent certificate authorizing 1786 miles of helicopter routes chiefly in New Jersey. (Docket 1338.)

Northwest Airlines applied for four routes between Chicago, Nome and Anchorage, Alaska, via various intermediate points. They also have asked authorization for a route from Seattle to Anchorage and Nome. The application was filed as an amendment to a previous application for a Chicago-Fairbanks route. Among other applications are:

Ohio Airlines of Cincinnati, amendment of

original application (Docket 1072). Applicant contemplates four routes by conventional aircraft and one helicopter route through Ohio, Indiana and Kentucky.

Page Airways, Inc., of Rochester, N. Y., amendment to application (Docket 1049, consolidated with docket 609 et al) by substituting Elmira-Corning for Elmira as an intermediate point and deleting Dansville, N. Y., and Sunbury, Pa. Application consolidated with other applications concerning service between Washington, New York, Ottawa and Montreal. Hearings set for Apr. 17.

New England Airlines of Cambridge, Mass., for certificate authorizing mail, passenger and property service by conventional aircraft over four proposed routes in New England with Boston, Hartford, Schenectady and Concord, N. H., as terminals. (Docket 1336.) Not connected with former TWA-New England.

Commercial carriers, Memphis, Tenn., "fly-away" or ferrying service of new or used aircraft over irregular routes between any and all points in the U. S. and Alaska. (Docket 1337.)

W. A. Hunter, Jr., of Columbia, Tenn., scheduled transportation of passengers, freight and mail by conventional type aircraft over two routes in Tennessee and Alabama using Nashville, Tenn., and Birmingham, Florence and Huntsville, Ala., as terminals. (Docket 1339.)

Chester A. Martin, doing business as Kodiak Airways, for a permanent certificate covering a scheduled and charter route between Kodiak, and Anchorage, Alaska, and other points in the Aleutian and Kodiak islands. Applicant said operations had begun Mar. 6. In a second application, an exemption to permit operations until a permanent certificate can be issued was requested. (Dockets 1340 and 1341.)

## Canadian Pacific Asks Five Routes

Canadian Pacific Airlines has applied for five routes in eastern Canada to the Department of Transport and Board of Transport Commissioners at Ottawa.

It requested authorization to connect Montreal and Toronto, Toronto and Guelph, Ont., Montreal and Noranda, Que., Toronto and Noranda, all via intermediate points, and

## Air Rules Parley

New air rules drafted by the Illinois Aeronautics Commission will be discussed publicly at meetings Mar. 25 and Apr. 1.

Commission Chairman Ben Regan said the first will be held in the Chicago offices of the Illinois Commerce Commission, the second in the Springfield headquarters of the Aeronautics Commission.

Illinois airmen are receiving copies of the proposed regulations from Lieut. Col. George C. Roberts, Commission secretary at Springfield.

Sioux Lookout with the Port Arthur and Fort William twin cities.

Among its routes in eastern Canada, the company now operates eastward from Montreal via Quebec City, but has no routes north or west out of Montreal, nor runs out of Toronto. The Sioux Lookout route would extend a number of runs north from that point.

► **Feeder Routes**—The proposed routes would come under the feeder route heading, since Trans-Canada Airlines operates main routes north connecting Toronto and Montreal via Ottawa, Toronto and North Bay on its transcontinental run; and Toronto and Windsor, where it connects with American Airlines to Chicago.

## Seven British Models Ready for Post-War

Planes, including jet type, prepared for competition with U.S. for commercial air domination, Sinclair tells Commons.

Great Britain has seven new types of planes in preparation to compete with the United States for post-war mastery of commercial aviation, including a jet-propelled model, Air Minister Sir Archibald Sinclair last week told Commons. The members obviously were concerned that the United States might dominate post-war skies and had demanded an expression of Britain's intentions.

Sinclair told Commons he could give no details of the jet plane except that "its speed will far outclass any civil type machine now in operation." It never has been disclosed whether the United States is experimenting with the jet plane for civil use, just as the lid has been kept clamped on many other post-war preparations in this country.

► **50-Ton Plane**—Another British type being tested, Sinclair said, is a land plane of more than 100,000 pounds, capable of operating the North Atlantic route with a stop at Newfoundland.

Another type of airplane he described as a 40,000-pound plane equipped with pressure cabin and with accommodations for 30 passengers. This plane, he said, is designed for the European service.

What possibly may be a trend of thought in Britain—one which certainly parallels the attitude taken after the first World War—was expressed in the debate when a Conservative member scored what he termed "American press claims" to rights for the United States in the bases built with lend-lease funds, asserting that all such expenditure was "a contribution to the United Nations war effort and nothing more."

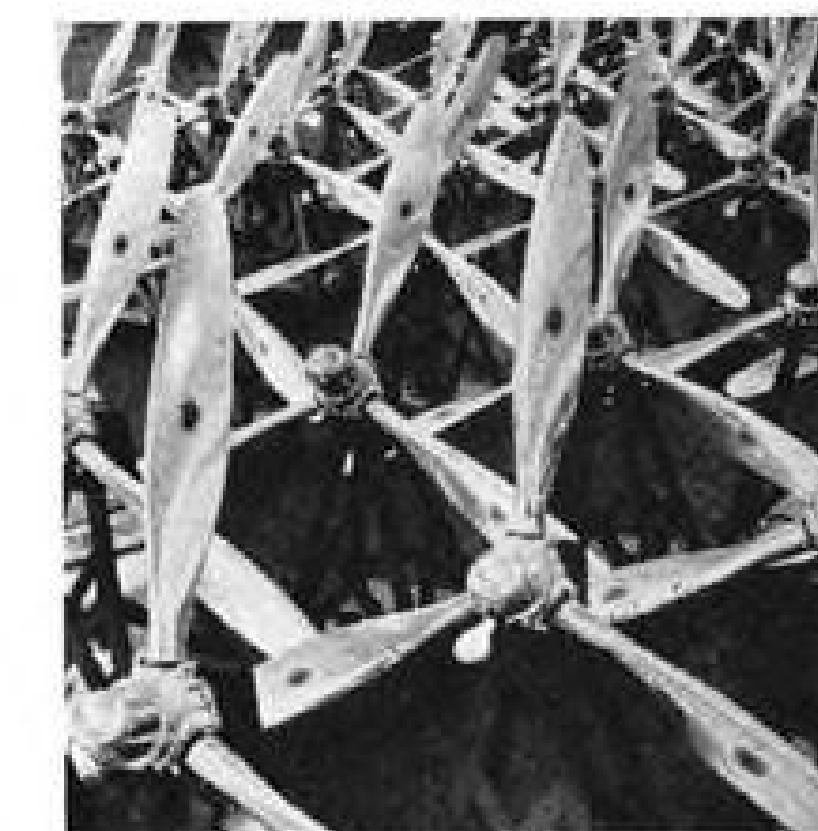
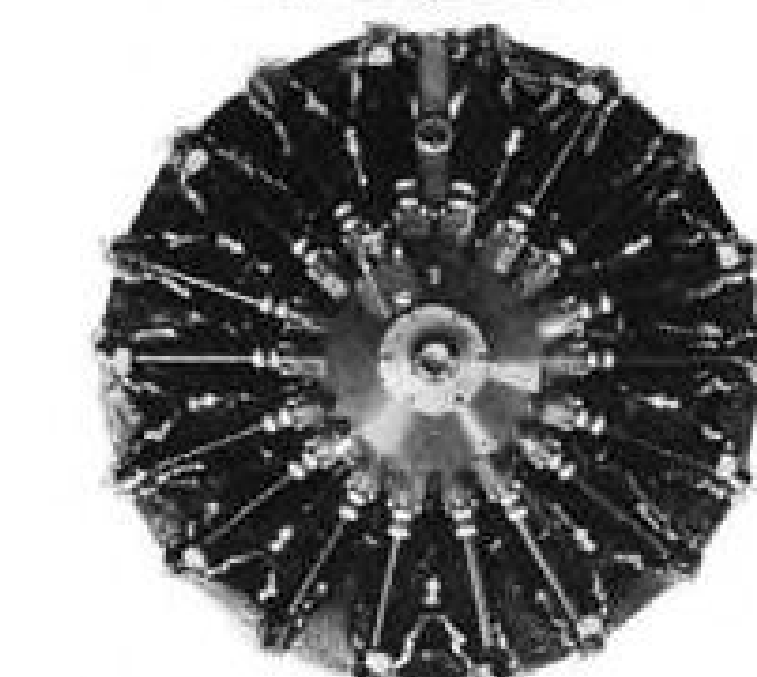
► **Agreement With Dominions**—Sinclair revealed that Britain already had obtained a "broad measure of agreement" with the dominions and that Britain will participate in any post-war discussions "as an empire."

He also pointed out that the RAF Transport Command would be a permanent part of the air force and "for many years to come it will be numerically larger than the number of aircraft at the disposal of civil air transport."

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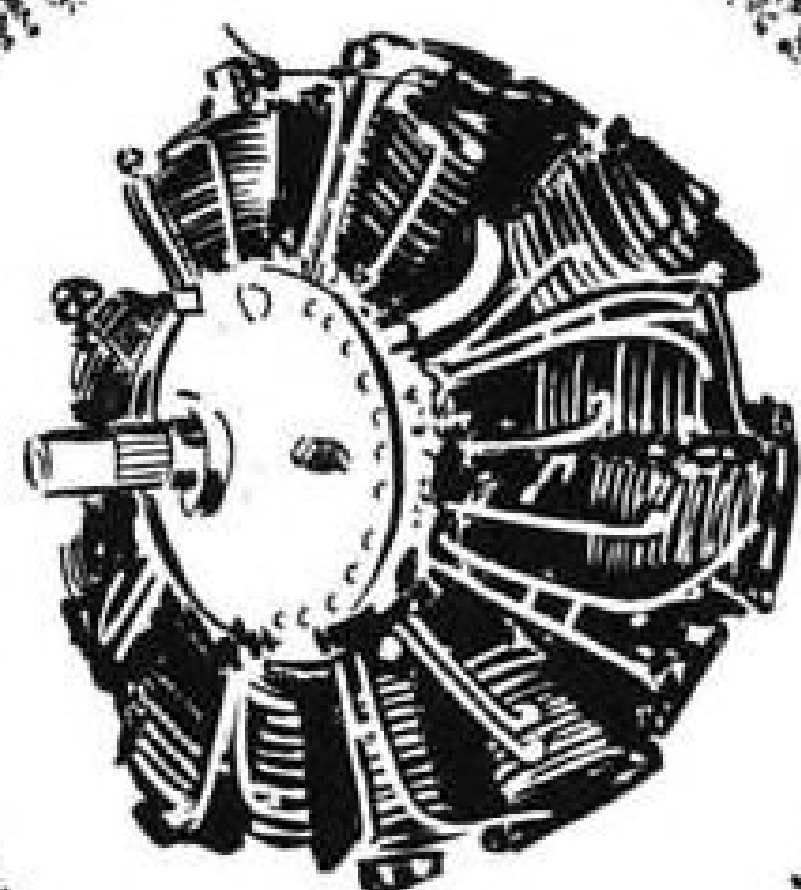
## NATIONAL OPENS MIAMI-KEY WEST SERVICE:

National Airlines received a welcome from military and civic officials at Key West's Meacham Field when this Lodestar put down there last month to open thrice-daily service between the island and Miami. George T. Baker, NAL president, was pilot on the first flight.



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3-10-8

## CAB ACTION

● Braniff's application to include Lubbock, Texas, as intermediate point on AM 15 between Amarillo and Wichita Falls will be recommended for Board approval, Examiner Thomas L. Wrenn said at close of hearing. Objection was entered by Continental Air Lines, which contended that granting Braniff's request might prejudice business along 191 miles of a route between Tulsa and Hobbs, N. M., for which Continental has applied. Should Continental's application be approved the two lines would parallel. Continental's executive vice-president, Terrell C. Drinkwater, appeared at the hearing under a Board rule which permits any person to submit evidence relevant to the case, after a petition to intervene had been denied. The cities of Lubbock, Dallas, Wichita Falls and Fort Worth also were represented. An examiner's report was dispensed with by mutual consent.

● Expressing strong disapproval of the Board's decision giving National Airlines a route along the eastern seaboard to New York (Docket 445), Colonial Airways filed a petition to reopen the case. Viewing Miami as the chief gateway to the Caribbean and South America, Colonial takes the position that the certificate awarded National in effect constitutes authorization to that line to engage in foreign commerce, and that the Civil Aeronautics Act might thus be interpreted. Colonial's application for New York-Nassau service along a chiefly coastwise route was deferred in the National decision. Colonial feels that the financial burden of preparing its case was too great for a small carrier. The death of Sir Harry Oakes, of Nassau, also deprived Colonial of one of its chief witnesses.

● Examiners William J. Madden and H. Heinrich Spang, in a prehearing conference report refused to grant TWA's request that certain east-west applications of that carrier be consolidated with the Washington-New York-Ottawa-Montreal proceedings. Applications which TWA desired to include were all for additional intermediate points on east-west routes between New York and Wheeling, Washington, and Pittsburgh. The examiners recommended that the Blue Ridge Lines, a bus line, be permitted to intervene, inasmuch as an application by them comprises certain segments under consideration in this proceeding. Apr. 17 was assigned as the hearing date. Colonial, American, Eastern, PCA, United, Union Airways, Inc., Page Airways, and Hylan Flying Service are interested parties and will be heard in that order.

● Hearing on the Great Lakes-Florida case (Docket 570 et al) will not be held until some time in June or July, Examiner Ross I. Newmann said last week. This case involves applications for 88 routes and is one of the biggest domestic cases ever handled by the CAB. Most of the applicants stated at prehearing conferences that they preferred to postpone the hearing until those involving service to South America, scheduled for May 15, are complete. Many of the applicants are appearing in both proceedings. Some applicants also requested postponement in view of the fact that their presentations would be partly based on the outcome of the Atlantic Seaboard Case on which a decision is soon due. The examiner indicated that further consolidations of the docket probably would be made.

● Although no definite date has been set, the examiner's report in the Los Angeles-Denver case probably will appear within the next two weeks.



## Northeast Gets OK On Mayflower Bid

CAB Examiner Law approves absorption of Boston-Nantucket line.

Northeast Airlines' proposed absorption of Mayflower Airlines, to obtain that suspended operator's certificate to transport persons and property between Boston and Nantucket, has the sanction of a Civil Aeronautics Board examiner.

Aside from some land on Nantucket Island, the certificate is Mayflower's only asset, since it has no equipment and is now in bankruptcy. Northeast officials haven't decided just what they'll do with the land.

The report, by F. A. Law, Jr., recommending that the Board grant Northeast's application to acquire Mayflower, marks the second time this smaller air carrier has been looked on with favor recently by a CAB examiner. In January, another examiner proposed that Northeast be permitted to operate the much-fought-over New York-Boston route.

► **Seeks to Buy Certificate**—Northeast wants to buy Mayflower's certificate and a tract on Nantucket Island, formerly used as an airport, for \$17,500, and has an agreement with the latter's trustee to that effect. A \$2,500 deposit has been made. The certificate authorizes transportation of persons and property and has as intermediate points Provincetown and Hyannis on Cape Cod, and Oak Bluffs on Marthas Vineyard.

The land is 166½ acres, adjacent to Nantucket's present airport. It cost Mayflower \$3,000 and was assessed for purchase negotiation at \$8,300. About \$9,200 had been spent to clear it, grade runways, and build two radio towers. Northeast believes it will be handy for servicing and storing private aircraft, of which from 100 to 400 flew to the island annually before the war, and it probably would be necessary to any airport expansion at Nantucket.

► **Suspended**—With the Board's permission, Mayflower suspended operations in September, 1939, thereby closing a route over an area "peculiarly inaccessible by surface transportation." An involuntary petition of bankruptcy was filed against the line in 1942.

Law characterized Northeast as "a small, regional air carrier whose authorized routes aggregate 869

## Gray in Navy Air

Parker W. Gray, original owner and operator of Mayflower Airlines, of which acquisition by Northeast was recommended by Examiner F. A. Law of CAB, is now a lieutenant (j.g.) in Navy Aviation. Mayflower's operations were suspended in 1939 when Lieut. Gray joined the RAF. Having won the DFC while flying with the British, he transferred to the Navy when the United States entered the war. He now holds the Navy Cross and is chief test pilot for the Naval Air Facility at Trenton, N. J.

miles" and said that, even if it acquires Mayflower, it will be unable to maintain the additional service with the present two DC3's in operation on AM 27 between Boston and Presque Isle, Maine. Service on the proposed extension thus would not begin until more equipment is available and the Board revokes the suspension of service order (Docket 1083) now in effect.

## ATA Announces '43 Award Winners

Two employees of Transcontinental & Western Air and one of Northwest Airlines are announced as 1943 winners of Air Transport Association's annual competition for the best papers by airline employees on problems dealing with meteorology.

S. R. Frank, TWA at Burbank, won first prize of \$250; Donald Linklater, NWA at Seattle, second prize of \$150, and D. M. Crowley, TWA at Kansas City, third prize of \$100.

► **Air Mass Tendency Chart**—Frank's paper discussed construction and utilization of an air mass tendency chart. Linklater's was devoted to investigation of the use of constant level pressure charts for forecasting winds aloft. Crowley wrote about the characteristics of low pressure troughs along the eastern slope of the Rocky Mountains, and how to forecast thunderstorms at night.

Judges in the 1943 contest were three members of ATA's meteorological committee: Dan O'Keefe of Pennsylvania-Central Airlines, Dr. C. E. Buell of American Airlines, and Dudley Beresford of Northwest Airlines.

## SHORTLINES

► Pan American claims new records for handling passengers, mail and cargo at its North Beach (La Guardia Field) marine terminal. In two recent departures and one arrival 46,494 pounds, including 144 passengers, passed through the Terminal. Crews handled 95 passengers and almost 15 tons of cargo, passengers and mail in one hour during that period. In a 30-hour period including this time, 41½ tons of passengers, cargo and mail were checked in and out. Passengers arriving and departing numbered 201.

► Transcontinental & Western Air has added three daily schedules through Reading, Pa., pending possible reopening of Philadelphia Airport. One eastbound and one westbound flight had been operated at Reading by TWA. The three new flights are two westbound on transcontinental schedules and one eastbound.

► Word from Massachusetts is that nine petitions for intrastate operations in the Bay State have been filed with the Aeronautics Commission there. Action is being delayed pending outcome of similar matters in other states. The Commission has been without either chairman or state aeronautics director. Some of the petitioners have filed with the Civil Aeronautics Board, but it is understood that none owns aircraft.

## CAB SCHEDULE

Mar. 27 Oral argument, New York-Boston case, before the Board. Northeast, TWA, Colonial, American, Seaboard Airways, Eastern and United are involved. (Docket 13-401-B-1 et al).

Mar. 29 Hearing on maximum operating weights of scheduled air carrier aircraft.

April 1 Deadline for exhibits in the Caribbean investigation.

Apr. 3 Hearing before Examiner Frank A. Law, Jr., on applications of Mid-Continent, Kansas City Southern, Delta Air, and National for service between New Orleans and Kansas City. (Docket 651 et al).

Apr. 5 Oral argument before Board on Local-Feeder-Pickup investigation.

Apr. 12 Hearing on applications of TWA and American to include Joplin, Tulsa, and Oklahoma City as intermediate points on existing routes. Examiner Lawrence J. Koster. (Docket Nos. 413 and 1300).

April 15 Prehearing conference on applications of Alaska Star Airlines and Woodley Airways for routes between Anchorage, Fairbanks, Homer and Kodiak.

Apr. 17 Examiners Madden and Spang will hear applicants in the Washington-Canada proceedings. (Docket 609 et al).

May 1 Tentative date for prehearing conference on applications for trans-Pacific routes between Los Angeles, San Diego, San Francisco, Seattle and Honolulu. Applicants already on file include Hawaiian Airlines, Ltd., TWA, Matson Navigation Co., and Northwest.

May 1 Rebuttal exhibits due in Caribbean investigation.

May 15 Hearing on applications involving service to South America.



## FINANCIAL

# Convair Likely to Enter Post-War Era In Strong Financial Position

Tremendous production volume and reported backlog of three billion expected to add further to company's equity values this year.

By ROGER WILCO

Consolidated Vultee's annual report was heartening to those who believe in the financial future of the aircraft industry. While an account of the year's results of the world's largest producer of aircraft is noteworthy in itself, further significance may be found in the forecast of earnings soon to be revealed by other plane builders.

Consolidated Vultee's net income, as adjusted, for the fiscal year ended Nov. 30, 1943, was \$20,875,544—almost three times the \$7,003,970 profit for the previous year for the component units. Current earnings were \$13.76 per common share or equivalent to about the price of the stock in the market. This showing was made in the face of a reduction of \$251,000,000 in charges to the government along with provision for a further refund of \$80,000,000. These results, however, are subject to renegotiation proceedings.

► **Volume**—Key to these outstanding gains is simply the tremendous volume of production the company was able to accomplish. All told, almost \$800,000,000 in billings were reported for the year. This huge amount of sales, accompanied by a rapid turnover of capital, generated substantial residual earnings. Yet, the profit margin on sales shown by the company was only about 2½ percent. (During 1942, general industry averaged a profit margin of 6.7 percent.) This is merely a case of successful merchandising common to any enterprise—volume turnover at a low profit margin.

Unnoticed has been the effect of these earnings on Consolidated's equity position. As of Nov. 30, 1943, the company's book value amounted to about \$33.40 for each of the 1,385,945 common shares outstanding. This was after adjusting for the 204,819 shares of pre-

ferred at the indicated call price of \$27.50 per share. About one-half of the book equity was contributed by the past year's earnings.

► **Asset Situation**—Some suspicion may be advanced that most of this equity is tied up in plant and other fixed assets. An examination of the balance sheet discloses otherwise. Out of total assets of almost \$400,000,000, around \$16,000,000 is represented by fixed or plant assets. This is equivalent to about \$11.40 per common share. And by no means does this represent an investment that will be without value in the post-war period. Inventories, representing the largest asset item, totaled \$158,280,583. As this was valued on a conservative cost basis and with the Baruch recommendations on termination of contracts as a safeguard, it is unlikely that frozen inventories will result to any appreciable degree.

Fortified by such earnings and with assets tending toward a cash or liquid nature, Consolidated may be expected to enter the post-war period in a comfortable financial position. And with a reported backlog of \$3,000,000,000 and assuming the current year's operations will be no worse than 1943, it isn't difficult to visualize further substantial gains for the equity values.

► **Net Income**—This is a condition that is fundamental and may well prevail for the aircraft industry as a whole. For instance, reliable reports estimate that Glenn L. Martin for 1943, will show net income exceeding by a wide margin the \$6.01 a share reported in 1942 and on which no renegotiation refund was required.

It must be clearly recognized, however, that renegotiation seriously qualifies all aircraft earn-

ings. Extreme care must be taken to note if earnings are stated before or after renegotiation. For example, this factor qualifies Consolidated's recent earnings. In addition to the refunds made and provided for, the company calls attention to the fact that, "if a refund were required on the same general basis as the settlement for the fiscal year 1942, there would be an additional charge against net income of approximately \$7,500,000 after deduction of applicable Federal income and excess profits taxes". This would reduce net earnings by about \$5.40 per share.

► **Negotiation**—While Consolidated does not believe further refunds should be required, it is probable that the Price Adjustment Board may consider otherwise and press for additional reductions.

Unless accelerated, the processes of renegotiation may place aircraft earnings on a tentative basis until finally clarified. However, as in the Consolidated report, the extent of possible revision of earnings will most likely be indicated by the other plane builders in their annual statements, where present.

► **Dividends**—While the aircraft industry is ploughing back most of its earnings, some return is also being made to stockholders. During its 1943 fiscal period, Consolidated disbursed an aggregate of \$1.50 per share to its common stockholders. Another dividend of 50 cents per share was paid Mar. 1, 1944. Of course, this is in addition to the regular annual dividend of \$1.25 per share being paid on the company's preferred shares. Other aircraft companies have likewise formed the habit of paying regular dividends, albeit on a conservative basis.

The Consolidated report also revealed a trend away from cost-plus-fixed-fee contracts. During 1943, the company reported that approximately 75 percent of its total deliveries were produced on the basis of fixed-price contracts. Experimental contracts, on which production costs can not be determined in advance with any degree of accuracy, were negotiated on a cost-plus-fixed-fee basis. The management is a strong advocate of the fixed-price contract, maintaining that both the government and stockholder best benefit under this arrangement.

► **Cost-Plus Contracts**—At one time the cost-plus contract predominated in the aircraft industry. This was logical in many instances as the group embarked on un-

known production courses in the building of new type planes. However, with greater stability of production and actual costs more accurately known, the basis for this method is difficult to support.

In fact, all industry is moving away from cost-plus. At the recent hearings on a Senate resolution which would abolish this type of contract, WPB Chairman Nelson revealed that in the second-half of 1943, these arrangements were down to 38.4 percent of total contracts involving \$10,000,000 or more and compared with 54.6 percent in the second half of 1942. Nelson did urge, however, that the proposed ban allow exceptions under special circumstances to avoid hampering vital aircraft and ship-building programs.

## Financial Reports

► **Hayes Manufacturing Co.**, and subsidiaries, for the December quarter reported a net profit of \$151,756 or 17 cents a share against \$181,762 or 21 cents a share for the similar period in 1942. For the 12 months to Dec. 31, net profit was \$791,139 or 90 cents a share, compared with \$335,252 or 38 cents a share for the year ended Dec. 31, 1942.

► **Aero Supply Manufacturing Co.**, Inc., reported for 1943 net profit of \$413,933 or 95 cents a Class B share, subject to renegotiation, after \$1,040,000 reserve for renegotiation refund and \$4,059,014 taxes after post-war refund. Net for 1942 after Federal taxes of \$1,226,161 and provision for renegotiation settlement was \$447,968 or \$1.04 a share.

► **Minneapolis-Honeywell** reports that automatic pilots and electronic controls for superchargers of multi-engined planes constituted a heavy proportion of the company's 1943 sales, with the Aero Division also engaged in undisclosed production for the Army Air Forces. Total sales were \$68,340,590, up 65 percent from 1942 total. Company also provided industrial controls for the 100-octane gasoline program, which were credited with helping in the success of that program.

► **Packard Motor Co.** reports 70 percent more engines were produced in 1943 than the record output of 1942, yet net earned profit increased only \$28,350, stockholders are told in the annual report. Profits for 1943 totaled \$4,754,587

or 31.7 cents a share on its 15,000,000 no par common shares against \$4,726,237 or 31.5 cents a share for 1942. Net sales, billings and other income totaled \$341,261,650, an increase of \$118,192,048 over 1942—53 percent. Taxes, renegotiation provisions and price reductions were controlling factors.

► **Thompson Products, Inc.**, and subsidiaries, excluding Thompson Aircraft Products Co., reported 1943 net profit as \$2,304,148, after charges, provisions for contingencies and for federal income and excess profit taxes, equal to \$7.21 per common share. The 1942 net was \$2,051,417, equal to \$6.49. Thompson Aircraft Products Co., a wholly-owned but unconsolidated subsidiary, reported a 1943 net profit of \$466,694, against \$390,200 in 1942.

► **A. O. Smith Corp.** and wholly owned subsidiaries reported net profit of \$2,054,207, equal to \$4.12 a share for the quarter ended Jan. 31, compared with \$1,416,601 or \$2.84 a share for the same period a year ago. Renegotiation of government contracts has been completed for the 12 months period ended July 31, 1942.



### MARS PROPELLERS:

The 20 production versions of the Martin Mars flying boats will be equipped with Curtiss Electric propellers 16 feet 6 inches in diameter, world's largest three-blade hollow steel models. These props, shown here with a Curtiss-Wright employee, will harness the four 2,200-hp. Wright Cyclone engines.

## Lockheed Dividend

► **Lockheed** stockholders, voted a dividend of 50 cents a share by the board of directors last week, have been cautioned by Lockheed President Robert E. Gross that the action was not to be considered as establishing a schedule for future payments because "the more Lockheed's experience in its war work broadens, the more apparent it becomes that that company's margin of profit probably will be less than in the past."

The dividend, payable Apr. 10 to shareholders of record Mar. 27, calls for payment of \$537,945 to holders of 1,075,890 shares.

## Kellett V Loans

Kellett Aircraft Corp. has arranged a V loan credit of \$2,000,000 to be used for financing war contracts and for settlement of contract termination costs. Banks participating include the Girard Trust Co., Philadelphia; Philadelphia National Bank, Chase National Bank and Brooklyn Trust Co.

## New Plane Sextant

An aircraft sextant which tells pilot, within a negligible variation percentage the plane's exact position, has been developed by Eclipse Pioneer Division of Bendix Aviation Corp.

The aircraft sextant functions entirely on mechanical principles and is operated manually. It is not dependent on any electrical energy and there is little likelihood of its being affected by magnetic conditions. Its operation is comparatively simple. The pilot sights a heavenly body and takes his bearings from it. It checks the plane's predetermined course and determines its position when lost. Should a plane's compass or other standard guide instrument fail, the aircraft sextant comes into the picture.

The instrument requires protection against breakage, shock and weather, and Bendix said plastics were chosen to afford the greatest protection for this precision instrument. Some of the instrument housings, the company said, are molded from Durez plastics, made by Durez Plastics and Chemicals, Inc. and the case, an intricate molding job, was produced by Rathbun Molding Corp. from medium-impact durez.



## Insurance for the Future

THE PROPOSAL for a House Select Committee on post-war military policy has the heartiest support of aviation. Backers also include most of the leaders in our military services, WPB, and industry.

The apparent unanimity of support and rapidity of action from the time the bill was introduced last week by Rep. Wadsworth is an encouraging demonstration of the speed at which Congress can work. Formation of the committee was expected within a matter of days, following expected approval by the President.

Thus, the crucial question of the composition and size of our post-war air force, a topic we shall see much about from now on, will come before respected, informed representatives of the public, which will pay the bills. No Administration project prepared by Washington thinkers whose first thought must be political would have the public confidence needed for

# The World's Fastest

NORTH AMERICAN AVIATION reports it has been permitted by War Department authorities to announce that its *Mustang* fighter is the world's fastest airplane, capable of considerably more than 425 miles an hour level flight, with top rating in War Department listings of ceiling and range. All of the repercussions of that statement will not develop over Germany.

The U. S. Navy undoubtedly will be tempted to

## Statistical Confusion

THE RECENT commendable action taken by the Aeronautical Chamber of Commerce in organizing a Research and Statistics Department should lead to a simplification and standardization of statistics concerning the aircraft industry.

Aviation has grown so rapidly that accurate analysis have been almost impossible to prepare on some phases of production. Someone else always has been able to show new figures to discredit previous reports.

A similar coordination of facts and statistics should be made the subject of careful study in the air transport industry.

At present a plethora of airline figures reaches the public from the Civil Aeronautics Board, Civil Aeronautics Administration, Air Transport Association, Post Office Department, Railway Express Agency, and the individual carriers.

Various traffic and financial reports are released for individual months, quarterly periods, every six months, and yearly. Some yearly figures cover the calendar period, others the government's fiscal term ending June 30. Preliminary figures from any issuing agency usually vary from final figures, yet the painstaking researcher is not told this. Checking against other figures only adds to the confusion. Not only do tabulations by individual agencies vary, but one airline's interpretation of hours flown, passenger load factor, or available seat miles may not be the same as his competitor over the same route. Some figures

undertaking such a tremendous task.

Yet, the committee, with so much of the responsibility for the fate of our aircraft industry, will have constant advice and counsel of our leaders who are conducting the war in outlining the broad principles of future preparedness now before we lapse into peacetime temptations to "economize." The eventual answer may be a combined select committee of both branches of Congress.

Although it is understood in Washington that the highest military and naval policy-makers have already formally approved a coordinated war command, including a unified air force, to become effective at some future time, this problem undoubtedly will be explored thoroughly and independently by the new committee, which will probably find certain refinements necessary before the plan is completed.

announce, directly or otherwise, in similarly glowing terms the prowess of its *Corsair*, and from across the Atlantic will come newly phrased reports on the British *Mosquito*.

Fame is fleeting in aviation. A small swarm of new types of fighters is preparing at this moment to take the air against the enemy, and any one may become the new champion overnight. The significance is that the champions are being bred by the Allies.

are estimates but proper identification as such is not always made.

Financial reports submitted regularly to CAB are prepared with the use of a uniform system of accounts which is generally successful, but inevitably monthly summaries, if computed for any year, fail to equal the total sent to CAB. Furthermore, the airlines frequently issue to stockholders and the press annual reports which do not tally with figures forwarded to CAB.

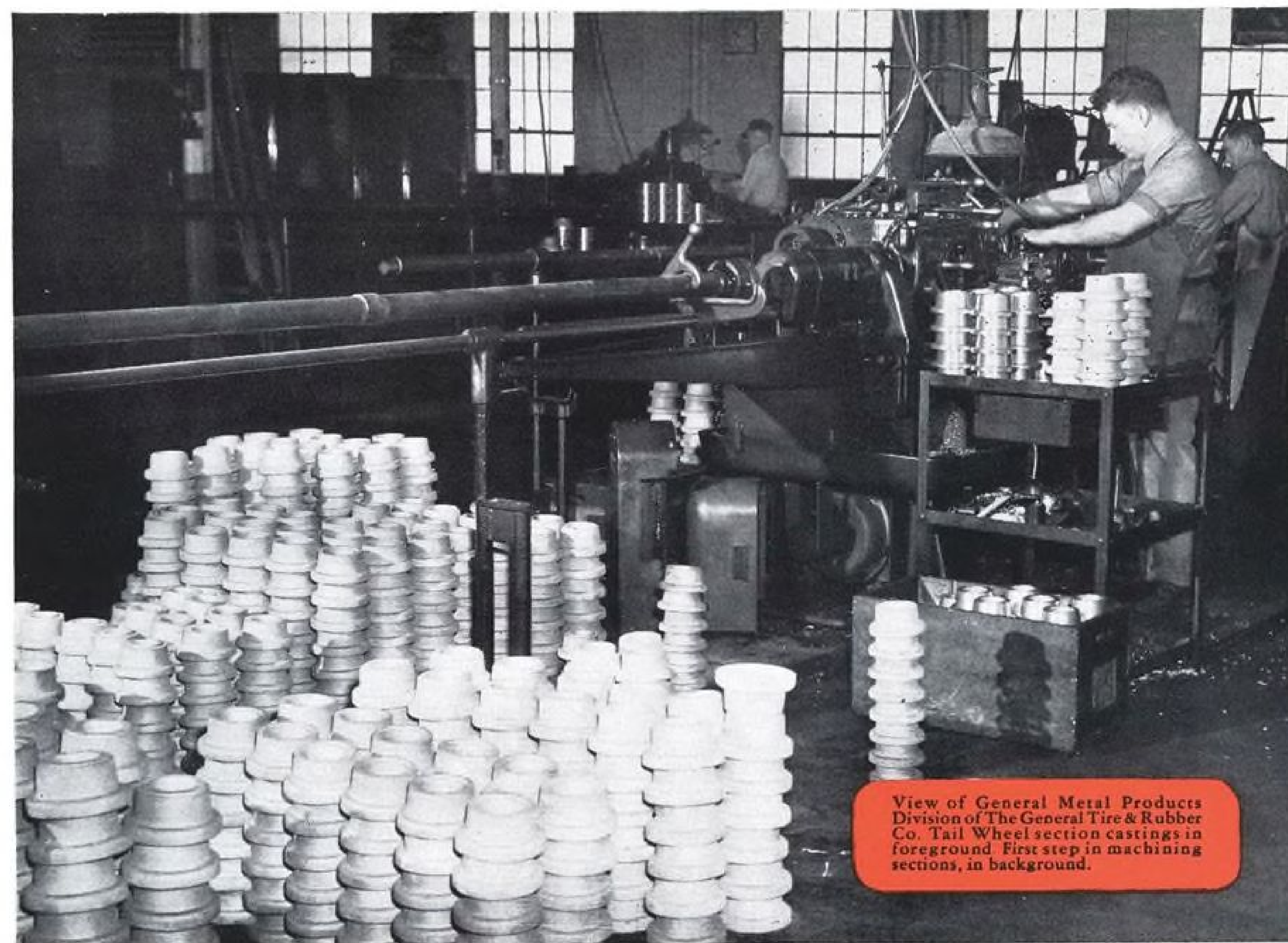
Post Office mail totals are frequently well afieid of data for the same flights and carriers which were filed earlier with the Board.

There is disagreement between issuing agencies as to whether the domestic airlines include Hawaiian, Caribbean and Atlantic, and Colonial. One agency includes passenger figures of American Airlines' Mexican operation with domestic totals.

It is well known that with the government's requirement of separate traffic reports for each air mail route, a single passenger making a continuous coast-to-coast flight without stopover on one airline may be counted two or three times, depending on the number of routes he uses. Every other transportation system is faced with this apparently necessary practice.

Nevertheless, many reforms could be made. Fewer statistics, better coordinated and standardized, issued possibly by a single clearing house, whether it be the air transport association or a government agency, is a worthy objective for the future.

ROBERT H. WOOD



View of General Metal Products Division of The General Tire & Rubber Co. Tail Wheel section castings in foreground. First step in machining sections, in background.

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Every finished tail wheel section is carefully inspected and checked and re-checked to make certain it meets rigid quality standards.

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AVIATION DIVISION  
THE GENERAL TIRE & RUBBER CO., AKRON, OHIO





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